Missing the forest for the carbon: Five familiar lessons being learned again in Malaysia

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Abstract: As nations scramble to reduce and offset their greenhouse gas emissions to achieve the goals of the Paris Climate Agreement, and corporations do the same for their own reasons, voluntary carbon markets flourish and demand for nature-based carbon credits outpaces supplies. Global attention is on countries with substantial potential to generate certifiable forest-based carbon credits. Despite nearly 30-years of experience with carbon offset projects, forest-based climate change mitigation projects of questionable quality still proliferate in Malaysia and elsewhere. Here, we assess the feasibility and sustainability of the Nature Conservation Agreement (NCA) – a recent project that includes two million hectares of protected forest in the Malaysian state of Sabah. We use this seriously flawed example to identify five key issues that forest carbon projects should not ignore: transparency, additionality, social equity, sovereignty, and complementarity. We also suggest how all five issues could be mitigated by use of a jurisdictional approach to forest carbon project development.

Keywords: carbon, climate change, finance, forest, Malaysia, nature-based solutions

INTRODUCTION

As extreme weather events continue to wreak havoc globally, countries that ratified the Paris Climate Agreement are under increasing pressure to reduce their climate impacts and liabilities. Natural or nature-based climate solutions present what are promoted as cost-effective opportunities for public and private sectors to meet their climate change mitigation goals, while providing numerous co-benefits that include improved soil productivity, increased sustainability of timber yields, protection of hydrological functions, maintenance of biodiversity, and livelihood benefits for local communities (Griscom *et al*. 2017, Soto-Navarro *et al*. 2020). Current demand for forest-based carbon credit is outpacing supply. In 2019, there was a 30% (or \$1.1 $t^{-1}CO_2e$) global increase in the average price of carbon offsets associated with nature-based solutions compared to the previous year (Forest Trends 2020).

Article 6 'Cooperative Implementation' of the Paris Agreement (UNFCCC 2021) provided new opportunities for forest carbon projects to reduce deforestation and forest degradation, as well as to promote reforestation. The carbon benefits from these projects may now be 'internationally transferred' to fulfil another country's Nationally Determined Contributions (NDCs) or for other purposes involving the private sector. Besides the European Union (EU), jurisdictions around the world are developing domestic carbon trading initiatives that involve forest carbon credits (World Bank 2021). Similar trends are underway in the voluntary market, which is increasingly open to forest carbon credits. Demand for forest carbon credits is likely to grow in response to expansion of both compliance and voluntary markets.

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Global maps of 'investible forest carbon' (Koh *et al.* 2021) highlight that Southeast Asia's 196 million ha of tropical forest could potentially be protected as financially viable carbon projects (Sarira *et al*. 2022). Among countries with tropical forests, Malaysia is ranked fifth globally in terms of investible carbon, estimated at 53.6 ± 21.4 million tons of CO_2 per year (Koh *et al.* 2021).

Malaysia's potential for forest carbon offsets was recognised nearly three decades ago when two path-breaking forest carbon projects were initiated in the East Malaysian State of Sabah. The first employed reduced-impact logging (RIL-Sabah) to minimise carbon emissions from selectively logged forests (Putz and Pinard 1993). The second – INFAPRO, employed large-scale enrichment planting to enhance both carbon accumulation and timber production in forest degraded mostly by intensive industrial logging (Putz and Pinard 1993, Moura-Costa *et al*. 1994) Although these projects both achieved their immediate goals of avoiding and recovering from forest degradation, respectively, neither was replicated in Peninsular Malaysia partially due to a lack of support from the federal government (FEP personal observation). More recently, numerous forest carbon projects have been initiated in Malaysia, including some championed by state governments (Chan 2011; Rahim 2011; The Star 2017; MOSTI and KETSA 2021; Chiam 2022; Kiew 2022; Neubauer 2022).

Sabah's Nature Conservation Agreement (NCA) (see Box 1 for a summary) is a recent and high-profile forest carbon project in Malaysia that has generated substantial controversy. The way it was developed and being marketed call into question the feasibility and sustainability of forest carbon projects (Neubauer 2022). Some of this controversy stems from the complications of implementing forest carbon projects in a country that is a federation of states, in which authority over land retained at the state level. While a federal carbon policy in Malaysia is being finalised, state governments are pursuing their own forest carbon projects, such as the NCA. Here, we use the NCA to explore five issues on which the success of forest carbon projects in Malaysia and elsewhere depend: transparency, additionality, social equity, sovereignty, and complementarity.

