

**Addressing Climate Change in Malaysia:  
A Critical Perspective on Carbon Pricing**

SAHABAT ALAM MALAYSIA

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**TWN**

Third World Network

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Published in 2023 by  
Third World Network Bhd (198701004592 (163262-P))  
131 Jalan Macalister  
10400 Penang  
Malaysia  
[www.twn.my](http://www.twn.my)

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Printed by  
Phoenix Printers Sdn Bhd (199001001670)  
6 Lebuh Gereja  
10200 Penang  
Malaysia

ISBN: 978-967-0747-50-7

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## **NOTE**

This is the edited text of a memorandum submitted by Sahabat Alam Malaysia (SAM, Friends of the Earth Malaysia) to the Malaysian Ministry of Natural Resources, Environment and Climate Change, Ministry of Economy, Ministry of Investment, Trade and Industry, and Ministry of Finance in August 2023. The memorandum was prepared by Hilary Kung, senior researcher with SAM and the Third World Network.

## Executive Summary

This memorandum presents a critical assessment of the carbon pricing policies that are currently being explored by the government of Malaysia from the perspective of climate justice. These policies include the voluntary carbon market (VCM), the emission trading scheme (ETS) and carbon tax.

The Malaysian government, just before the 2021 United Nations Climate Change Conference held in Glasgow, United Kingdom, announced its aspiration of going carbon-neutral as early as 2050. The government also announced that it will conduct a feasibility study on carbon pricing, such as in having a carbon tax and an ETS.

On the VCM, Bursa Malaysia, the Malaysian stock exchange, has just launched a VCM exchange on December 9, 2022. The government has also issued a “National Guidance on Voluntary Carbon Market Mechanisms”. Malaysian states like Sabah and Sarawak have already started exploring carbon trading. The Sarawak state government’s most recent amendments to its Land Code and Forests Ordinance open the door wide to the participation of corporations and the state government in the international voluntary carbon market. Forest carbon offset (FCO) is also one of the components under the Malaysia Forest Fund (MFF)’s REDD-Plus Finance Framework (RFF) which is currently being finalised.

Carbon markets have been widely touted as a climate solution to address emissions. Carbon market advocates claim that it is a cost-effective way to ramp up climate ambition and drive technological and behavioural innovation. Opponents argue that the carbon market and offsets are a false solution, especially when we need to rapidly cut emissions in a climate crisis.

Since the establishment of carbon trading in 1997 under the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC), there has been much evidence of human rights violations and “hot air” – when the carbon credits do not represent real emission reductions but are associated with “subprime carbon” and fraud – among the many other issues that surface with carbon markets. Many carbon market advocates have since worked on improving the standards and protocols to ensure the environmental integrity and credibility of carbon credits. However, as highlighted in this memorandum, there are still critical issues, including some unresolvable conceptual issues, with carbon markets.

One of the main unresolvable conceptual issues is that carbon offsets are not based on science. A carbon offset assumes that one tonne of carbon emitted from fossil fuels is the same as one tonne of carbon reduced from any source, most popularly the carbon stored in trees, plants and soils. However, scientists underscore that there is a fundamental difference between the carbon in trees, plants and soils and emissions from fossil fuels. Temporary carbon uptake in the natural ecosystem operates on a time frame of hours (e.g., photosynthesis) and days to centuries. In contrast, fossil carbon is effectively permanent storage. Therefore, temporary carbon uptake in natural ecosystems (fast cycle) cannot “offset” permanent fossil emissions (slow cycle). Burning fossil fuels releases carbon from permanent storage into the atmosphere, leading to the increase of total carbon in land, ocean, and atmosphere.

The carbon dioxide that is emitted into the atmosphere stays there for between 300 and 1,000 years. As carbon dioxide accumulates, temperatures will rise and this contributes to the enhanced greenhouse effect. To stop warming, we have to stop releasing carbon dioxide into the atmosphere. However, the practice of offsetting allows companies to continue emitting. This is especially contentious when forest carbon offsets are used to justify the continued expansion of the fossil fuel industry. Forests are not able to absorb the massive amount of additional carbon in the atmosphere coming from the fossil fuel industry.

Second, given the limited carbon budget and from a climate justice perspective, there is no room for carbon offsets, especially not for the developed countries or corporates from the developed world who have overused their carbon budget. The climate debt of developed countries cannot be discharged through carbon trading or offsets; instead, it should be discharged through provision of financial resources as part of the legal obligation of developed countries under the UNFCCC and in line with the equity principle of common but differentiated responsibilities (CBDR). Trading in the carbon market must not be equated to the provision of climate finance by developed countries to developing countries.

Third, carbon markets and the “net zero” concept present a false solution to the climate crisis. A 2022 “Net Zero Stocktake” report finds that nearly 40% of all Forbes 2000 companies with net-zero targets intend to rely on buying carbon offsets. The report also finds that a vast majority of the net-zero pledges lack clarity, especially on the degree to which offsets will be used to meet the net-zero targets. Further, 82% claimed to have achieved net zero by relying on offsetting. Not only is there a lack of transparency surrounding offsetting practices, but the assumption that carbon offsets can balance out continuing emissions is also scientifically flawed. Operating on that assumption will lead to an increase, not a decrease, in cumulative emissions. Some claim that carbon offsets should be allowed to compensate for

unavoidable or hard-to-abate and residual emissions, but the question lies in how and who gets to define what an unavoidable/residual emission is.

Fourth, forest carbon offsets risk bringing more harm than good. The Clean Development Mechanism (CDM) and other international carbon markets have been tainted with many issues and problems including the impacts on indigenous peoples and local communities, who have contributed the least to climate change. Already, there are numerous legal cases involving challenges brought by indigenous peoples against various state governments relating to projects or concessions being approved over what are claimed as indigenous peoples' lands and forests. When state governments refuse to recognise the rights of indigenous peoples to their lands and forests in the first place, even having safeguards in FCO standards will not guarantee their rights.

Fifth, carbon markets also open up the opportunity for other false climate solutions such as geoengineering and carbon capture and storage (CCS) or carbon capture, utilisation and storage (CCUS), which are unproven at scale, dangerous and risky. According to a new report by Grant Hauber of the Institute for Energy Economics and Financial Analysis, the two CCS projects in Norway which are often cited as proof of the technology's viability were the world's most thoroughly studied pieces of earth but still subsurface unknowns can arise at any point and present material ongoing risks that may ultimately negate some or all of the benefits it seeks to create.

What does it all add up to then? The issues highlighted above will have financial implications, including opening the floodgates for subprime carbon, carbon bubbles, financial stability risks and carbon trading crime. Subprime carbon can come from projects that claim to be "additional" based on questionable assumptions and baselines. Additionality is essential in carbon offset projects because if their associated emission reductions are not additional, then buying offset credits in lieu of reducing one's own emissions will only exacerbate climate change.

The current policy responses to climate change, especially the carbon market, carry significant financial stability risks that need to be looked into. These risks have not materialised so far due to the limited size and lack of real functioning of carbon markets in the past, but this is fast changing. The Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimates that demand for carbon credits could increase by a factor of 15 or more by 2030 and by a factor of up to 100 by 2050. Overall, the TSVCM expects the market for carbon credits could be worth upward of \$50 billion in 2030. Clearly, there is an increase in scale and scope of the financial stability risks associated with carbon markets today. The 2007-2008 financial crisis, which



was triggered by subprime mortgages in the US financial sector, should provide a cautionary tale for any large-scale carbon trading programme, as forewarned by the 2009 “Subprime Carbon?” report by Friends of the Earth US. Once carbon markets aggregate carbon credits that share similar traits and fundamentals, it could be as difficult, if not more, to analyse the quality of the numerous underlying carbon offset projects – such as their additionality and permanence – as it was to analyse US mortgages.

Experts have warned that the securitisation of carbon offset projects, by aggregating a very large number of projects of mixed types and origins using complex financial structures, would magnify the risks of adverse selection, disincentivise due diligence and foster subprime carbon. A market controlled by speculators may push up prices, create a bubble and lead to the development of subprime assets.

The International Criminal Police Organization (INTERPOL) recognises that the intangible nature of carbon makes carbon markets exceptionally vulnerable to criminal activity. It has warned that if financial instruments related to carbon trading become too complex, the world’s carbon markets could trigger a financial crisis on par with the 2008 event.

Nevertheless, emission trading schemes are proliferating around the world. This memorandum draws lessons from the operation of ETSs abroad, including in the European Union and China, in relation to their attempts to resolve the underlying conceptual issues surrounding carbon markets.

The fundamental concept of the ETS or cap-and-trade is based on the Coase Theorem, which suggests that cap-and-trade schemes will work more efficiently than government regulation in addressing carbon emissions on the assumptions that the transaction cost (also known as administration cost) is low and property rights (i.e., rights to pollute, rights to clean air, etc) are well-defined. In other words, for carbon markets to work, i.e., to spur technological innovation to reduce emissions in a more cost-effective manner, the following unrealistic assumptions need to hold: (a) perfect information; (b) low or zero transaction cost; and (c) perfect competition.

In a world of perfect information, the government knows exactly, in economic terms, the social marginal cost of emissions, the avoided cost of abatement, etc. With all this information, the government will then set the “right” cap or issue the “right” number of permits/allowances to yield the optimal outcome that reflects the full social marginal cost of emissions. In practice, however, the social cost of carbon dioxide (SC-CO<sub>2</sub>) is an estimate, in monetary terms, of the net impacts incurred by society from a 1 metric ton increase in carbon dioxide emissions in a given year. It

continues to be a challenge or even impossible to capture the full and real social cost of climate change, let alone the level of carbon pricing to reflect this cost.

As observed in the EU's ETS, the need to “learn by doing” and the deployment of different legislation and tools between 2005 and 2020 to address carbon pricing issues have demonstrated that perfect information, perfect competition and zero transaction cost will never exist in the real world. In fact, a study in 2013 estimated that during the 2005-2011 period, emission reductions in the EU ETS-covered sectors could be explained almost entirely by a combination of factors *not* related to the carbon market. “Learning by doing” will be an inevitable path for the construction and development of a national ETS. The question that we need to ask is whether we have the luxury of time to depend on “learning by doing” for the ETS.

The intangible nature of carbon, the transfer of large quantities almost instantly and inelastic supply make carbon markets exceptionally vulnerable to price volatility and criminal activity, as mentioned above, which presents a complex set of governance challenges. An ETS is also arguably more exposed to lobbying due to the complexity of this policy approach and its methodology. For example, the points of influence from stakeholders include the design of an ETS to increase flexibility, maximise rents, and weaken compliance oversight and penalty rules.

Given the many problems associated with the CDM and other international carbon markets, most ETSs restrict the use of international offsets or focus on domestic projects rather than international ones. The attempt to fix the fundamentally flawed carbon market concept has also led to a set of complex rules under Article 6 of the Paris Agreement, again underlining the governance challenges around the carbon market regime. There will also be risks of overselling and hence the risk that developing countries will not meet their national climate targets.

The carbon tax is not a better alternative to carbon trading as a means of cutting emissions. Both cap-and-trade and the carbon tax are market-based policies with the same objective to achieve an efficient level of emission reduction at a minimum cost. Cap-and-trade regulates the quantity of carbon emission, while the carbon tax is a policy approach that regulates the prices. They also share a few similarities such as encouraging technological innovation, generating revenues (though in different ways) and facing difficulties in setting the “right” tax rate or “right” cap.

Carbon tax advocates often argue that a tax might someday make fossil fuel use so expensive as to move the markets towards renewable energy; or that in any case, even if a tax cannot achieve this, it will surely be better than nothing, or at least better than other market-based mechanisms like carbon trading.

The key to a carbon tax is to control the prices of carbon emission and let the market determine the quantity of emission reduction. However, in practice, setting tax rates is a political process. This is seen in Chile where the government did not utilise the recommended social cost of carbon (SCC) to determine its tax rate due to lack of agreement and instead relied on global carbon pricing as a proxy, which resulted in too low a tax that fell short of the OECD's best practice recommendation to optimise the effect of a carbon tax.

In Sweden (one of the first countries in the world to introduce a carbon tax back in 1991), despite its high rate, the carbon tax has not achieved the targeted emissions reduction due to the exemption of major polluters such as steel manufacturers from the tax to protect their international competitiveness. Developed countries that implement a domestic carbon tax may also seek to protect the international competitiveness of their domestic industries by introducing a carbon border adjustment mechanism (CBAM), a mechanism to equalise the tax burden on imported and local goods. This too is a problematic approach.

Malaysia should reject the unilateral imposition of a CBAM instead of using it to justify domestic carbon pricing policy. CBAMs have faced strong scrutiny, including opposition from other developing countries, and such measures are arguably inconsistent with the principle of CBDR and Article 3.5 of the UNFCCC as well as World Trade Organization (WTO) rules. A 2021 report by the United Nations Conference on Trade and Development modelling the potential effects of a CBAM in the EU concludes that the impact of the CBAM on global emission reduction would be limited. It also predicts that the introduction of a CBAM would result in declines in exports in developing countries in favour of developed countries, which tend to have less carbon-intensive production processes.

Real solutions should go beyond carbon markets and carbon taxes. There is a broad range of other policy instruments that can be used to support the implementation and achievement of countries' climate change mitigation goals. Given the flaws in carbon markets and carbon taxes, the government should optimise the use of regulatory policies that set product, performance and technology standards for emission reduction and not rush into setting up carbon trading, especially not the voluntary carbon market.

Many regard the US sulfur dioxide (SO<sub>2</sub>) trading programme as a success story which achieved 29% reduction in SO<sub>2</sub> emissions in the 1990-2000 period. However, when this result is compared with the 61% reduction achieved in the EU where Germany managed to cut public power plant sulphur emissions by 90% from 1982 to 1998, mainly relying on traditional regulations, it challenges the mainstream

narrative about the effectiveness of carbon pricing policies. As such, the Malaysian government should take a step back and explore the full potential of traditional regulations or command-and-control policies in its overall climate strategies and in ensuring a just and equitable transition towards environmental sustainability.

Recognising the importance of forest conservation for Malaysia and evidence which shows that indigenous peoples and local communities with secure land rights vastly outperform both governments and private landholders in preventing deforestation, conserving biodiversity and producing food sustainably, this memorandum outlines three main recommendations on real solutions through strengthening the rights of indigenous peoples and supporting community-based approaches. Malaysia should also optimise and diversify the funding sources for conservation efforts through international climate funds and other non-market approaches under Article 6.8 of the Paris Agreement.

Many local communities and indigenous peoples in Malaysia have been undertaking measures that are more climate-resilient, such as conserving biodiversity and sustainably using natural resources. Unlike the monoculture plantations that can be easily wiped out by a single pest or disease, the biodiverse farming system known as agroecology and agroforestry initiatives being practised by many communities are more climate-resilient and have both climate change mitigation and adaptation attributes.

Therefore, community-driven solutions have to be mainstreamed and supported in climate policies, instead of corporate-driven false solutions – such as “climate-smart agriculture” or “carbon offset” in the name of achieving “net zero” emission reductions – that displace indigenous peoples and local communities and undermine their rights to land and natural resources.