Box 1. Sabah's Nature Conservation Agreement (NCA)

In November 2021, an international environmental news platform, Mongabay, revealed that "state authorities (of Sabah, Malaysia) signed a 'nature conservation agreement' with a Singaporean firm, Hoch Standard Pte. Ltd., and involving an Australian management consultancy called Tierra Australia" (Cannon 2021a). The broker, Hoch Standard, is a shell company registered in Singapore, but wholly controlled by a British Virgin Island entity for which we failed to identify an owner. NCA aims to earn revenue through sale of carbon credits generated from 'protecting and restoring' the tropical forests across the state. This forest carbon project, has attracted more news coverage than any in Malaysia in part due to the extraordinarily high estimated income. Elected officials in the Sabah government signed a deal with this foreign private firm to monetise 'carbon' and 'other natural capital' in 2 million hectares of forests in the state for 'at least the next 100 years', with the estimated monetary value of around US$80 billion (Cannon 2021a; Neubauer 2022; Tan 2022). According to the deal's main proponent, Sabah's Deputy Chief Minister Jeffrey Kitingan, the 2 million ha forest encompasses those designated as 'Totally Protected Areas' (Sabah Forestry Department 2020; Cannon 2021b).

According to the annual report by Sabah Forestry Department (2020), "Totally Protected Areas (TPAs) in Sabah comprise of selected Forest Reserves gazetted under the Forest Enactment 1968, such as Class I (Protection Forest), Class VI (Virgin Jungle Reserves) and Class VII (Wildlife Reserves), as well as forest estates safe-guarded for the purpose of conservation under the Parks Enactment 1984, Wildlife Conservation Enactment 1997 and Environment Protection Enactment 2002. As of 2020, TPAs in Sabah covered 1.94 million ha, approximately 26.4% of Sabah's land area". The remaining forest land of the total of 3.57 million ha include areas in which logging is allowed.

The NCA has received heavy criticisms from communities, scientists and NGOs, citing a number of issues that are analysed and summarised in this paper. In February 2022, the State Attorney General asserted in a press release (Mohd Yusof 2022) that the NCA 'was a non-binding framework agreement' and 'in its present form is legally impotent'. It was also mentioned that 'the Sabah Climate Change Committee ('SCAC') and its advisory committee will assess and advise the Cabinet on all matters related to the NCA. The Cabinet reserves its right not to finalise the NCA.' At the time of writing (June 2022), no further progress was reported.

Transparency

Transparency is probably the most critical characteristic of successful forest carbon projects. It is not only important to eliminate confusion and build trust among the stakeholders, especially in landscapes inhabited by forest-dwelling indigenous communities. A previous carbon credit project that involved forest protection in the Malaysian state of Kelantan was criticised for lack of transparency, as the subnational government never informed local communities about the location and extent of the project area, nor did they consult them about the project (SAM 2017).

Negotiation of NCA did not involve local communities and civil societies from the onset; instead the leaders assumed they were 'acting on their behalf'. Based on the interviews by Cannon (2021a) with both the leaders and broker, there was no intention to involve the communities nor to obtain their free and prior informed consent (FPIC), which clearly violates the UN Declaration on the Rights of Indigenous Peoples that states that FPIC is necessary 'to the approval of any project affecting their lands or territories and other resources' (UN 2007). As the news spread among local communities, an immediate question was raised – what are the geographical boundaries of the said 2 million ha of forest? Eventually, NCA was regarded as 'legally impotent' by Sabah's Attorney General, citing the resistance of the promoters to undergo due diligence and lack of FPIC (and thus the potential impacts on customary rights) as the major reason among others (Cannon 2022; Mohd Yusof 2022).