The goal of this memorandum is to add a critical perspective to the current carbon pricing policy discourse and urge policymakers to take a step back to reconsider a full range of other regulatory measures and policies, not just the carbon market and the carbon tax. The memorandum hopes to steer the policy direction towards real solutions in raising climate ambition in Malaysia in mitigation, adaptation and in addressing climate-change-induced loss and damage.



# 1

## Introduction

THE planet's average surface temperature has already increased by 1.2°C since pre-industrial times, and this is caused by human activities that release carbon dioxide and other greenhouse gases (GHGs) into the atmosphere.

The Paris Agreement, which was ratified by Malaysia, calls for the world to limit the global average temperature rise to well below 2°C above pre-industrial levels, and to aim for a safer limit of 1.5°C. We are set to pass 1.5°C and 2°C global warming in the 21st century unless deep reductions in carbon dioxide and other greenhouse gas emissions occur in the coming decades.

The latest Intergovernmental Panel on Climate Change (IPCC) report has highlighted that social justice and equity are critical for such urgent actions. However, some climate actions do not help reduce carbon emissions; rather, they allow polluters to continue polluting and often violate the rights of indigenous peoples and local communities. Some responses to climate change even result in new impacts and risks.

It is therefore important to ask the right questions when evaluating climate change policies and to be able to differentiate between real solutions<sup>1</sup> and false solutions.<sup>2</sup>

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<sup>1</sup> Real solutions genuinely reduce greenhouse gas emissions, adapt to the impacts of climate change and address loss and damage caused by climate change while upholding the rights of communities, justice and equity in the process.

<sup>2</sup> False solutions, no matter how they are packaged, serve to only perpetuate the climate crisis while benefiting big polluters, and often violate the rights of indigenous peoples and local communities.

The objective of this memorandum is to present a critical assessment of carbon pricing policies from the perspective of climate justice.<sup>3</sup> These policies include the voluntary carbon market (VCM), emission trading scheme (ETS), carbon tax or even a hybrid policy approach as is currently being explored by the government of Malaysia.

Both carbon market and carbon tax approaches are market-based policy strategies that seek to use economic incentives to change the behaviour of the targeted actors to reduce carbon emissions. Market-based climate policies include subsidy approaches (such as removing fossil fuel subsidies or providing subsidies to renewable energies or any mitigation measures), tax exemptions, feed-in tariffs, and also carbon pricing, the latter being the focus of this memorandum.

Fundamentally, there are two types of regulated carbon pricing policies: (1) policies that regulate quantity: cap-and-trade or ETS; (2) policies that regulate prices: carbon tax. The voluntary carbon market is unregulated (without a cap).

The memorandum will draw on experience and lessons in carbon pricing abroad to assess the pitfalls of this approach, and ascertain policies and regulations required to embark on real solutions to address climate change.

The ultimate goal of the memorandum is to add a critical perspective to the current carbon pricing policy discourse and urge policymakers to take a step back to reconsider a full range of other regulatory measures and policies, not just the carbon market and carbon tax options. The memorandum hopes to steer the policy direction towards real solutions in raising climate ambition in mitigation, adaptation, and in addressing loss and damage caused by climate change in Malaysia.

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<sup>3</sup> The term “climate justice“, while used in different ways in different contexts by different communities, generally includes three principles: distributive justice, which refers to the allocation of burdens and benefits among individuals, nations and generations; procedural justice, which refers to who decides and participates in decision-making; and recognition, which entails basic respect and robust engagement with and fair consideration of diverse cultures and perspectives. Source: IPCC Working Group II: Impacts, Adaptation and Vulnerability: Summary for Policymakers (February 27, 2022).

# 2

## Background and Context: What We Know About the Carbon Pricing Plan in Malaysia

THE Malaysian government, just before the 2021 United Nations Climate Change Conference held in Glasgow, United Kingdom, announced its aspiration of going carbon-neutral as early as 2050.

In December 2021, the then Ministry of Environment and Water (KASA) announced that a Domestic Emission Trading Scheme (DETS) would be implemented in three phases by the end of 2022.<sup>4</sup> It was understood that the first phase would involve a voluntary carbon market before transitioning to a full Domestic Emission Trading Scheme.<sup>5</sup> It was also announced that a feasibility study would be conducted on carbon pricing, such as in having a carbon tax and an ETS, and that the study would recommend the most suitable carbon taxation system to incentivise the right behavioural changes as well as introduce a platform for carbon trading.<sup>6</sup>

Bursa Malaysia, the Malaysian stock exchange, launched the voluntary carbon market exchange on December 9, 2022. The VCM is known as Bursa's Carbon Exchange (BCX), which is an initiative under the purview of the Ministry of Finance (MoF) and KASA, with Bursa Malaysia mandated to implement the

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<sup>4</sup> *The Malaysian Reserve*, "Tuan Ibrahim: Domestic Carbon Trading to Begin End-2022," December 2, 2021, <https://themalaysianreserve.com/2021/12/02/tuan-ibrahim-domestic-carbon-trading-to-begin-end-2022/>.

<sup>5</sup> *The Malaysian Reserve*, op. cit.

<sup>6</sup> Economic Planning Unit, Prime Minister's Department, Malaysia, *Twelfth Malaysia Plan, 2021-2025*, July 9, 2021, <https://rmke12.epu.gov.my/en>.



exchange.<sup>7</sup> It is a spot exchange that facilitates the trading of carbon credits via standardised carbon contracts.<sup>8</sup>

KASA has also issued a “National Guidance on Voluntary Carbon Market Mechanisms” to guide any entity planning to engage in VCM mechanisms or international carbon-market-related activities.<sup>9</sup> Individual Malaysian states like Sabah and Sarawak have already started exploring carbon trading and how they can benefit from the large amount of forest carbon in their territories.<sup>10</sup> The Sarawak state government’s most recent amendments to its Land Code and its Forestry Enactment open the door wide to the participation of corporations and the state government in the international voluntary carbon market.

Sahabat Alam Malaysia (SAM) is also made to understand that Malaysia’s national REDD-Plus Finance Framework (RFF) will include forest carbon offset as one of the components.<sup>11</sup> (“REDD” refers to Reducing Emissions from Deforestation and forest Degradation and the “Plus” refers to the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.)

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<sup>7</sup> Wei-nee Chen, “Bursa Malaysia Voluntary Carbon Market Exchange,” [https://www.bursamalaysia.com/sites/5bb54be15f36ca0af339077a/content\\_entry617bfd2839fba20f54a06574/632bbd555b711a1976102da6/files/Bursa\\_Malaysia\\_VCM\\_Exchange.pdf?1664349271](https://www.bursamalaysia.com/sites/5bb54be15f36ca0af339077a/content_entry617bfd2839fba20f54a06574/632bbd555b711a1976102da6/files/Bursa_Malaysia_VCM_Exchange.pdf?1664349271).

<sup>8</sup> “Bursa Carbon Exchange: Accelerating A Net Zero Future,” Bursa Malaysia, accessed January 6, 2023, <https://bcx.bursamalaysia.com/web>.

<sup>9</sup> Ministry of Environment and Water, Malaysia, “National Guidance on Voluntary Carbon Market Mechanisms,” n.d., <https://www.kasa.gov.my/resources/alam-sekitar/National-Guidance-on-Voluntary-Carbon-Market-KASA.pdf>.

<sup>10</sup> See a report on the controversial Sabah Nature Conservation Agreement here: <https://www.channelnewsasia.com/asia/sabah-nature-conservation-agreement-carbon-trading-hoch-standard-singapore-2562841>; and Sarawak’s carbon trading plan reported here: <https://www.theborneopost.com/2022/09/14/sarawak-targets-2023-to-start-emissions-trading-as-new-source-of-revenue-baram-to-benefit-most/>.

<sup>11</sup> The Federal Constitution of Malaysia stipulates that matters relating to land and forests are under the jurisdiction of state governments. This leaves the federal government with a highly limited role in the decision-making process on land and forests in Malaysia. The federal-state jurisdictional division has been identified as a key challenge when it comes to biodiversity conservation in Malaysia. Hence, the establishment of the Malaysia Forest Fund (MFF)’s REDD Plus mechanism (<https://myforestfund.com.my/>) is claimed as a means of providing incentives for the state governments to conserve forests.

In light of these developments, this memorandum intends to present a critical assessment of these market-based policy options currently being explored and planned by the government of Malaysia.

# 3

## Why Carbon Markets Will Not Work

CARBON markets have been widely touted as a climate solution to address emissions. Carbon market advocates claim that it is a cost-effective way to ramp up climate ambition. Putting a price on carbon is assumed to drive technological and behavioural innovation that will limit climate change. Opponents argue that the carbon market and offsets are a false solution, especially when we need to rapidly cut emissions.

Since the establishment of carbon trading in 1997 under the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC), there has been much evidence of human rights violations and “hot air” (i.e., when the carbon credits do not represent real emission reductions but are associated with “subprime carbon” and fraud), among the many other issues that surface with carbon markets. Carbon markets have been proven to lead to fraud and speculation<sup>12</sup> and have not substantially reduced emissions in the past.<sup>13</sup>

While many carbon market advocates have since worked on improving the standards and protocols to ensure the environmental integrity and credibility of the carbon credits, climate justice groups continue to fundamentally reject carbon markets and offsets, calling them a false solution to climate change.

This chapter presents a list of critical issues, including those which are unresolvable, within the existing carbon market regime.

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<sup>12</sup> International Criminal Police Organization (INTERPOL), “Guide to Carbon Trading Crime,” June 2013, <https://www.interpol.int/content/download/5172/file/Guide%20to%20Carbon%20Trading%20Crime.pdf>.

<sup>13</sup> Öko Institut, “How Additional Is the Clean Development Mechanism: Analysis of the Application of Current Tools and Proposed Alternatives,” March 2016, [https://ec.europa.eu/clima/system/files/2017-04/clean\\_dev\\_mechanism\\_en.pdf](https://ec.europa.eu/clima/system/files/2017-04/clean_dev_mechanism_en.pdf).

### 3.1 Unresolvable conceptual issues with carbon markets

This memorandum notes the differences between a voluntary carbon market and a compliance market (cap-and-trade or ETS). Some compliance markets accept carbon offsets while all voluntary markets allow the buying and selling of carbon offsets.<sup>14</sup> A carbon offset is a reduction or removal of carbon emissions made to compensate for emissions made somewhere else. The discussion in this section challenges the fundamental concept of carbon markets and offsets and hence does not necessarily distinguish between the voluntary and compliance markets.

#### 3.1.1 Carbon offsets are not based on science

A carbon offset assumes that one tonne of carbon emitted from fossil fuels is the same as one tonne of carbon reduced from any source, most popularly the carbon stored in trees, plants and soils.<sup>15</sup> For example, a polluting company can pay a lot of money to preserve an X area of forest and claim that this will help absorb the carbon emissions caused by its business operations. However, scientists underscore that there is a fundamental difference between the carbon in trees, plants and soils and emissions from fossil fuels.<sup>16</sup>

Temporary carbon uptake in the natural ecosystem operates on a time frame of hours (e.g., photosynthesis) and days to centuries.<sup>17</sup> For example, soils may store carbon until the field is ploughed or drought or flooding causes the soils to become degraded; forests may store carbon until insect-damage, drought, fire, or any combination of those impacts causes degradation or loss.<sup>18</sup> In contrast, fossil carbon is effectively permanent storage. Therefore, temporary carbon uptake in natural ecosystems (fast cycle) cannot “offset”

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<sup>14</sup> Doreen Stabinsky, “Chasing Carbon Unicorns: The Deception of Carbon Markets and ‘Net Zero’,” ed. Adam Bradbury (Friends of the Earth International, February 22, 2021), <https://www.foei.org/resources/publications/chasing-carbon-unicorns-carbon-markets-net-zero-report>.

<sup>15</sup> Wim Carton, Jens Friis Lund, and Kate Dooley, “Undoing Equivalence: Rethinking Carbon Accounting for Just Carbon Removal,” *Frontiers in Climate* 3 (April 16, 2021): 664130, <https://doi.org/10.3389/fclim.2021.664130>.

<sup>16</sup> Carton, Lund, and Dooley, op. cit.

<sup>17</sup> Stabinsky, “Chasing Carbon Unicorns,” op. cit.

<sup>18</sup> Doreen Stabinsky, “‘Nature-Based Solutions’ (NbS) and Claims about Their Mitigation Potential” (Third World Network, October 2021), [https://www.twon.my/title2/briefing\\_papers/twn/NbS%20mitigation%20TWNBP%20Oct%202021%20Stabinsky.pdf](https://www.twon.my/title2/briefing_papers/twn/NbS%20mitigation%20TWNBP%20Oct%202021%20Stabinsky.pdf).

permanent fossil emissions (slow cycle). Burning fossil fuels releases carbon from permanent storage into the atmosphere, leading to the increase of total carbon in land, ocean and atmosphere.<sup>19</sup>

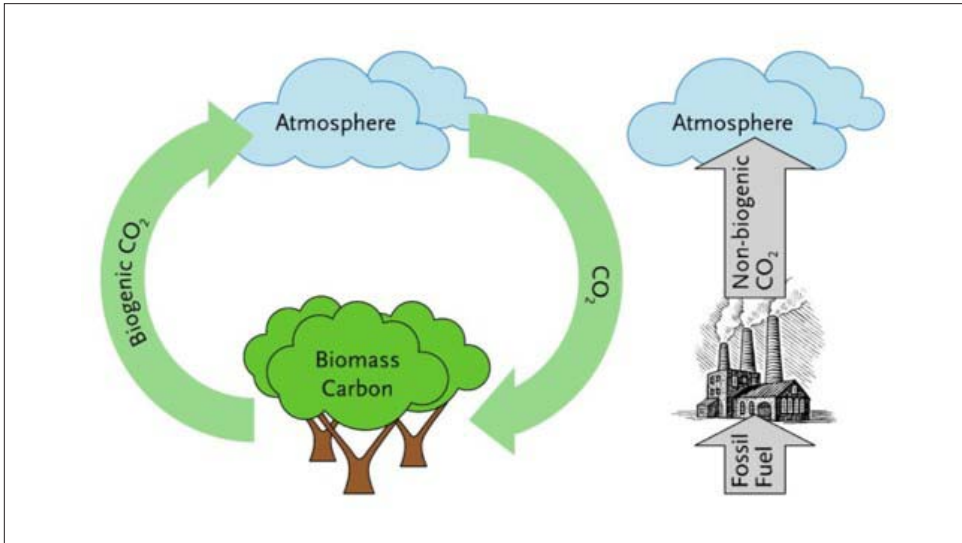


Figure 1: Biomass carbon vs fossil carbon (Source: IEA Bioenergy, <https://www.ieabioenergy.com/iea-publications/faq/woodybiomass/biogenic-co2/>)

This is especially contentious when forest carbon offsets are used to justify the continued expansion and pollution of the fossil fuel industry. Forests are not able to absorb the massive amount of additional carbon in the atmosphere coming from the fossil fuel industry.