The massive criticism received by the NCA in Sabah provides a stern warning that lack of transparency can quickly sink a forest carbon project. The NCA created unnecessary panic among local communities who feared that they could be effectively blocked from accessing the forests, or even lose their rights to their land. Similar lessons can be learnt from unsuccessful forest carbon projects in Kalimantan, Indonesia (Olbrei and Howes 2012; Lounela 2015). As such, potential forest carbon projects need to expend substantial effort to maintain the trust of indigenous peoples, or to rebuild it where they suffered in the past from dubious land-based projects such as opaque joint venture oil palm schemes (Majid Cooke *et al*. 2011). At the project development stage of any forest carbon project, greater dialogue through consultative workshops or townhalls can help assure local communities that historical injustices will not be repeated (*e.g.*, seizure of land from indigenous peoples under either the guise of development or conservation).

Additionality

One key concept under the said Article 6 of the Paris Agreement is 'additionality', which is additional emission reductions or removals 'that are additional to any that would otherwise occur' (UNFCCC 2021). Establishment of 'additionality' requires attention to counterfactuals – emissions or reduction in emissions that would otherwise occur. For example, Rimba Raya Forest Carbon Project in Central Kalimantan, Indonesia, which assumes that forests will be converted to oil palm or timber plantations without additional interventions, and thus is eligible to claim a large number of carbon credits simply through 'protecting' the forest (Enrici and Hubacek 2018). However, calculations may change drastically with the type of

methodology employed, as well as the different assumptions embedded in the selected methodology. Such uncertainty may stoke controversy over additionality. A prominent example was the debate over actual climate benefits derived from California's forest offsets program reported by Badgley *et al*. (2022).

One mistaken assumption is that payments can be generated from any forest through protection, without carefully considering the amount of time needed to demonstrate 'additionality'. For the case of NCA, since the targeted area is already 'protected', it will not be able to generate any eligible mitigation outcomes. Furthermore, the complexity of calculating and verifying 'additionality' can be challenging. However, with the availability of publicly available land cover maps to measure forest cover change, *e.g.*, works by Hansen *et al.* (2013) and Gaveau *et al.* (2019), scenario-based models based on historical and future deforestation rates can easily be constructed by project developers to quantify 'additionality' with and without the presence of a forest carbon project.

Social equity

NCA, like other forest carbon projects, need to deal with issues related to equity, fairness and justice, especially when they involve multiple land users and indigenous people (Friedman *et al.* 2018). More specifically, the challenge lies in how to create a system that allows a fair distribution of the monetary and non-monetary benefits among the actors involved. The immediate questions would be: who has the right to benefit from the 'sales of nature', or in this case, 'carbon'? Who are considered 'service providers'?

These critical questions have distributional implications for the local communities (Mauerhofer *et al.* 2013), and lessons might be taken from the Reducing Emissions from Deforestation and Forest Degradation (REDD+) projects. Uneven distribution of benefits among local communities plagues REDD+ projects around the world, with the nearest examples found in Central Kalimantan (Howson and Kindon 2015, Joshi *et al*. 2010). A major issue is that while some local people were financially rewarded, others lost their lands and livelihoods due to complex local dynamics, such as the absence of formal tenure, unequal access to knowledge, and relationship-based distribution of benefits. This is not a unique problem for REDD+, as conflicts between local stakeholders are also frequently reported in other development projects and compensation schemes (Lee *et al*. 2015).

In the case of the NCA, the broker will receive 30% of project revenues. Sharing of revenues, instead of profit, ensures the broker is financially rewarded regardless of how the project performs. To make matters worse, utilisation of the remaining 70% earmarked for restoration is at the discretion of the broker. This nullifies claims by signatories that the deal promotes 'economic development for people living in and around the forests' (Cannon 2022). Such a top-down approach, to some extent, shares similar characteristics with land grabbing by oil palm companies, which has negatively affected local communities in Sabah for decades (Majid Cooke 2012).

A comparable example of social equity infringements is the Rimba Raya Forest Carbon Project in Central Kalimantan, which was run by a foreign company based in Hong Kong (Indriatmoko *et al*. 2014). This for-profit carbon initiative reports to the investors, and not local stakeholders on whom the burden of forest protection rests. That they were not involved in any decision-making processes and will likely receive relatively few benefits from the scheme. As reported by Howson (2020), while the project trades forest carbon in cryptocurrency, which speeds profit-makings, local implementors 'remains uninformed' and to date, there is 'no plan to offer financial compensation to local people'.

Securing social equity remains a daunting requirement for any forest carbon project developer. Recent political turmoil across Malaysia further complicates efforts to address social equity concerns. For example, it is unlikely that the elected officials who created the NCA will remain in office (and thus held accountable) before the projects show any meaningful progress. This problem is not unique to Sabah; lack of accountability and consistency in long-term policies are perennial problem throughout Malaysia and elsewhere. To avoid some now familiar problems, Paladino and Fiske (2016) reviewed some useful lessons learned from the social aspects of carbon projects, which include the need to (i) secure the tenure of community forests; (ii) develop social safeguards or contracts; and (iii) better understand the social conditions of forestry governance before a forest carbon project is implemented.

Sovereignty

Governance challenges for forest carbon projects in Malaysia and other federations (*e.g*., Brazil and Indonesia) may arise from unresolved and often long-standing national-state political conflicts. Within Malaysia, states retain full jurisdiction over land-use matters and policies. Within the states, power is concentrated in the state government due to suspension of local council elections after the Indonesia-Malaysia confrontation in 1964 (Saravanamuttu 2016). A consequence is that powerful (in the context of land-use) state governments may implement land development projects without much local input and without negotiating with the federal government.

Due to conflicting state and federal powers, Malaysia may not be able to commit to any targets for mitigation outcomes from land use, land-use change and forest (LULUCF) in its Nationally Determined Contributions (NDCs). At the moment, the federal government seems to tacitly assume that all the states are obliged to contribute to the NDCs, but recent emergence of global markets for forest carbon credits has engendered concerns over this assumption. As it stands, states can initiate and approve forest carbon projects, bypassing the federal government, and sell the Mitigation Outcomes (MO) from LULUCF as carbon credits in global markets. These MOs will then become internationally transferred and not eligible to be counted towards Malaysia's NDCs (UNFCCC 2021).

The NCA in Sabah and the recent announcement by the Sarawak government that it will pursue carbon credits (Chiam 2022), have forced federal policymakers to 'open a can of worms'. Recently, the Federal Environmental and Water Minister reported to Parliament that 'the federal government was not informed, consulted, and involved by the Sabah state government' on the NCA's matter (Palansamy 2022). Politically, the NDC issue will likely involve difficult federal-state negotiations, especially with the two natural resource-rich East Malaysian states that recently have reinforced their demands for autonomy, with 'state nationalism' on the rise (Chin 2019).

A carbon emission trading system set up domestically to address federal-state discrepancies may be an option to address potential disputes in the future, but there are financial realities to be observed – domestic carbon credit prices may not be competitive given the size of Malaysia's economy. Any carbon pricing mechanism would have to be carefully crafted, perhaps with a combination of carbon taxes with carbon trading. However, there could be intense competition from global carbon markets, with the emerging international compliance markets in China and Singapore frequently cited as benchmarks in the region (Li *et al*. 2019; World Bank 2021; NCCS Singapore 2022). Ironically, entering global carbon markets risks the states' land sovereignty, at least if they enter into long-term deals like the NCA. Sadly, this problem is not new and well discussed using terms like 'green grabbing' and 'carbon colonialism' (Lyons and Westoby 2014; Astuti and McGregor 2017; Howson 2020).

Carbon sovereignty of the country and states of Malaysia thus remains a tricky issue to navigate for forest carbon developers. Nevertheless, there are no apparent legal impediments to state government engagement in voluntary forest carbon projects. In 2020, the federal government published a National Guidance on Forest Carbon Market (https://www.nrecc.gov.my/ms-my/pustakamedia/Penerbitan/National%20Guidance%20on%20Forest%20Carbon%20Market.pdf), which identifies the roles and functions of the various actors involved in forest carbon projects and ensures no double counting takes place. The failure of this document to detail important considerations for a successfully implemented forest carbon project is the principal motivation for our study. As development of a national carbon policy is in the offing, discussions on issues related to sovereignty via state-federal workshops should commence as soon as possible.

Complementarity

Investments pouring into nature-based projects to store carbon may trigger unwanted consequences for other ecosystem services. For example, focusing solely on high-carbon areas may risk displacing efforts to protect biodiversity (*e.g*., Budiharta *et al.* 2014), as a high-carbon area may have low biodiversity (Harrison and Paoli 2012). Although co-benefits can be more accurately detected with high resolution and locally validated data (Deere *et al*. 2018; Sarira *et al.* 2022), the carbon offset market boom does not guarantee the protection of other ecosystem services, if maximizing profits from carbon stock accumulation is the priority. In Kalimantan, offsetting biodiversity losses would cost 2.5-10 times more than restoring the carbon stock of all its peatlands (Budiharta *et al*. 2018).