There are currently very few ways to remove carbon from the atmosphere. As we are aware, the possibilities are found in nature – in the sequestration potential of trees, soils, wetlands and grasslands. However, the harnessing of this potential can usually lead to land grabbing and assaults on human rights, including the rights and livelihoods of indigenous peoples and local communities. Such adverse impacts will only increase as industries seek to further acquire natural ecosystems to soak up their carbon pollution.

<sup>19</sup> Carton, Lund, and Dooley, op. cit.

### 3.1.2 Limited carbon budget

With the limited carbon budget left<sup>20</sup> to constrain temperature rise, there is no room for carbon offsets.

According to a study co-authored by experts representing 70 academic and research institutions, the remaining carbon budget in 2021 with a 50% likelihood of limiting global warming to 1.5°C, 1.7°C and 2°C has dramatically shrunk to 420 gigatonnes of carbon dioxide (GtCO<sub>2</sub>), 770 GtCO<sub>2</sub> and 1,270 GtCO<sub>2</sub> respectively.<sup>21</sup> To illustrate the severity of this situation, this is equivalent to having only 11, 20 and 32 years from the beginning of 2022 of carbon space left (assuming 2021 emissions levels).<sup>22</sup>

The IPCC's 6th Assessment Report (AR6) shows that the world can emit only about 500 GtCO<sub>2</sub> starting January 1, 2020, for a 50% chance of limiting warming to 1.5°C; the budget will need to come down to 400 GtCO<sub>2</sub> for a 67% chance of meeting the 1.5°C goal.<sup>23</sup> At the current global emission rate, the carbon budget will be exhausted in 11-12 years!

It is also important to consider the historical situation when it comes to the carbon budget. The carbon dioxide that is emitted into the atmosphere stays there for between 300 and 1,000 years.<sup>24</sup> As carbon dioxide accumulates, temperatures will rise and this contributes to the enhanced greenhouse effect. To stop warming, we have to stop releasing carbon dioxide into the atmosphere. However, the practice of offsetting allows companies to continue emitting.

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<sup>20</sup> The carbon budget refers to the cumulative amount of carbon dioxide (CO<sub>2</sub>) emissions allowed in the atmosphere over a period of time for the world to keep within a certain temperature threshold (<https://carbontracker.org/carbon-budgets-explained/>).

<sup>21</sup> Pierre Friedlingstein et al., "Global Carbon Budget 2021," *Earth System Science Data* 14, no. 4 (April 26, 2022): 1917-2005, <https://doi.org/10.5194/essd-14-1917-2022>.

<sup>22</sup> Friedlingstein et al., op. cit.

<sup>23</sup> Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis*, accessed October 1, 2021, <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/>.

<sup>24</sup> Alan Buis, "The atmosphere: Getting a handle on carbon dioxide" (NASA Global Climate Change: Vital Signs of the Planet, October 9, 2019), <https://climate.nasa.gov/news/2915/the-atmosphere-getting-a-handle-on-carbon-dioxide/>.

To go a step further, the Third World Network conducted a study on the allocation of carbon budget for developed and developing countries based on proportion of population from 1850 (the start of industrialisation) to 2008 (year of study), on the basis of the equity principle and fair shares in the carbon budget.<sup>25</sup> This study finds that the fair share of emissions for developed countries was 310 Gt, but they exceeded this by 568 Gt, overusing 183% above the fair proportional share.<sup>26</sup> In other words, the carbon debt<sup>27</sup> of Annex

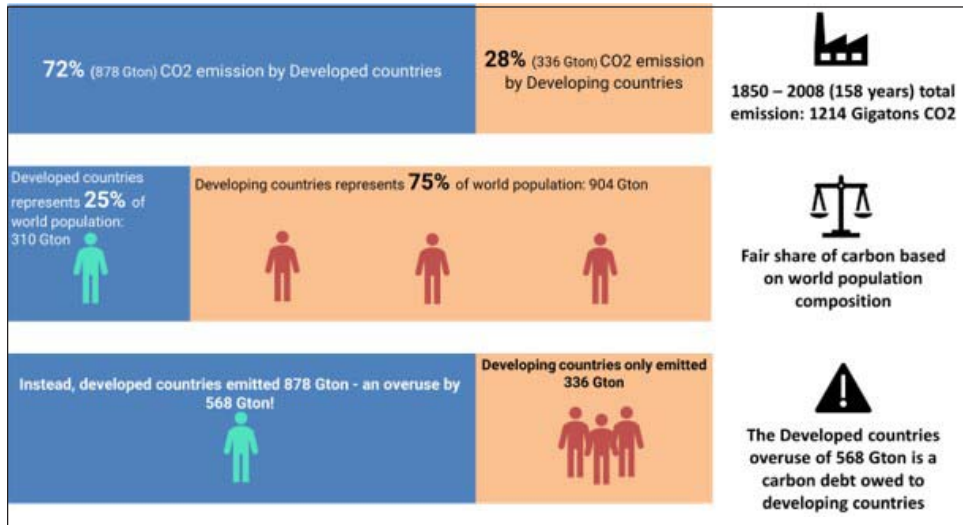


Figure 2: Fair carbon shares and actual emissions of CO<sub>2</sub>, 1850-2008 (Source: Martin Khor, 2020; illustrated by Evelyn Teh). Cumulative global emissions have totalled about 1,214 GtCO<sub>2</sub> in 1850-2008, and out of this total, Annex I countries (i.e., developed countries) accounted for 878 GtCO<sub>2</sub> or 72% of the total carbon budget. Given their share of world population was about 25% in this period, their fair share was supposed to be only 310 GtCO<sub>2</sub>. Hence, they have essentially overused 568 GtCO<sub>2</sub>. Meanwhile, the non-Annex I countries accounted for 336 GtCO<sub>2</sub> or 28% of the total carbon budget. Their fair share was 904 GtCO<sub>2</sub> and under-use was 568 GtCO<sub>2</sub>.

<sup>25</sup> Martin Khor, *The Equitable Sharing of Atmospheric and Development Space: Some Critical Aspects*, TWN Climate Change Series 4 (Penang, Malaysia: Third World Network, 2020), <https://www.twn.my/title2/climate/series/cc04.pdf>.

<sup>26</sup> Khor, op. cit.

<sup>27</sup> According to Khor (op. cit.), the carbon debt refers to the amount by which a country's cumulative emissions exceeded what its cumulative fair share of emissions (based on its population) should have been.

I countries<sup>28</sup> was 568 GtCO<sub>2</sub> for the period 1850-2008 (Figure 2).<sup>29</sup> This trend continues today and based on the Climate Equity Monitor, the carbon debt that Annex I countries owe to the world until 2019 stands at 1,025 GtCO<sub>2</sub>eq.<sup>30</sup>

Given the limited carbon budget, there is no room for carbon offsets, especially not for the developed countries or corporates from the developed world who have overused their carbon budget. The climate debt of developed countries cannot be discharged through carbon trading or offsets.

Climate justice advocates have been calling for developed countries with historical responsibilities to take the lead in emission reductions and not offset their excessive contemporary and future emissions through dubious carbon offset projects in developing countries.

In fact, according to the economist Nicholas Stern, as quoted by Khor (2020), “If the allocation of rights to emit in any given year took greater account both of history and of equity in [carbon] stocks rather than flows, then rich countries would have rights to emit which were lower than 2 tonnes per capita (possibly even negative).”<sup>31</sup>

The climate debt of developed countries should be discharged through provision of financial resources as part of the legal obligation of developed countries under the UNFCCC and in line with the principle of common but differentiated responsibilities (CBDR),<sup>32</sup> not via carbon markets and offsets. The revenue from the carbon market cannot be regarded as the provision of climate finance by developed countries to developing countries as the payment is for the carbon credits bought from the latter which are counted towards the emissions of developed countries.

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<sup>28</sup> Annex I Parties to the United Nations Framework Convention on Climate Change include the industrialised countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States.

<sup>29</sup> Khor, op. cit.

<sup>30</sup> Climate Equity Monitor, “Cumulative and Historical Emissions,” accessed December 19, 2022, <https://climateequitymonitor.in/>.

<sup>31</sup> Khor, op. cit.

<sup>32</sup> Khor, op. cit.



### 3.2 Carbon markets and net zero are a false solution to the climate crisis

Lately, countries and corporations have been pledging “net zero” commitments in response to the urgent call for climate action. Many actors assume that they can achieve this balance by buying carbon offsets from the carbon markets. This section discusses why carbon markets and net zero are a false solution to the climate crisis.

First, the “net zero by 2050” goal mentioned in the IPCC Special Report on Global Warming of 1.5°C is a global aspiration and not a country-wise or entity-based aim. Proponents of net-zero commitments point to the language in the Paris Agreement about the “balance between emissions and removals” but this again is at a global level.<sup>33</sup> They also rely on the IPCC’s increasing

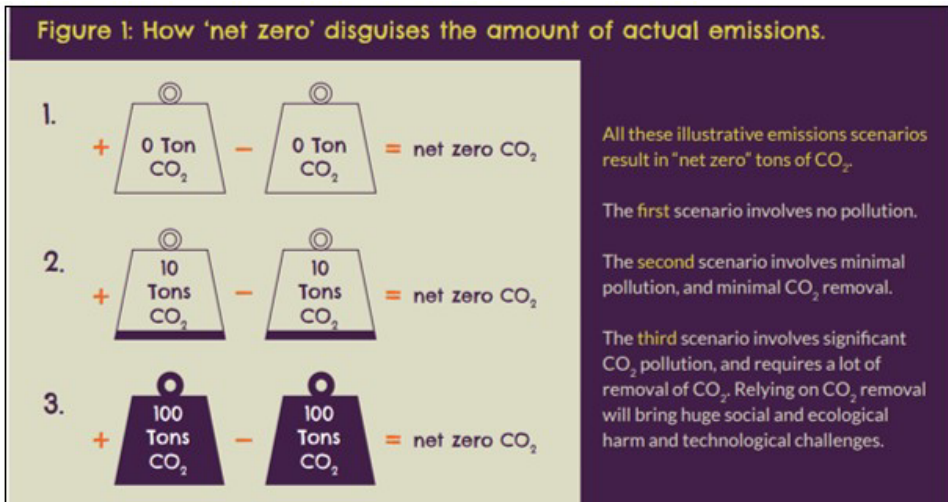


Figure 3: “Net zero” does not mean “zero” (Source: “Not zero: How ‘net zero’ targets disguise climate inaction,” October 2020, [https://demandclimatejustice.org/wp-content/uploads/2020/10/NOT\\_ZERO\\_How\\_net\\_zero\\_targets\\_disguise\\_climate\\_inaction\\_FINAL.pdf](https://demandclimatejustice.org/wp-content/uploads/2020/10/NOT_ZERO_How_net_zero_targets_disguise_climate_inaction_FINAL.pdf))

<sup>33</sup> Article 4.1 of the Paris Agreement reads: “In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.”

use of net-zero language in its publications to justify net-zero targets. But this ignores the reality that net zero was never meant to delay emission reductions.

Instead of treating the net-zero pathway as a collective global net-zero scenario, it is now popularly interpreted as net-zero pledges by individual nations, corporations or any other entity. These piecemeal net-zero pledges just do not add up to the required global emissions cut as stated by the IPCC.

A 2022 “Net Zero Stocktake” report finds that nearly 40% of all Forbes 2000 companies with net-zero targets intend to rely on buying carbon offsets.<sup>34</sup> The report also finds that a vast majority of the pledges lack clarity, especially on the degree to which offsets will be used to meet their net-zero targets.<sup>35</sup> Further, 23 out of 28 companies (82%) claimed to have achieved net zero by relying on offsetting, while the use of offsetting by the remaining five was unclear.<sup>36</sup> However, apart from the integrity problems posed by offsetting practices, the assumption that carbon offsets can balance out continuing emissions is itself erroneous, as discussed in Section 3.1.1. Operating on that assumption will lead to an increase, not a decrease, in cumulative emissions.<sup>37</sup>

Another report finds that the lack of detail of these net-zero pledges represents corporate lip service with no clear pathway, constituting a false solution to the climate crisis.<sup>38</sup> This report assesses the net-zero pledges by large corporations and finds that many of the corporations have expansion plans to increase emissions although they have a net-zero commitment.<sup>39</sup>

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<sup>34</sup> Frederic Hans et al., “Net Zero Stocktake 2022: Assessing the Status and Trends of Net Zero Target Setting across Countries, Sub-National Governments and Companies” (NewClimate Institute, Oxford Net Zero, Energy & Climate Intelligence Unit and Data-Driven EnviroLab, June 2022), <https://ca1-nzt.edcdn.com/Net-Zero-Tracker/Net-Zero-Stocktake-Report-2022.pdf?v=1655074300>.

<sup>35</sup> Hans et al., op. cit.

<sup>36</sup> Hans et al., op. cit.

<sup>37</sup> Jesse Bragg, Rachel Rose Jackson, and Souparno Lahiri, “The Big Con: How Big Polluters Are Advancing a ‘Net Zero’ Climate Agenda to Delay, Deceive, and Deny” (Corporate Accountability, Friends of the Earth International, Global Forest Coalition, June 2021), [https://www.corporateaccountability.org/wp-content/uploads/2021/06/The-Big-Con\\_EN.pdf](https://www.corporateaccountability.org/wp-content/uploads/2021/06/The-Big-Con_EN.pdf).

<sup>38</sup> Bragg, Jackson, and Lahiri, op. cit.

<sup>39</sup> Bragg, Jackson, and Lahiri, op. cit.

Recognising the risk of greenwashing, the United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities published a report in November 2022 addressing the core concerns raised by civil society groups around the use of net-zero pledges that make greenwashing possible.<sup>40</sup>

There are many well-researched and established critiques on net zero. As pointed out above, net zero assumes one tonne of carbon emitted from fossil fuel has the same value as one tonne of biotic carbon sequestered by land or forests. However, as seen above, using carbon sinks on land as a means to “offset” emissions from burning fossil fuels is scientifically flawed. Moreover, “net” means compensating emissions with offsets, which does not mean sufficient reduction in emissions. Some claim that carbon offsets should be allowed to compensate for unavoidable or hard-to-abate and residual emissions, but the question lies in how and who gets to define what an unavoidable/residual emission is.

There is just not enough land to satisfy the ever-increasing demand for land-based carbon removals. *The Land Gap Report 2022* finds that countries' climate pledges rely on a total of 1.2 billion hectares of land for land-based carbon removal, which is equivalent to the current global cropland and almost four times the area of India (329 million hectares).<sup>41</sup> According to the report, what is even more concerning is that 633 million hectares (over half of the 1.2 billion hectares) would involve a land-use change, through plantations and establishing new forested area, which may displace rural farming and indigenous communities.<sup>42</sup> Net zero on its own is problematic; when considered together with the unresolvable conceptual issues and other problems with carbon markets and offsets, it offers nothing more than a false solution to the climate crisis.

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<sup>40</sup> To access the report “Integrity Matters: Net Zero Commitments by Businesses, Financial Institutions, Cities and Regions” from the United Nations High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities: <https://www.un.org/sites/un2.un.org/files/high-level-expert-group-update7.pdf>

<sup>41</sup> Kate Dooley et al., *The Land Gap Report 2022*, November 2022, [https://www.landgap.org/wp-content/uploads/2022/11/Land-Gap-Report\\_FINAL.pdf](https://www.landgap.org/wp-content/uploads/2022/11/Land-Gap-Report_FINAL.pdf).

<sup>42</sup> Dooley et al., op. cit.

The Malaysian government has also announced its aspiration of going carbon-neutral or achieving net zero GHG emissions as early as 2050. In terms of accounting of GHGs, this means all emissions released by economic activities are counterbalanced by removing carbon from the atmosphere (removals). The LULUCF (land use, land-use change and forestry) sector, which played a role in removing approximately 65% of the country's total GHG emissions in 2019,<sup>43</sup> is seen as key to meeting Malaysia's aspiration.

However, as discussed further in Section 3.6.4, there are risks and implications when Malaysia engages in international carbon trading. Trading off our carbon credits from our sinks to international actors would mean that we cannot rely on these credits to balance out our emissions because double-counting of credits is not allowed. Double-counting of emission reductions is avoided by undertaking corresponding adjustments for anthropogenic emissions by sources and removals by sinks.<sup>44</sup> In other words, we, as a seller of credits, cannot use those credits to counterbalance our emissions to achieve net zero when the buyer of the credits is already going to use them to balance its own emissions.

Therefore, not only is it important to ask the right questions when evaluating net-zero pledges and the carbon market, but we will also need to understand the risks and implications when Malaysian entities engage in voluntary carbon market mechanisms or international carbon market-related activities and how this will undermine Malaysia's own net-zero aspirations. We should, of course, decarbonise as much as we can with the right policies and financing even as we increase our sinks.

### **3.3 Forest carbon offsets risk bringing more harm than good**

Building on the previous sections above, this section dives into the critical issue of forest carbon offsets and land-based carbon removals and the risk that they will bring more harm than good. The Clean Development Mechanism

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<sup>43</sup> Ministry of Natural Resources, Environment and Climate Change, Malaysia, *Malaysia: Fourth Biennial Update Report under United Nations Framework Convention on Climate Change*, December 2022, [https://unfccc.int/sites/default/files/resource/MY%20BUR4\\_2022.pdf](https://unfccc.int/sites/default/files/resource/MY%20BUR4_2022.pdf).

<sup>44</sup> Please see Malaysia's "National Guidance on Voluntary Carbon Market Mechanisms" issued by the then Ministry of Environment and Water here: <https://www.nrecc.gov.my/ms-my/teras/alamsekitar/Documents/National-Guidance-on-Voluntary-Carbon-Market-Mechanisms.pdf>

(CDM) and other international carbon markets have been tainted with many issues and problems including the impacts on indigenous peoples and local communities, who have contributed the least to climate change.

One of the key issues is that carbon accounting treats all types of carbon offsets (removals, avoided or reduced) the same.<sup>45</sup> However, avoided deforestation credits have been the most contentious and kept out of the main compliance markets, such as the CDM and the European Union (EU)'s ETS.<sup>46</sup>

In the recent negotiations on rules for markets under Article 6 of the Paris Agreement, the question of emissions avoidance remains unresolved. According to Doreen Stabinsky, “The biggest concern is that avoided emissions do nothing to compensate for ongoing emissions and the potential for significant inflating of baselines of deforestation and therefore significantly inflating the number of credits issued for projects.”<sup>47</sup>

Second, carbon offsets do not differentiate the “quality” of terrestrial carbon stocks based on ecosystem health or diversity (such as the difference between natural forest ecosystems and monoculture plantations).<sup>48</sup> Carbon storage varies widely across the ecosystem and is not correlated with the richness of biodiversity.<sup>49</sup> Having a carbon-based target will incentivise the destruction of species-rich ecosystems that may have low carbon sequestration value.<sup>50</sup>

Non-governmental organisations (NGOs) have long held that “plantations are not forests”; these concerns are now increasingly relevant with the rapid advance of the carbon removal agenda, and therefore warrant being discussed as part of this new conversation.

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<sup>45</sup> Carton, Lund, and Dooley, op. cit.

<sup>46</sup> Doreen Stabinsky, “Fossil Futures Built on a House of Cards” (Friends of the Earth International, June 30, 2022), [https://www.foei.org/wp-content/uploads/2022/06/Fossil-futures-built-on-a-house-of-cards\\_report-2022.pdf](https://www.foei.org/wp-content/uploads/2022/06/Fossil-futures-built-on-a-house-of-cards_report-2022.pdf).

<sup>47</sup> Stabinsky, “Fossil Futures Built on a House of Cards,” op. cit.

<sup>48</sup> Carton, Lund, and Dooley, op. cit.

<sup>49</sup> Doreen Stabinsky, “*Nature-Based Solutions*” and the *Biodiversity and Climate Crises*, Environment & Development Series No. 21 (Penang, Malaysia: Third World Network, August 2021), <https://twn.my/title/end/pdf/end21.pdf>.

<sup>50</sup> Stabinsky, “*Nature-Based Solutions*” and the *Biodiversity and Climate Crises*, op. cit.

It has been reported in the local media that Malaysian state governments and other parties are keen to sell forest carbon credits. This will likely be done through the voluntary carbon markets or the forest carbon offset (FCO) component under the Malaysia Forest Fund (MFF)'s REDD-Plus Finance Framework.<sup>51</sup> While it was claimed that the REDD-Plus norms in Malaysia will adhere to the highest standard and international best practices, SAM's review of the draft standards finds that they:<sup>52</sup>

- (1) lack a clear requirement to conduct a proper and meaningful free, prior and informed consent (FPIC) process. Currently, there are no existing federal and state laws that provide for the FPIC process for indigenous and local communities;
- (2) have no obligation to produce a benefit-sharing plan in consultation with indigenous peoples and local communities; and
- (3) have no requirement to monitor or report improvements in the social, economic and environmental well-being of affected communities.

Further, indigenous customary land rights which are without any document of title or status<sup>53</sup> tend to be erroneously interpreted as a very limited form of usufructuary rights.<sup>54</sup> This means that the relevant state government's interpretation of the size of such territories often conflicts with what is traditionally and historically held by the communities.

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<sup>51</sup> REDD-Plus creates a financial value for the carbon stored in forests. Developing countries will receive payments when they show results through their actions of reducing carbon emissions or increasing their forest carbon stocks. REDD-Plus was originally conceived as a "payment for results-based actions" programme and not intended for use as offsets, but the concept of REDD-Plus has evolved. REDD-Plus credits are also being traded in some compliance carbon markets (ETS) and voluntary carbon markets. The REDD-Plus Finance Framework in Malaysia will have two main components: (1) forest carbon offset (FCO) and (2) forest carbon certificate (FCC). This section discusses mainly the FCO, although some of the concerns over the draft FCO standards also apply to the FCC standards.

<sup>52</sup> SAM participated in the second consultation on the REDD-Plus Finance Framework Protocol organised by the Ministry of Energy and Natural Resources on October 21, 2021 and submitted written comments in November 2021.

<sup>53</sup> Indigenous customary land can be gazetted as an indigenous communal reserve in Malaysia.

<sup>54</sup> A usufructuary right is the right to use and benefit from the land, but not the right to ownership of the land itself.

If the above issues are not critically addressed first, the rush into trading forest carbon credits, be it in the domestic VCM or international VCM, will risk perpetuating the systemic causes of violations of indigenous customary land rights and territories in Malaysia.<sup>55</sup>

Already, there are numerous legal cases involving challenges brought by indigenous peoples against various state governments relating to projects or concessions being approved over what are claimed as indigenous peoples' lands and forests.<sup>56</sup> When state governments refuse to recognise the rights of indigenous peoples to their lands and forests in the first place, even having safeguards in FCO standards<sup>57</sup> will not guarantee their rights.

Some of the key lessons learned from REDD-Plus implementation in other countries are:<sup>58</sup>

- a) The failure of many REDD-Plus projects to deliver local benefits has led to local frustration and scepticism about REDD-Plus schemes. For example, at a REDD-Plus project site in Tanzania, new strategies introduced by project implementers were not considered financially viable for the local people; while in Madagascar, there were substantial uncompensated costs, which were felt especially by the poorest.

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<sup>55</sup> For more information on how the system fails indigenous peoples, please see SAM's article "Indigenous customary land rights and the modern legal system (Part 3: Systemic violations require system change)," <https://foe-malaysia.org/articles/indigenous-customary-land-rights-and-the-modern-legal-system-3/>.

<sup>56</sup> For more information, please see SAM's article "Indigenous customary land rights and the modern legal system (Part 2: Federal constitution and landmark judicial decisions)," <https://foe-malaysia.org/articles/indigenous-customary-land-rights-and-the-modern-legal-system-2/>.

<sup>57</sup> The early forest carbon projects were implemented with limited attention to welfare impacts. There has been a lot of debate about how useful REDD-Plus is as a tool, with many case studies on the ground pointing to its failure to protect the forest and the local communities. The Cancun Agreement on REDD-Plus social safeguards reached at the 2010 UN Climate Change Conference is thus a vital step towards ensuring that REDD-Plus initiatives do not harm people and the environment. Many VCM standards also have their own set of safeguards. However, while such safeguards may look good on paper, the real challenge lies in ensuring that they are respected and complied with throughout the implementation.

<sup>58</sup> A. Angelsen et al., *Transforming REDD+: Lessons and New Directions* (Center for International Forestry Research (CIFOR), 2018), <https://doi.org/10.17528/cifor/007045>.

- b) While REDD-Plus encourages local participation in decision-making and FPIC is a minimum ethical requirement, most case studies reveal the challenges in investing the time and resources for proper implementation of this concept to ensure meaningful local decision-making and participation. (Malaysia has adopted the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) which calls for FPIC.)
- c) Valuing carbon over life encourages false solutions like tree or monoculture plantations, carbon markets and net-zero targets.
- d) The REDD-Plus implementation in Peru, Tanzania and Indonesia has made insufficient progress in land tenure reform. REDD-Plus is not transformational when it comes to land tenure reform.

In any case, token revenues given to the communities from carbon trading or carbon pricing can never compensate for the damage, destruction and pollution that are the source of that revenue.<sup>59</sup>

### **3.4 Carbon markets open up the opportunity for more dangerous and risky solutions**

Carbon markets also open up the opportunity for other false climate solutions such as geoengineering and Carbon Capture and Storage (CCS) or Carbon Capture, Utilisation and Storage (CCUS), which are dangerous and risky.

Geoengineering<sup>60</sup> refers to any deliberate large-scale technological intervention in the Earth's climate system. It can be a land-based intervention

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<sup>59</sup> Tamra Gilbertson, "Carbon Pricing: A Critical Perspective for Community Resistance" (Climate Justice Alliance and Indigenous Environmental Network, October 2017), <https://www.ienearth.org/wp-content/uploads/2017/11/Carbon-Pricing-A-Critical-Perspective-for-Community-Resistance-Online-Version.pdf>.

<sup>60</sup> For more information, the following are three short videos about the different types of geoengineering: (1) *A technofix for the climate? Atmospheric geoengineering (Solar Radiation Management)*, <https://youtu.be/OBTVK8ajqa4>; (2) *A technofix for the climate? Marine geoengineering*, <https://www.youtube.com/watch?v=-iu7po7N6c>; (3) *A technofix for the climate? Land-based geoengineering (BECCS)*, <https://www.youtube.com/watch?v=qLsH84dIV1Y>.





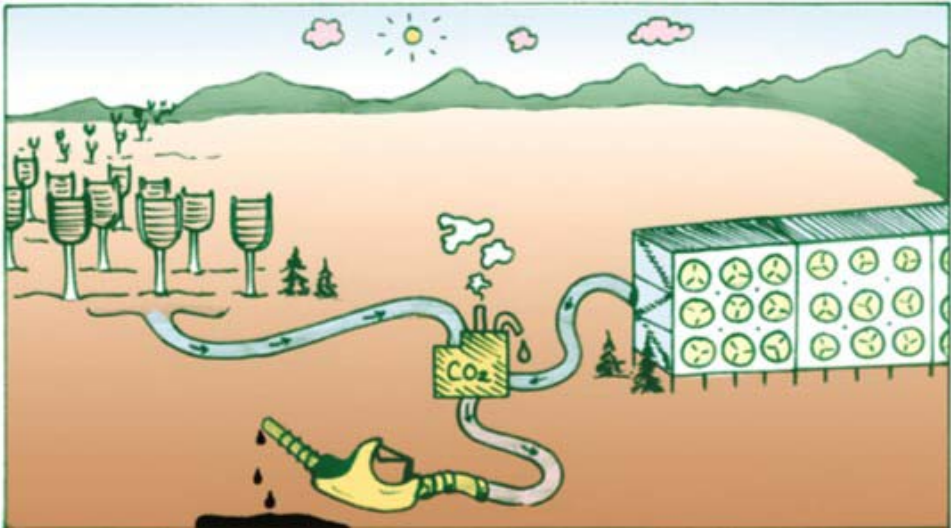


Figure 5: Direct Air Capture (DAC) (Source: Geoengineering Monitor, February 2021, <https://www.geoengineeringmonitor.org/2021/02/direct-air-capture-technology-briefing/>)

CCS refers to the process of capturing and storing carbon dioxide underground before it enters the atmosphere. CCUS refers to the same process but the captured emissions will be utilised for other industrial processes.<sup>64</sup>

CCS and CCUS, when applied in fossil fuel operations, are not considered as CDR methods because they do not remove carbon from the atmosphere.<sup>65</sup> However, CCS can provide the storage component of CDR methods such as DACCS and BECCS. DACCS is meant to capture carbon dioxide directly from ambient air, while BECCS is supposed to capture carbon dioxide in the form of biomass which is then stored in geological reservoirs or products.<sup>66</sup>

<sup>64</sup> Center for International Environmental Law (CIEL), “Carbon Capture and Storage,” *Center for International Environmental Law* (blog), accessed October 9, 2022, <https://www.ciel.org/issue/carbon-capture-and-storage/>.

<sup>65</sup> IPCC, “Climate Change 2022: Mitigation of Climate Change: Summary for Policymakers,” in *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2022), [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SummaryForPolicymakers.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf).