Theoretically, to create a combination of mechanisms that avoids leakage, ecosystem services have to be measured, valued, and compared preferably in the same dimension – in the current setting of forest carbon projects, the monetary dimension. This objective is in line with the concept of 'inclusive wealth' proposed as a measure to quantitatively cover all these costs in one index (Managi and Kumar 2018). Some other studies also attempted to integrate provisioning services (*e.g.*, food, fiber, and cash crops), regulating services (*e.g*., the carbon cycle), and even cultural services like nature recreation on a monetary basis (Sumarga *et al*. 2015; Sumarga and Hein 2016). Admittedly, any attempts to measure overall sustainable development with a harmonised term will run into substitutability issues such as deciding on the value of biodiversity, which is highly subjective and changes over time.

Considering these drawbacks, paying for ecosystem service outcomes may be much more effective in ensuring the overall sustainability of forest carbon projects than a universal carbon pricing system, such as the model adopted by Rimba Collective that covers climate, biodiversity, and livelihoods (Lestari Capital 2022). Technically, multiple policy instruments, such as regulations and certification, would be needed to address the different externalities in carbon markets (Bataille *et al*. 2018). In the meantime, payment for ecosystem outcomes can be a useful avenue for state governments to finance forest protection. This is particularly important when put into a local and regional context to minimise conflicts between development and conservation (Venter *et al.* 2013).

Future perspectives

The increasingly popular notion of 'growing money on trees' masks complex realities underlying forest carbon projects in Malaysia and elsewhere. The recent dispute around the NCA in Sabah revealed five fundamental issues that cannot be ignored in the frenzy of buying and selling forest carbon credits. The first issue – transparency, is a chronic and long-standing challenge in Malaysia. Addressing it will require strong political will, especially at the subnational level, to make structural changes such as creating legal frameworks for strict analytical processes, monitoring, and FPIC requirements for forest carbon projects. The second issue – 'additionality', will likely remain a messy debate that can nevertheless be informed through use of appropriate predictive models to validate the benefits and co-benefits of a landscape with and without a forest carbon project.

The third issue – social equity, will remain difficult to resolve, but much can be learned from a decade's worth of 'social soundness' assessments of both exemplary and failed projects, especially from REDD+ projects with social safeguards (*e.g*., Poudyal *et al*. 2016). The fourth issue – sovereignty, may be addressed internally through negotiations and tools like domestic carbon trading and other incentives, while not side-stepping the 'carbon colonialism' issue. With development of a national guidance document by the Malaysian federal government, it is clear that state governments will remain the key stakeholders of forest carbon projects, at least for the near future. The fifth issue – complementarity, is increasingly being highlighted to recognise the co-benefits of carbon projects, as such information can help investors understand that 'all carbon is not created equal' and that they should seek forest carbon projects with high complementarity. Indeed, a report showed that nearly half of carbon credit suppliers claimed that co-benefits were a major influence on their buyers and that they engage in the forest carbon market primarily because of the beyond-carbon impact of their dollars (Goldstein 2016).

Despite Malaysia's three decades of experience with carbon projects, fundamental mishaps continue, as demonstrated by the NCA. Nevertheless, the state of Sabah is arguably still ahead of others in addressing all five issues through its commitment to developing a 'Jurisdictional Approach', which creates an official platform to align all stakeholders to work together on conservation and development goals within the state (Watts *et al*. 2019). Although this approach was initially developed for the oil palm sector, it naturally cuts across all land uses and covers all stakeholders. This approach creates a foundation for developing state-wide forest carbon projects. The Jurisdictional Approach may also fit into the 'cooperative approach' stipulated in Article 6.2, which facilitates jurisdictions in working with each other, as well as with the private sectors in developing forest carbon projects (UNFCCC 2021). It will still take a substantial effort to reach that stage, but adopting this approach seems to be the right direction for Malaysia to achieve its net-zero ambitions. Indeed, it is high time to stop 'missing the forest for the trees (and carbon)'.

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