<sup>66</sup> IPCC, *op. cit.*

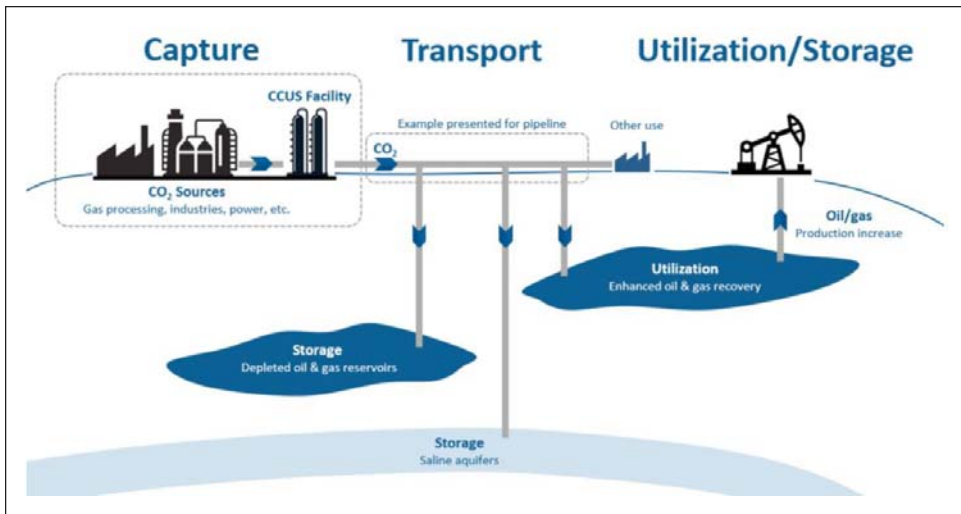


Figure 6: Carbon Capture Utilisation and Storage (Source: Institute for Energy Economics and Financial Analysis (IEEFA), 2022, [https://ieefa.org/wp-content/uploads/2022/04/Carbon-Capture-in-the-Southeast-Asian-Market-Context\\_April-2022.pdf](https://ieefa.org/wp-content/uploads/2022/04/Carbon-Capture-in-the-Southeast-Asian-Market-Context_April-2022.pdf))

Many governments and corporations are counting on excessive CDR to remove carbon dioxide from the atmosphere in the future,<sup>67</sup> while corporates expect to obtain significant gains on investment in development of CDR technologies via carbon markets and subsidies.<sup>68</sup> The other interaction between carbon markets and geoengineering that needs to be looked at is the risk of trading geoengineering-based removal offset activities in the global carbon market.<sup>69</sup>

All this will lead to a situation where the much-needed deep decarbonisation strategies are delayed while enabling dangerous and risky geoengineering “solutions”.<sup>70</sup> It will lock in another few decades of continued fossil fuel

<sup>67</sup> “Geoengineering and Net Zero,” CLARA, accessed October 9, 2022, <https://www.clara.earth/geoengineering>.

<sup>68</sup> “Geoengineering and Net Zero,” op. cit.

<sup>69</sup> Language on geoengineering-based removal offset activities was seen in the draft document under the Article 6.4 Mechanism Supervisory Body on Activities involving removals under the Article 6.4 mechanisms of the Paris Agreement. See here: <https://unfccc.int/process-and-meetings/the-paris-agreement/article-64-mechanism/calls-for-input/sb002-removals-activities>.

<sup>70</sup> “Geoengineering and Net Zero,” op. cit.

production and runs contrary to the urgent call for a rapid phasedown of fossil fuel required for the world to stay within the safe limit of a 1.5°C temperature increase.<sup>71</sup>

The dangers associated with geoengineering and CCS/CCUS techniques must also be taken into account. An IPCC Working Group II report concluded with high confidence that SRM approaches will introduce a widespread range of new risks to people and ecosystems which are not well understood due to large uncertainties and knowledge gaps.<sup>72</sup>

With regard to CDR, the IPCC Working Group II warned with high confidence that “Deployment of afforestation of naturally unforested land, or poorly implemented bioenergy, with or without carbon capture and storage, can compound climate-related risks to biodiversity, water and food security, and livelihoods, especially if implemented at large scales, especially in regions with insecure land tenure.”

Moreover, the CCS infrastructure presents serious health, safety, environmental and social risks. For example, the transportation and storage of carbon dioxide will require a massive network of pipelines connected to the underground injection sites; each comes with its own set of risks and dangers.<sup>73</sup> In the case of BECCS, the impacts on land use, resources, soil health and biodiversity are among the major concerns. The amount of land required to grow monoculture bioenergy crops is huge and this will likely result in competition with cropland, thereby increasing food prices.<sup>74</sup>

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<sup>71</sup> “Geoengineering and Net Zero,” op. cit.

<sup>72</sup> IPCC, “Climate Change 2022: Impacts, Adaptation and Vulnerability: Summary for Policymakers,” in *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2022), [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_SummaryForPolicymakers.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf).

<sup>73</sup> Center for International Environmental Law (CIEL), op. cit.

<sup>74</sup> Mathilde Fajardy, Alexandre Köberle, Niall Mac Dowell, and Andrea Fantuzzi, “BECCS Deployment: A Reality Check,” Imperial College London, Grantham Institute Briefing Paper No. 28, January 2019.

Most, if not all, of the existing CCUS infrastructure is tied to “enhanced oil recovery” (EOR).<sup>75</sup> In EOR, pressurised carbon dioxide is injected into existing depleted oil and gas reservoirs to recover more oil production.<sup>76</sup> Currently, EOR is the main market driver for captured carbon dioxide.<sup>77</sup> EOR results in more oil extraction and more carbon emissions when that oil is burned and is thus a false solution to the climate crisis.

Science and existing regulations in countries like the United States (US) do not back the claim of “permanent” storage or sequestration of carbon.<sup>78</sup> Current US federal regulations only require storage of carbon dioxide for 50 years to qualify for subsidies.<sup>79</sup> But carbon dioxide lingers in the atmosphere for hundreds or even thousands of years.

While the proponents have been claiming that the practice is safe and “permanent”, in the US, at least seven states have enacted laws allowing companies to transfer long-term liability for carbon storage projects to the state.<sup>80</sup> Two critical questions to ask are: Who bears long-term liability for keeping the promise of “permanence”? And who will hold long-term responsibility for projects that could require monitoring for decades?<sup>81</sup>

Furthermore, the infrastructure associated with carbon removal technologies will simply reproduce or deepen the unjust patterns of extraction and exploitation of land and resources in the developing countries. The developed countries’ ownership of the intellectual property rights (IPRs) over such technologies will only exacerbate the inequity, as we have seen from the imbalanced distribution of supplies of IPR-protected vaccines and treatments during the COVID-19 global pandemic.<sup>82</sup>

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<sup>75</sup> Center for International Environmental Law (CIEL), op. cit.

<sup>76</sup> Center for International Environmental Law (CIEL), op. cit.

<sup>77</sup> Center for International Environmental Law (CIEL), op. cit.

<sup>78</sup> Center for International Environmental Law (CIEL), op. cit.

<sup>79</sup> Center for International Environmental Law (CIEL), op. cit.

<sup>80</sup> Nicholas Kusnetz, “Proponents Say Storing Captured Carbon Underground Is Safe, But States Are Transferring Long-Term Liability for Such Projects to the Public,” *Inside Climate News* (blog), April 26, 2022, <https://insideclimatenews.org/news/26042022/carbon-capture-storage-safety-liability/>.

<sup>81</sup> Kusnetz, op. cit.

<sup>82</sup> For more information on the campaign for an IPR waiver for the prevention, containment and treatment of COVID-19, see here: [https://www.twn.my/title2/intellectual\\_property/trips\\_waiver\\_proposal.htm](https://www.twn.my/title2/intellectual_property/trips_waiver_proposal.htm).

In Malaysia, there are currently no laws and regulations in place to deal with the so-called CCS and carbon removal technologies. Environmental and social impact assessments will also need to be done. However, the capacity to properly and thoroughly assess the environmental and social impacts will be lacking, and proper implementation, emergency remediation plans to address contingencies if carbon dioxide leaks, and post-closure monitoring and mitigation plans spanning decades are real challenges. According to a new report by Grant Hauber of the Institute for Energy Economics and Financial Analysis, the two projects in Norway which are often cited as proof of the technology’s viability were the world’s most thoroughly studied pieces of earth but still subsurface unknowns can arise at any point and present material ongoing risks that may ultimately negate some or all of the benefits it seeks to create.<sup>83</sup> Hence, for this reason alone, we should not be promoting such risky ventures.

### **3.5 What it all adds up to: subprime carbon, carbon bubbles and carbon trading crime**

Building on the previous sections that highlighted the fundamental flaws with carbon markets and offsets, this section dives deeper into the associated financial implications, including the problems with subprime carbon, carbon bubbles, financial stability risks and carbon trading crime.

#### ***3.5.1 Opening the floodgates for subprime carbon***

Subprime carbon, also known as “junk carbon”, refers to contracts that are based on dubious carbon projects which carry a relatively high risk of not being realised and are likely to crash in value.<sup>84</sup> According to Frédéric Hache from the Green Finance Observatory, “Subprime carbon is comparable to subprime loans or junk bonds, which are debts that have a high risk of not

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<sup>83</sup> Grant Hauber, “Norway’s Sleipner and Snøhvit CCS: Industry Models or Cautionary Tales?” (Institute for Energy Economics and Financial Analysis, June 2023), <https://ieefa.org/resources/norways-sleipner-and-snohvit-ccs-industry-models-or-cautionary-tales>.

<sup>84</sup> Michelle Chan, “Subprime Carbon?: Re-Thinking the World’s Largest New Derivatives Market” (Friends of the Earth US, March 2009), <https://foe.org/resources/subprime-carbon-re-thinking-the-worlds-largest-new-derivatives-market/>.

being repaid.”<sup>85</sup> The fundamental issues discussed in the previous sections open the floodgates for subprime carbon.

Subprime carbon would most likely come from dubious carbon offset credits. One of the most well-known controversies in this area relates to carbon offset projects designed to destroy HFC-23, a chemical by-product of refrigerant production that is over 11,000 times more potent than carbon dioxide.<sup>86</sup> Various reports uncovered how companies purposely produced this chemical in order to make money off of the credits.<sup>87</sup> This prompted the Parties to the Kyoto Protocol to take up this issue at their December 2008 meeting in Poland.<sup>88</sup>

While carbon market advocates have since worked on improving the standards, rules and governance of these markets, they are still vulnerable to manipulation, as discussed below. Even more importantly, the new rules do not address the fundamentally flawed concept of carbon offset. Furthermore, they often become too complex and fail to be implemented on the ground.

Subprime carbon can come from projects that claim to be “additional” based on questionable assumptions and baselines, or from projects that use controversial methodologies. Additionality is essential in carbon offset projects. This is because if their associated greenhouse gas emission reductions are not additional, then buying offset credits in lieu of reducing one’s own emissions will only exacerbate climate change.<sup>89</sup>

A recent exposé by *The Guardian* together with two other investigative journalism outfits in January 2023 found that more than 90% of credits approved by the leading carbon offset certifier Verra<sup>90</sup> “are likely to be

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<sup>85</sup> Frédéric Hache, “50 Shades of Green: The Rise of Natural Capital Markets and Sustainable Finance Part I. Carbon,” Policy Report (Green Finance Observatory, March 2019), <https://greenfinanceobservatory.org/wp-content/uploads/2019/03/50-shades-carbon-final.pdf>.

<sup>86</sup> Chan, op. cit.

<sup>87</sup> Chan, op. cit.

<sup>88</sup> Chan, op. cit.

<sup>89</sup> “Additionality,” *Carbon Offset Guide* (blog), accessed February 1, 2023, <https://www.offsetguide.org/high-quality-offsets/additionality/>.

<sup>90</sup> Verra runs the international carbon crediting programme known as the Verified Carbon Standard (VCS) Program. See here: <https://verra.org/programs/verified-carbon-standard/>.

‘phantom credits’ and do not represent genuine carbon reductions”.<sup>91</sup> In response to the exposé, Verra published its own technical review to defend its credibility and rebutted that “the Guardian article is patently unreliable because it contains multiple serious methodological deficiencies...”

While it is beyond the scope of this memorandum to examine further the rebuttal, what this case shows is that avoided deforestation credits are fundamentally problematic. In the real world of complex politics and socioeconomics, it is nearly impossible to establish with certainty that a carbon offset project is additional – which is a major risk contributing to subprime carbon<sup>92</sup> – let alone when there is an inherent conflict of interest in the rush for carbon credits. (The problems with determining avoided emissions were discussed in Section 3.3.)

As Hache warns, “The securitisation of carbon offset projects, by bundling together a very large number of projects of mixed types and origins using complex financial structures, magnifies the risks of adverse selection, disincentivises due diligence and fosters subprime carbon.”<sup>93</sup>

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<sup>91</sup> Patrick Greenfield, “Revealed: More than 90% of Rainforest Carbon Offsets by Biggest Certifier Are Worthless, Analysis Shows,” *The Guardian*, January 18, 2023, sec. Environment, <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>.

<sup>92</sup> United States Congress House Committee on Ways and Means, *Addressing Price Volatility in Climate Change Legislation: Hearing Before the Committee on Ways and Means, U.S. House of Representatives, One Hundred Eleventh Congress, First Session, March 26, 2009*, 111–11 (U.S. Government Printing Office, 2009), <https://books.google.com.my/books?id=Mfe0oikJk6sC&pg=PA70&lpg=PA70&dq=in+October+2008+Goldman+Sachs+bought+a+stake+in+BlueSource,+a+carbon+offset+developer,+and+JPMorganChase+bought+stakes+in+Climate-Care,+another+offset+specialist&source=bl&ots=1Y6fthyhk&sig=ACfU3U1FdgDUo8vqEMiJIXYbW7FEwdLgCQ&hl=en&sa=X&ved=2ahUKewjrtZn89Y79AhUgRmwGHf9GDt8Q6AF6BAgGEAM#v=onepage&q=in%20October%202008%20Goldman%20Sachs%20bought%20a%20stake%20in%20BlueSource%2C%20a%20carbon%20offset%20developer%2C%20and%20JPMorganChase%20bought%20stakes%20in%20Climate-Care%2C%20another%20offset%20specialist&f=false>.

<sup>93</sup> Hache, op. cit.



When investors find it difficult to assess additionality and to attain the right amount of information to examine the quality of the offset projects, this may lead to a higher risk of adverse selection and also transfer due diligence to third parties (such as a certification body or standard-setting body like Verra), as happened with subprime mortgage securitisation during the 2008 financial crisis where investors often relied on rating agencies.<sup>94</sup>

### ***3.5.2 Subprime carbon, carbon bubbles and financial stability risks***

Today, it is widely accepted that climate change poses serious threats to financial stability and, as such, is material to central banks' and financial supervisors' mandates. The Task Force on Climate-Related Financial Disclosures (TCFD) was created in 2015 by the Financial Stability Board (FSB),<sup>95</sup> an international body that monitors and makes recommendations about the global financial system, to develop consistent climate-related financial risk disclosure guidelines for use by companies, banks and investors in providing information to stakeholders.<sup>96</sup> Participation in carbon markets is identified as a climate-related opportunity in TCFD reporting.<sup>97</sup>

However, the current policy responses to climate change, especially the carbon market, carry significant financial stability risks that need to be looked into.<sup>98,99</sup> These risks have not materialised so far due to the limited size and lack of real functioning of carbon markets in the past.<sup>100</sup> But today, ETSs are

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<sup>94</sup> Hache, op. cit.

<sup>95</sup> The Financial Stability Board coordinates national financial authorities and international standard-setting bodies. The FSB was established in April 2009 as the successor to the Financial Stability Forum (FSF). At their Pittsburgh Summit, the Heads of State and Government of the G20 major economies endorsed the FSB's original Charter of September 25, 2009 which set out the FSB's objectives and mandate, and organisational structure. The FSB has assumed a key role in promoting the reform of international financial regulation and supervision. See here: <https://www.fsb.org/about/history-of-the-fsb/>.

<sup>96</sup> UN Environment Programme: Finance Initiative, "TCFD – Task Force on Climate-Related Financial Disclosures – United Nations Environment – Finance Initiative," accessed April 21, 2022, <https://www.unepfi.org/climate-change/tcfd/>.

<sup>97</sup> Task Force on Climate-Related Financial Disclosures, "Recommendations of the Task Force on Climate-Related Financial Disclosures," June 2017, <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>.

<sup>98</sup> Hache, op. cit.

<sup>99</sup> Chan, op. cit.

<sup>100</sup> Hache, op. cit.

proliferating around the world, with 25 ETSs currently in force, nine under development and 14 under consideration.<sup>101</sup> According to South Pole, a Swiss carbon finance consultancy, the demand for VCM has risen from 12 million tonnes in 2011 to 216 million tonnes in 2021.<sup>102</sup> The Ecosystem Marketplace's State of the Voluntary Carbon Markets report stated that the VCM increased fourfold towards \$2 billion in 2021 compared with 2020.<sup>103</sup> Trafigura, a top oil trader, even predicted that the carbon market could become 10 times bigger than the global crude oil market, as reported by Bloomberg.<sup>104</sup>

The Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimates that demand for carbon credits could increase by a factor of 15 or more by 2030 and by a factor of up to 100 by 2050.<sup>105</sup> Overall, the TSVCM expects the market for carbon credits could be worth upward of \$50 billion in 2030.<sup>106</sup> Clearly, there is an increase in scale and scope of the financial stability risks associated with carbon markets today.

Al Gore, former vice president of the US and the chairman of Generation Investment Management LLP, has said in an interview that there is now a subprime carbon bubble of \$22 trillion, based on an absurd assumption that all of those carbon fuels are going to be burned.<sup>107</sup>

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<sup>101</sup> International Carbon Action Partnership (ICAP), "Welcome to the ICAP ETS Map," accessed April 30, 2022, <https://icapcarbonaction.com/en/ets>.

<sup>102</sup> "The Voluntary Carbon Market: 8 Things to Know for the Year Ahead," South Pole, accessed September 6, 2022, <https://www.southpole.com/reports/voluntary-carbon-market-trend-report-2022>.

<sup>103</sup> The EM Insights Team, "VCM Reaches Towards \$2 Billion in 2021: New Market Analysis Published from Ecosystem Marketplace," *Ecosystem Marketplace* (blog), accessed February 5, 2023, <https://www.ecosystemmarketplace.com/articles/the-art-of-integrity-state-of-the-voluntary-carbon-markets-q3-2022/>.

<sup>104</sup> Will Mathis, Vanessa Dezem, and Ewa Krukowska, "Top Oil Traders Say Emissions Market Could Challenge Crude," *Bloomberg.com*, June 16, 2021, <https://www.bloomberg.com/news/articles/2021-06-16/traders-see-carbon-becoming-bigger-market-than-crude-oil>.

<sup>105</sup> Christopher Blaufelder et al., "A Blueprint for Scaling Voluntary Carbon Markets to Meet the Climate Challenge," McKinsey, January 29, 2021, <https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge>.

<sup>106</sup> Blaufelder et al., op. cit.

<sup>107</sup> Tasneem Hanfi Brögger, "Al Gore Warns of a \$22 Trillion 'Subprime Carbon Bubble'," November 3, 2021, <https://www.aljazeera.com/economy/2021/11/3/al-gore-warns-of-a-22-trillion-subprime-carbon-bubble>.

The 2007-2008 financial crisis should provide a cautionary tale for any large-scale carbon trading programme, as forewarned by the 2009 “Subprime Carbon?” report by Friends of the Earth US.<sup>108</sup> Subprime mortgages had triggered the financial crisis, but the underlying cause was the lax lending standards that led to over-borrowing, pumped up real estate prices, and encouraged mortgage originators to sell huge amounts of bad loans.<sup>109</sup> Banks aggregated all the high-risk and lower-risk mortgages into packages (tranche asset-backed securities) that were then bought, re-bundled and re-sold in products with various risk categories.<sup>110</sup> Rating agencies declared the products safe, but eventually it became clear that they were unable to assess the thousands of individual mortgages which comprised these mortgage-backed securities, resulting in a significant amount of subprime mortgages.<sup>111</sup> Soon, the whole system began to unravel, leading to the Great Recession, a global economic downturn that devastated world financial markets and caused millions of people to lose their life savings, their jobs and their homes.<sup>112</sup>

According to Hache, “Carbon as an asset class would create a high risk of a bubble and contagion to other asset classes, as shown by lessons from commodity derivatives. These contagion channels would transmit the high uncertainty of carbon markets to other markets and the wider economy.”<sup>113</sup>

A carbon credit is not tangible, unlike many other asset classes, hence the cause for much concern. Moreover, once the VCM exchange aggregates carbon credits that share similar traits and fundamentals, it could be as difficult, if not more, to analyse the quality of the numerous underlying carbon offset projects – such as their additionality and permanence – as it was to analyse US mortgages.<sup>114</sup>

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<sup>108</sup> Chan, op. cit.

<sup>109</sup> Anne Field, “What Caused the Great Recession? Understanding the Key Factors That Led to One of the Worst Economic Downturns in US History,” Business Insider, August 9, 2022, <https://www.businessinsider.com/personal-finance/what-caused-the-great-recession>.

<sup>110</sup> Chan, op. cit.

<sup>111</sup> Chan, op. cit.

<sup>112</sup> History.com Editors, “Great Recession,” HISTORY, October 11, 2019, <https://www.history.com/topics/21st-century/recession>.

<sup>113</sup> Hache, op. cit.

<sup>114</sup> Chan, op. cit.

Further, the financial markets have become vastly more complex and exotic since the first sulfur dioxide (SO<sub>2</sub>) cap-and-trade<sup>115</sup> in the US in 1995. Today, we are even seeing new technologies like blockchain that paves the way for cryptocurrencies like bitcoin and non-fungible tokens (NFTs) in the carbon markets. (In Malaysia, cryptocurrencies do not constitute money that is legally accepted for exchange of goods and services and hence are not regulated by the central bank, Bank Negara Malaysia (BNM)).<sup>116</sup>

How blockchain technology will exacerbate the problems with carbon offsets is shown in the case of Toucan as reported by REDD-Monitor<sup>117</sup> in the article “Toucan’s crypto layer on top of carbon offsets is expanding the market for toxic hot air”, and in the case of the carbon credit that was recently sold as an NFT at a hefty price (see below). This is in addition to the massive electricity consumption and huge carbon footprint associated with cryptocurrencies.

Toucan,<sup>118</sup> a crypto carbon company, transferred 21 million retired carbon offsets from Verra to the blockchain in the name of helping to clean up all the cheapest, lowest-quality credits, thus preventing heavy carbon polluters like oil companies from purchasing meaningless offsets – a process the crypto community called “sweeping the floor”.<sup>119, 120</sup> This is especially controversial

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<sup>115</sup> The US sulfur dioxide trading market was perceived by many proponents of cap-and-trade as a successful example of cap-and-trade achieving its environmental objective.

<sup>116</sup> The Securities Commission (SC), as the regulator of the capital market in Malaysia, has prescribed digital assets as securities under its laws and has issued guidelines to regulate online platforms which facilitate the trading of digital assets. See “BNM and SC’s Joint Response on ‘Policy confusion over cryptocurrencies’” here: <https://www.bnm.gov.my/-/bnm-and-sc-s-joint-response-on-policy-confusion-over-cryptocurrencies->.

<sup>117</sup> REDD-Monitor was set up in October 2008 in response to discussions between environmental and social organisations and movements in the North and South. See more here: <https://redd-monitor.org/about/>.

<sup>118</sup> Toucan is a crypto carbon company, or, more specifically, a market infrastructure that enables the transfer of physical carbon credits, found on countless different physical registries, and converts and standardises them into carbon tokens on one blockchain super-registry. This process is also known as tokenisation of carbon credits, where the credits’ information and functionality are moved onto a blockchain and the credit is represented as a token. For more information, please see <https://www.wired.co.uk/article/toucan-crypto-carbon-credits#:~:text=Simply%20put%2C%20Toucan%20is%20a,given%20a%20tradable%20crypto%20token>. Or visit <https://toucan.earth/about>.

<sup>119</sup> “Toucan Protocol’s Campaign to End Useless Carbon Offsets Is Struggling,” *Carbon Herald* (blog), April 16, 2022, <https://carbonherald.com/toucan-protocol-end-useless-carbon-offsets-struggling/>.

<sup>120</sup> Grayson Badgley and Danny Cullenward, “Zombies on the Blockchain,” *CarbonPlan*, April 7, 2022, <https://carbonplan.org/research/toucan-crypto-offsets>.

because carbon offsets, once retired, should be taken off the market forever and never be traded or swamped again. This is to prevent the polluter from claiming that it has offset emissions while reselling the credit for profit.

Verra, in a statement on “Crypto Market Activities” and in response to REDD-Monitor’s questions, sought to disclaim responsibility and said Toucan was not an accountholder in the Verra Registry and hence was not contractually bound to the Registry’s Terms of Use.<sup>121</sup> It stated that “Tokens that have not been licensed or otherwise authorized by Verra are not verified, endorsed, or recognized by Verra as representing or equating to VCUs [verified carbon units] or an environmental benefit associated with VCUs.”<sup>122</sup>

Separately, it was reported that Toucan had initially tokenised the controversial HFC-23 credits mentioned above but blacklisted them two days later after being exposed by a Carbon Pulse report.<sup>123</sup> Another investigation in April 2022 finds that Toucan’s “sweeping the floor” campaign appears to be renewing the demand for long-neglected low-quality credits that have experienced little or no demand in recent years or have been excluded from the conventional offset market due to quality concerns.<sup>124</sup> The authors coined the term “zombie projects” to describe these moves, and one such example is hydropower dam projects.<sup>125</sup> Today, it has been established that hydropower dams are a false solution to the climate crisis because, among other reasons, they generate significant amounts of methane<sup>126</sup> and carbon dioxide when

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<sup>121</sup> Chris Lang, “Verra’s Response to REDD-Monitor’s Questions about Toucan’s Transferring of Retired Carbon Offsets to the Blockchain: ‘An Entity That Retires a VCU and Then Creates a Token Is Not, Strictly Speaking, Tokenizing a VCU, but Is Instead Creating an Instrument That Exists Outside of Verra’s Ecosystem’,” REDD-Monitor, April 12, 2022, <https://redd-monitor.org/2022/04/12/verras-response-to-redd-monitors-questions-about-toucans-transferring-of-retired-carbon-offsets-to-the-blockchain-an-entity-that-retires-a-vcu-and-then-creates-a-token-is-not-strictly-speaki/>.

<sup>122</sup> Verra, “Verra Statement on Crypto Market Activities,” November 25, 2021, <https://verra.org/statement-on-crypto/>.

<sup>123</sup> Carbon Pulse, “Crypto Carbon Demand Brings Back Shunned HFC-23 Credits,” December 13, 2021, <https://carbon-pulse.com/146462/>.

<sup>124</sup> Badgley and Cullenward, *op. cit.*

<sup>125</sup> Badgley and Cullenward, *op. cit.*

<sup>126</sup> Methane is a more powerful greenhouse gas than carbon dioxide.

vegetation and organic matter are flooded in the reservoirs, and they also cause destruction of nature and biodiversity loss.<sup>127</sup>

While it is beyond the scope of this memorandum to delve deeper into these issues surrounding Toucan, this case clearly highlights the gaps and loopholes in the current carbon offset governance.

Moreover, cryptocurrencies are generally viewed as speculative, given their wildly unpredictable price fluctuation.<sup>128</sup> A market controlled by speculators may push up prices, create a bubble and lead to the development of subprime assets.<sup>129</sup>

As reported by the climate journalism website Climate Home News in January 2022, a carbon credit generated from one of the largest REDD-Plus peat swamp forest projects, Rimba Raya reserve in Indonesia, was sold for the sizeable amount of \$70,000 at auction as an NFT, as compared to the millions of credits from the same project that were trading on the conventional market for less than \$20 each.<sup>130</sup>

Save Planet Earth (SPE), the UK-based cryptocurrency venture behind the NFT auction, has sold 1,000 limited edition carbon credits as NFTs from credits certified by Verra, for an average price of \$1,770.<sup>131</sup> SPE claims that the objective is to raise funds to plant billions of trees and store carbon that can be sold as carbon credits. SPE has also claimed to have secured government contracts to plant trees in Pakistan, Sri Lanka and the Maldives.<sup>132</sup> However, an investigation by Climate Home News, drawing on interviews

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<sup>127</sup> For more information on why hydropower dams are a false climate solution, please see <https://www.internationalrivers.org/news/10-reasons-why-hydropower-dams-are-a-false-climate-solution/#:~:text=Not%20only%20does%20hydroelectric%20power,of%20the%20worst%20greenhouse%20gases.>

<sup>128</sup> Shadforth, “Cryptocurrency – Investment or Speculation?,” November 19, 2021, [https://www.sfg.com.au/insights/shadforth\\_blog/investment-vs-speculation](https://www.sfg.com.au/insights/shadforth_blog/investment-vs-speculation).

<sup>129</sup> Chan, op. cit.

<sup>130</sup> Chloé Farand, “Crypto Bubble: The Hype Machine behind a \$70,000 Carbon Credit,” *Climate Home News* (blog), January 28, 2022, <https://climatechangenews.com/2022/01/28/crypto-bubble-hype-machine-behind-70000-carbon-credit/>.

<sup>131</sup> Farand, op. cit.

<sup>132</sup> Farand, op. cit.

with government officials and experts in those countries, suggests this claim is vastly inflated, and the hype risks creating a crypto bubble.<sup>133</sup>

Lastly, conflicts of interest are inherent in the carbon finance market and the broader financial sector.<sup>134</sup> There are banks, carbon brokers and sector analysts that own equity stakes in carbon offset projects, and this may create incentives to bid up carbon prices to increase the value of their own carbon assets.<sup>135</sup> For example, Goldman Sachs owned a stake in BlueSource, a carbon offset developer, and JPMorgan Chase bought stakes in ClimateCare, another offset specialist.<sup>136</sup> Furthermore, when carbon offset project proponents directly fund the project consultants and auditors, this can give rise to a scenario where “the hand that feeds will not be bitten”. Such conflicts of interest are not unique to the carbon markets – as indicated by critiques of the Environmental Impact Assessment (EIA) process in Malaysia or any certification process in general – but they compromise their integrity, from both a financial and environmental perspective.<sup>137</sup>

All in all, if the very basis of the carbon market and offsets is flawed, they will be unable to deliver progress in addressing climate change but will instead serve as a distraction from real climate action. In fact, the rapid growth in the carbon market will not only serve as a distraction but also, as discussed above, carry significant financial stability risks that need to be looked into.

### 3.5.3 Carbon trading crime

The International Criminal Police Organization (INTERPOL) recognises that the intangible nature of carbon makes carbon markets exceptionally vulnerable to criminal activity.<sup>138</sup> Carbon markets are also at risk of exploitation by

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<sup>133</sup> Farand, op. cit.

<sup>134</sup> Hache, op. cit.

<sup>135</sup> Hache, op. cit.

<sup>136</sup> Steffen Böhm and Siddhartha Dabhi, eds., *Upsetting the Offset: The Political Economy of Carbon Markets* (London: MayFlyBooks, 2009), <http://www.thecornerhouse.org.uk/sites/thecornerhouse.org.uk/files/UpsettingtheOffset.pdf>.

<sup>137</sup> Hache, op. cit.

<sup>138</sup> International Criminal Police Organization (INTERPOL), “Guide to Carbon Trading Crime,” June 2013, <https://www.interpol.int/content/download/5172/file/Guide%20to%20Carbon%20Trading%20Crime.pdf>.

criminals due to the large amounts of money invested, the immaturity of the regulations and lack of oversight and transparency.<sup>139</sup>

INTERPOL warns that if financial instruments related to carbon trading become too complex, the world's carbon markets could trigger a financial crisis on par with the 2008 event.<sup>140</sup> The trading of derivatives and other financial instruments, including the linkages between carbon credits and cryptocurrencies, adds to the complexity and difficulty in properly disaggregating the instruments and assessing for compliance.

According to INTERPOL's "Guide to Carbon Trading Crime",<sup>141</sup> the illegal activities that can take place in carbon markets include:

- a. Fraudulent manipulation of measurements to claim more carbon credits from a project than were actually obtained;
- b. Sale of carbon credits that either do not exist or belong to someone else;
- c. False or misleading claims with respect to the environmental or financial benefits of carbon market investments;
- d. Exploitation of weak regulations in the carbon market to commit financial crimes, such as money laundering, securities fraud or tax fraud; and
- e. Computer hacking/phishing to steal carbon credits and theft of personal information.

While the governance and standards have relatively improved based on the lessons from the past, carbon trading today has also become more complex and sophisticated, posing challenges for regulators.

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<sup>139</sup> International Criminal Police Organization (INTERPOL), *op. cit.*

<sup>140</sup> International Criminal Police Organization (INTERPOL), *op. cit.*

<sup>141</sup> International Criminal Police Organization (INTERPOL), *op. cit.*



### 3.6 Emission trading schemes abroad: The pitfalls and lessons learned

As has been pointed out previously, ETSs are proliferating around the world.<sup>142</sup> Each system is unique in terms of design features such as the type of GHG and economic sectors covered, allowances, caps, etc.

Established in 2005, the European Union’s ETS is the first major emissions trading system.

In Asia, Indonesia launched a pilot voluntary ETS for the power sector in March 2021 and is planning to start a national compliance system by 2024.<sup>143</sup> Indonesia has also announced a hybrid “cap-trade-and-tax” system to be implemented starting April 2022.<sup>144</sup> Vietnam is expected to create a national compliance system by 1 January 2022 after the law is passed in November 2020.<sup>145</sup> Legislation to establish a domestic cap-and-trade system covering the industrial and commercial sectors is under consideration in the Philippines.<sup>146</sup> Thailand has established a Voluntary Emissions Trading Scheme since 2013 to test the Monitoring, Reporting and Verification (MRV) system and explore target-setting.<sup>147</sup> The country is also piloting emission trading projects in Thailand’s Eastern Economic Corridor Initiative (Department of Industrial Promotion and Industrial Estate Authority of Thailand).<sup>148</sup> As for China, its ETS is the largest carbon market in the world

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<sup>142</sup> International Carbon Action Partnership (ICAP), “Welcome to the ICAP ETS Map,” op. cit.

<sup>143</sup> Raul C. Rosales et al., “Voluntary Carbon Markets in ASEAN: Challenges and Opportunities for Scaling Up” (Imperial College Business School, July 2021), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1026880/Green\\_Finance\\_COP26\\_Universities\\_Network\\_Policy\\_Report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1026880/Green_Finance_COP26_Universities_Network_Policy_Report.pdf).

<sup>144</sup> International Carbon Action Partnership (ICAP), “Indonesia Establishes the Legal Framework for a Domestic Emissions Trading System,” March 29, 2022, <https://icapcarbonaction.com/en/news/indonesia-establishes-legal-framework-domestic-emissions-trading-system>.

<sup>145</sup> Rosales et al., op. cit.

<sup>146</sup> International Carbon Action Partnership (ICAP), “Philippines | International Carbon Action Partnership,” accessed February 13, 2023, <https://icapcarbonaction.com/en/ets/philippines>.

<sup>147</sup> International Carbon Action Partnership (ICAP), “Thailand | International Carbon Action Partnership,” accessed February 13, 2023, <https://icapcarbonaction.com/en/ets/thailand>.

<sup>148</sup> International Carbon Action Partnership (ICAP), “Thailand | International Carbon Action Partnership,” op. cit.

by volume, covering more than four billion tonnes of carbon dioxide, which accounts for about 40% of the country's national carbon emissions.<sup>149</sup>

This section seeks to draw lessons from the operation of ETSs abroad, including in the EU and China, in relation to their attempts to resolve the underlying conceptual issues surrounding carbon markets discussed in Section 3.1.

### ***3.6.1 Cap-and-trade theory is based on unrealistic assumptions***

The fundamental concept of cap-and-trade is based on the Coase Theorem, named after the economist Ronald Coase.<sup>150</sup> According to the Coase Theorem, if the transaction cost (also known as administration cost) is low and property rights (e.g., rights to pollute, rights to clean air, etc) are well-defined, a cap-and-trade scheme will work more efficiently than government regulation in addressing carbon emissions.<sup>151</sup>

However, Coase himself admitted that he never liked the Coase Theorem because it did not align with his original intention, which was to highlight the importance of transaction costs to economic policy:

I don't like it because it's a proposition about a system in which there were no transaction costs. It's a system which couldn't exist. And therefore, it's quite unimaginable.<sup>152</sup>

This is a critical statement from Coase himself to counter the mainstream narrative that the carbon market is a more effective way to achieve emission reductions.

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<sup>149</sup> International Carbon Action Partnership (ICAP), "China National ETS | International Carbon Action Partnership," December 2, 2022, <https://icapcarbonaction.com/en/ets/china-national-ets>.

<sup>150</sup> *Can Economics Help Us Save the Planet? Part 2 | Economics for People with Ha-Joon Chang*, Economics for People, 2019, <https://www.youtube.com/watch?v=C3ibsJuFHEs>.

<sup>151</sup> *Can Economics Help Us Save the Planet?*, op. cit.

<sup>152</sup> Cited in Timothy B. Lee, "The Coase Theorem Is Widely Cited in Economics. Ronald Coase Hated It," *The Washington Post*, September 4, 2013, <https://www.washingtonpost.com/news/wonk/wp/2013/09/04/the-coase-theorem-is-widely-cited-in-economics-ronald-coase-hated-it/>

For economists, climate change is an example of negative externality.<sup>153</sup> Economic activities pollute or release greenhouse gases that cause climate change, a phenomenon that impacts society as a whole (for instance, floods, droughts, loss of life and biodiversity, damage caused by sea level rise, among others), but this social cost of climate change is normally not taken into account by the polluters. Carbon pricing (through either a carbon tax or cap-and-trade) is therefore proposed as a means for polluters to internalise the cost of externalities (carbon emissions).

However, for carbon markets to work, i.e., to spur technological innovation to reduce emissions in a more cost-effective manner, the following unrealistic assumptions need to hold: (a) perfect information; (b) low or zero transaction cost; and (c) perfect competition.<sup>154</sup>

In a world of perfect information, the government knows exactly, in economic terms, the social marginal cost of emissions, the avoided cost of abatement, etc. With all this information, the government will then set the “right” cap or issue the “right” number of permits/allowances to yield the optimal outcome that reflects the full social marginal cost of emissions.

In practice, this is translated into the social cost of carbon dioxide (SC-CO<sub>2</sub>), which is an estimate, in monetary terms, of the net impacts from global climate change incurred by society from a 1 metric ton increase in carbon dioxide emissions in a given year.<sup>155</sup> For example, the US government has used estimates of SC-CO<sub>2</sub> in climate-related regulatory impact analysis to value the costs and benefits associated with changes in CO<sub>2</sub> emissions since 2008.<sup>156</sup>

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<sup>153</sup> In economics discourse, an “externality” occurs when producing or consuming a good causes an impact (either positive or negative) on third parties or society who are not directly related to the transaction.

<sup>154</sup> *Can Economics Help Us Save the Planet?*, op. cit.

<sup>155</sup> Committee on Assessing Approaches to Updating the Social Cost of Carbon et al., *Valuing Climate Changes: Updating Estimation of the Social Cost of Carbon Dioxide* (Washington, DC: National Academies Press, 2017), <https://doi.org/10.17226/24651>.

<sup>156</sup> Committee on Assessing Approaches to Updating the Social Cost of Carbon et al., op. cit.

However, given that new estimates of SC-CO<sub>2</sub> are typically higher than the current value,<sup>157</sup> and that longer-term research is required to further improve the estimation,<sup>158</sup> we can conclude that perfect information is an unrealistic assumption in the real world due to scientific uncertainty, dynamic uncertainty and strategic uncertainty. At the end of the day, it will be a challenge or even impossible to capture the full and real social cost of climate change, let alone the level of carbon pricing to reflect this cost.

The experience of the EU ETS demonstrates that perfect information, perfect competition and zero transaction cost will never exist in the real world.

Since the start of the EU ETS in 2005, there have already been four phases deploying different legislation and tools. The first trading period during 2005-2007 was a time for “learning by doing”.<sup>159</sup> The number of allowances, based on available information and estimations, turned out to be excessive; consequently, the companies had no incentive to reduce emissions and the price of the first-period allowances fell to zero in 2007.<sup>160</sup>

During the second trading period in 2008-2012, the number of allowances was reduced by 6.5%.<sup>161</sup> However, the entire phase 2 of the EU ETS suffered from a lack of scarcity due to the sharp fall in demand for the allowances

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<sup>157</sup> The latest known estimation of SC-CO<sub>2</sub> is in research published by Kevin Rennert et al. in September 2022, where the authors’ proposed mean SC-CO<sub>2</sub> estimate is \$185 per tonne of CO<sub>2</sub> (\$44-\$413 per tCO<sub>2</sub>; 5%-95% range, 2020 US dollars) at a near-term risk-free discount rate of 2%, a value 3.6 times higher than the US government’s current value of \$51 per tCO<sub>2</sub>. This research is cited here as an example of a higher social cost estimate based on improved scientific understanding. The extent to which the research takes into account equity is beyond the scope of this memorandum. See Kevin Rennert et al., “Comprehensive Evidence Implies a Higher Social Cost of CO<sub>2</sub>,” *Nature* 610, no. 7933 (September 1, 2022): 687-92, <https://doi.org/10.1038/s41586-022-05224-9>.

<sup>158</sup> Committee on Assessing Approaches to Updating the Social Cost of Carbon et al., op. cit.

<sup>159</sup> European Commission Climate Action, “The EU Emissions Trading System (EU ETS): Factsheet,” September 2016, [https://climate.ec.europa.eu/system/files/2016-12/factsheet\\_ets\\_en.pdf](https://climate.ec.europa.eu/system/files/2016-12/factsheet_ets_en.pdf).

<sup>160</sup> European Commission Climate Action, op. cit.

<sup>161</sup> European Commission Climate Action, op. cit.

during the 2008-2009 economic crisis.<sup>162</sup> This led to a surplus of unused allowances and credits which affected the carbon price.<sup>163</sup>

A study in 2013 estimated that during the 2005-2011 period, emission reduction in EU ETS-covered sectors could be explained almost entirely by a combination of factors *not* related to the carbon market.<sup>164</sup> The study found that the EU ETS had not spurred eco-innovation.<sup>165</sup> Innovation investments were probably discouraged by the high price volatility observed in the first and second phases.<sup>166</sup>

Another study in March 2021 finds that the EU ETS has led to average emission reductions of 0%-1.5% per year.<sup>167</sup> This is insignificant, given the EU's historical emissions and also the limited global carbon budget. Meanwhile, the biggest polluters such as ArcelorMittal, the world's largest steel company, made over 2 billion euros in profits from the EU ETS between 2005 and 2008, while making minimal proactive changes to reduce emissions.<sup>168</sup>

Another problem is that too generic rules for the national caps contributed to further augmenting the oversupply problem, indicating the “governance” problem as discussed in the previous section.<sup>169</sup>

The third EU ETS trading period (2013-2020) saw major reform take effect in a bid to rectify the problems in the first and second phases. The main

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<sup>162</sup> Simone Borghesi and Massimiliano Montini, “The Best (and Worst) of GHG Emission Trading Systems: Comparing the EU ETS with Its Followers,” *Frontiers in Energy Research* 4 (July 29, 2016), <https://doi.org/10.3389/fenrg.2016.00027>.

<sup>163</sup> European Commission Climate Action, op. cit.

<sup>164</sup> Olivier Gloaguen and Emilie Alberola, “Assessing the Factors behind CO<sub>2</sub> Emissions Changes over the Phases 1 and 2 of the EU ETS: An Econometric Analysis,” October 2013, 38, <https://www.i4ce.org/wp-content/uploads/13-10-CDC-Climat-R-WP-13-15-Assessing-the-factors-behing-CO2-emissions-changes.pdf>.

<sup>165</sup> Borghesi and Montini, op. cit.

<sup>166</sup> Borghesi and Montini, op. cit.

<sup>167</sup> Jessica F. Green, “Does Carbon Pricing Reduce Emissions? A Review of Ex-Post Analyses,” *Environmental Research Letters* 16, no. 4 (April 1, 2021): 043004, <https://doi.org/10.1088/1748-9326/abdae9>.

<sup>168</sup> Gilbertson, op. cit.

<sup>169</sup> Borghesi and Montini, op. cit.

changes were the introduction of an EU-wide cap on emissions (reduced by 1.74% each year) and a shift towards auctioning of allowances to replace the cost-free allocation.<sup>170</sup> The manufacturing sector was to go from 80% to 30% free allowances from 2013-2020. The fourth trading period is running from 2021 to 2028.

With regard to the Chinese national ETS, experts have identified five key aspects that need to be addressed to ensure it fulfils its key role in achieving China's climate targets: (1) strengthen the legal foundation; (2) improve data quality; (3) expand coverage to include more sectors; (4) refine the allocation approach; and (5) restart with a clear policy on the usage of offsets.<sup>171</sup> Experts are also proposing that China's national ETS should at some point move towards setting an absolute emission cap aligned with a long-term allowance allocation plan.<sup>172</sup>

Given that zero transaction cost is not possible, the use of the carbon market will be less effective than a command-and-control policy (see Section 5.1) to achieve carbon emission reductions. Larry Lohmann pointed out that in the early 1990s, Parties to the UNFCCC had a range of command-and-control policy approaches to choose from for carbon emission reductions; however, “[t]he Kyoto Protocol’s framers passed over these possibilities and others. Instead they undertook to translate public concern about climate change into greenhouse gas emissions permit and credit prices”.<sup>173</sup>

Opting for a national ETS will also inevitably involve “learning by doing”. The question that we need to ask is whether we have the luxury of time to depend on “learning by doing” the ETS.

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<sup>170</sup> European Commission Climate Action, op. cit.

<sup>171</sup> ICAP, *Emissions Trading Worldwide: International Carbon Action Partnership (ICAP) Status Report 2022* (Berlin: International Carbon Action Partnership, 2022), [https://icapcarbonaction.com/system/files/document/220408\\_icap\\_report\\_rz\\_web.pdf](https://icapcarbonaction.com/system/files/document/220408_icap_report_rz_web.pdf).

<sup>172</sup> ICAP, op. cit.

<sup>173</sup> Larry Lohmann, “Marketing and Making Carbon Dumps: Commodification, Calculation and Counterfactuals in Climate Change Mitigation,” *Science as Culture* 14, no. 3 (September 2005): 203-35, <https://doi.org/10.1080/09505430500216783>.

Embarking on the ETS route only to learn that it is not worth the effort given all the real-world circumstances, would be a folly. This applies even more so to voluntary carbon markets, which do not have a cap on carbon emissions. The biggest lesson in this is thus to not embark on such a route in the first place.

### ***3.6.2 Most ETSs restrict the use of international offsets***

Offsets are emissions reductions from activities outside the scope of the ETS, from either the domestic or international carbon market.<sup>174</sup> Accepting offsets will increase the overall cap in an ETS.<sup>175</sup> Therefore, jurisdictions usually limit the number of offsets that can be used, to ensure that most abatement takes place in the ETS sectors.<sup>176</sup>

Given that the CDM and other international carbon markets have been tainted with many issues and problems as discussed in the previous sections, the trend recently has been towards a more restrictive approach to offsets or towards a focus on domestic projects rather than international ones.<sup>177</sup>

According to the International Carbon Action Partnership (ICAP), the ETSs in the UK, Switzerland, the EU, New Zealand and Germany do not allow the use of offsets to meet an entity's obligation in emission reduction.<sup>178</sup> However, New Zealand's ETS may readmit international offsets as early as 2021.<sup>179</sup> For other ETSs, the shares of compliance obligations which can be met using offsets are: Republic of Korea (5%), China (5%), Regional Greenhouse Gas

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<sup>174</sup> In Malaysia, carbon offset credits can come from the international carbon market and also the national REDD-Plus Finance Framework. See more here: <https://www.kasa.gov.my/resources/alam-sekitar/National-Guidance-on-Voluntary-Carbon-Market-Mechanisms.pdf> and <https://redd.ketsa.gov.my/redd-plus-finance-framework/>.

<sup>175</sup> International Carbon Action Partnership (ICAP), "ICAP ETS Briefs," June 2021, <https://icapcarbonaction.com/en/publications/icap-ets-briefs>.

<sup>176</sup> International Carbon Action Partnership (ICAP), "ICAP ETS Briefs," op. cit.

<sup>177</sup> International Carbon Action Partnership (ICAP), "ICAP ETS Briefs," op. cit.

<sup>178</sup> ICAP, *Emissions Trading Worldwide: International Carbon Action Partnership (ICAP) Status Report 2022*, op. cit.

<sup>179</sup> International Carbon Action Partnership (ICAP), "ICAP ETS Briefs," op. cit.

Initiative (RGGI)<sup>180</sup> (3.3%), Quebec (8%) and California (4%).<sup>181</sup> Figure 7 shows that most, if not all, of the offsets allowed in existing ETSs are from domestic projects. These are mostly forest-based offset projects.<sup>182</sup>



### OFFSET PROGRAMS AROUND THE WORLD

- <sup>1</sup> California and Québec allow offsets mutually sourced from linked jurisdictions
- <sup>2</sup> The Swiss and EU ETS no longer use offsets from 2021
- <sup>3</sup> New Zealand may readmit international offsets from high integrity sources as early as 2021
- <sup>4</sup> Korea allows domestic credits as well as international CDM credits developed by Korean companies
- <sup>5</sup> Nova Scotia's cap-and-trade legislation includes provisions for an offset program, however as of 2020 an offset program it is not yet operational

Figure 7: Offset programs around the world (Source: International Carbon Action Partnership, ETS Brief #7, June 2021, [https://icapcarbonaction.com/system/files/document/20\\_icap\\_briefs-7\\_updated-2021.pdf](https://icapcarbonaction.com/system/files/document/20_icap_briefs-7_updated-2021.pdf))

<sup>180</sup> The RGGI is a cooperative, market-based effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and Virginia in the US to cap and reduce CO<sub>2</sub> emissions from the power sector. It represents the first cap-and-invest regional initiative implemented in the US. See more here: <https://www.rggi.org/>.

<sup>181</sup> ICAP, *Emissions Trading Worldwide: International Carbon Action Partnership (ICAP) Status Report 2022*, op. cit.

<sup>182</sup> ICAP, *Emissions Trading Worldwide: International Carbon Action Partnership (ICAP) Status Report 2022*, op. cit.



In China, the offset mechanism is known as the China Certified Emission Reduction (CCER) system. In 2021, the ETS-covered entities are allowed to offset up to 5% of their annual verified emissions for compliance purposes, with no restrictions on project type or vintage.<sup>183</sup>

### ***3.6.3 A complex set of governance challenges***

Apart from their fundamental flaws, carbon markets also pose considerable challenges when it comes to governance. As discussed in the previous section, the intangible nature of carbon, the transfer of large quantities almost instantly and inelastic supply<sup>184</sup> make carbon markets vulnerable to price volatility, financial instability and criminal activity.

The voluntary carbon markets are at risk of exploitation by criminals not just due to the large amounts of money invested, the immaturity of the regulations and the lack of oversight and transparency,<sup>185</sup> but also because of fundamental conceptual issues, including the requirement of “additionality”.

As for ETSs, they are also exposed to rent-seeking behaviour at various stages of implementation; in fact, ETSs are arguably more exposed to lobbying due to the complexity of this policy approach and its methodology.<sup>186</sup> For example, the points of influence from stakeholders include the design of an ETS to increase flexibility, maximise rents, and weaken compliance oversight and penalty rules.<sup>187</sup> BP and Shell were reported to be among the early actors to influence the policy setting for emission trading in the UK and EU.<sup>188</sup> Unlike carbon taxes (which will be discussed in the next chapter), cap-and-trade is preferred by the private sector because of the flexibilities and free allocations.

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<sup>183</sup> ICAP, *Emissions Trading Worldwide: International Carbon Action Partnership (ICAP) Status Report 2022*, op. cit.

<sup>184</sup> The supply of carbon credits is considered to be largely inelastic, a market situation in which a change (either increase or decrease) in the price of carbon credits does not quite produce a similar change in supply (i.e., carbon credit projects). This is because carbon credit projects are based more on political decisions than market signals. See more here: <https://openknowledge.worldbank.org/handle/10986/37213>.

<sup>185</sup> International Criminal Police Organization (INTERPOL), op. cit.

<sup>186</sup> Partnership for Market Readiness and International Carbon Action Partnership, “Governance of Emissions Trading Systems” (Washington, DC: World Bank, 2022), <https://openknowledge.worldbank.org/handle/10986/37213>.

<sup>187</sup> Partnership for Market Readiness and International Carbon Action Partnership, op. cit.

<sup>188</sup> Gilbertson, op. cit.

According to carbon pricing advocates, the level of the carbon price is key if market-based climate policies are to achieve their objective of emission reductions. An empirical study of 167 national and 95 subnational jurisdictions cited in the “Governance of Emissions Trading Systems” report (March 2022) finds that well-governed institutions and corruption control are among the key governance indicators that determine the level of the carbon price, which in turn affects the efficiency of the climate policy in achieving a country’s nationally determined contributions (NDCs<sup>189</sup>).<sup>190</sup>

In light of this, proper governance of carbon pricing in Malaysia will require that continued concerns over corruption, as indicated by the slip in the country’s Corruption Perception Index score (from 48 points in 2021 to 47 points in 2022),<sup>191</sup> be addressed.

Stringent regulation will also be needed to ensure a well-governed ETS, while at the same time making sure that this does not unduly increase the administrative burden and thereby impose higher transaction costs or even deter market participation.<sup>192</sup>

In terms of the legal basis for an ETS, higher-ranking norms enjoy greater resilience against judicial review as well as amendment, suspension or annulment following political changes, but they are also more cumbersome to adopt or adjust.<sup>193</sup> According to the “Governance of Emissions Trading Systems” report, “That high level of formality has helped the EU ETS withstand a number of legal challenges, in large part because the legislative process that preceded its introduction and major reforms already necessitated building consensus across diverse interests and stakeholder constituencies

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<sup>189</sup> Nationally determined contributions (NDCs) set out the efforts by each country to reduce national emissions and adapt to the impacts of climate change, under the UNFCCC Paris Agreement. The Paris Agreement (Article 4, paragraph 2) requires each Party to prepare, communicate and maintain successive NDCs that it intends to achieve. See here: <https://unfccc.int/ndc-information/nationally-determined-contributions-ndcs>.

<sup>190</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>191</sup> “2022 Corruption Perception Index Reveals Neglect of Anti-Corruption Efforts in Asia Pacific,” Transparency.org, January 31, 2023, <https://www.transparency.org/en/press/2022-corruption-perceptions-index-neglect-anti-corruption-efforts-asia-pacific>.

<sup>192</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>193</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

to ensure passage. At the same time, the formality of the legal basis can also make it harder to react swiftly to system shocks, as exemplified by the long lead time of measures to address an allowance supply imbalance that began in the wake of the economic and financial crisis of 2009: nearly five years passed between that crisis and the adoption of legislation on the Market Stability Reserve (MSR)<sup>194</sup> designed to address the allowance supply overhang.”<sup>195</sup>

Many of the current ETSs had their basis in amendments to existing climate or environmental laws, including the ETSs in New Zealand, Kazakhstan and Nova Scotia.<sup>196</sup> For China, the State Council is promulgating new high-level legislation to replace the ministry-level decree currently in place.<sup>197</sup>

With regard to the legal nature of emission units, how these units are defined and treated under the law has a number of consequences.<sup>198</sup> These include: (a) whether the holders of emission units can acquire genuine ownership of the units, along with the rights that convey with property, or only enjoy temporary possession; (b) whether emission units are classified as financial instruments and thus fall within the remit of financial market rules; (c) whether and when emission units are taxed, and on what basis; (d) whether emission units can serve as collateral or security for a loan; and (e) how emission units are treated in the case of insolvency of their holder.<sup>199</sup>

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<sup>194</sup> The MSR is a rule-based mechanism for steering the amount of circulating allowances by withdrawing and storing them in a reserve when the number of excess allowances exceeds an upper limit. Conversely, allowances are returned to the market when the number of excess allowances falls below a lower limit. The EU ETS introduced the MSR in 2019 as a measure to address the issue of low CO<sub>2</sub> prices as a consequence of large amounts of excess allowances. For more information, see here: <https://www.intereconomics.eu/contents/year/2016/number/2/article/reforming-the-eu-emissions-trading-system-an-alternative-to-the-market-stability-reserve.html>.

<sup>195</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>196</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>197</sup> ICAP, *Emissions Trading Worldwide: International Carbon Action Partnership (ICAP) Status Report 2022*, *op. cit.*

<sup>198</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>199</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

According to the “Governance of Emissions Trading Systems” report, “In California, for instance, an emission allowance is defined as ‘a limited tradable authorization to emit up to one metric ton of CO<sub>2</sub>e [carbon dioxide equivalent]’<sup>200</sup> and ‘does not constitute property or a property right’ .... In the statement of reasons for this provision, CARB [California Air Resources Board] declared that it ‘needs broad authority to limit or terminate the allowances to ensure that, in the event of any violations, fraud, or other malfeasance in the conduct of the allowance market, it can be immediately addressed’ .... In the EU ETS, by contrast, some Member States treat allowances as intangible property, while others consider them administrative or ‘sui generis’ rights that afford their holders fewer privileges than full property. Likewise, different jurisdictions apply different rules on how allowances are valued in the financial accounts of holders, with some requiring that they be valued at their purchase price and others at fair market value, substantially affecting the taxable basis when allowances are sold.”<sup>201</sup>

Risks in the carbon market such as value-added tax (VAT) fraud, phishing attempts on a national registry, and a series of cyber-thefts of emission units were encountered early on in the EU ETS.<sup>202</sup> The EU Agency for Law Enforcement Cooperation (Europol) first reported in 2009 that carbon credit fraud caused more than 5 billion euros in damage for European taxpayers<sup>203</sup> and further operations were carried out across Europe in 2010 against the criminal networks involved in such fraud.<sup>204</sup> As the “Governance of Emissions Trading Systems” report admitted, “Although the technical and regulatory loopholes that enabled these incidents were promptly rectified, they illustrate the stakes at play in ETS governance.”<sup>205</sup>

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<sup>200</sup> Carbon dioxide equivalent or CO<sub>2</sub>e means the number of metric tons of CO<sub>2</sub> emissions with the same global warming potential as one metric ton of another greenhouse gas.

<sup>201</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>202</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

<sup>203</sup> Europol, “Carbon Credit Fraud Causes More than 5 Billion Euros Damage for European Taxpayer,” Europol, December 9, 2009, <https://www.europol.europa.eu/media-press/newsroom/news/carbon-credit-fraud-causes-more-5-billion-euros-damage-for-european-taxpayer>.

<sup>204</sup> Europol, “Further Investigations into VAT Fraud Linked to the Carbon Emissions Trading System,” Europol, December 28, 2010, <https://www.europol.europa.eu/media-press/newsroom/news/further-investigations-vat-fraud-linked-to-carbon-emissions-trading-system>.

<sup>205</sup> Partnership for Market Readiness and International Carbon Action Partnership, *op. cit.*

### ***3.6.4 Article 6 of the Paris Agreement attempts to fix the fundamentally flawed carbon market concept but ends up with more complex rules***

Article 6 of the Paris Agreement outlines three ways in which countries can pursue voluntary cooperation in the implementation of their NDCs to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development. These include the market-based approaches or carbon trading under Article 6.2 and Article 6.4.<sup>206</sup> In general, Article 6.2 allows trading between countries while Article 6.4 establishes a global mechanism to trade credits from emissions reductions generated through specific projects. However, the attempt under Article 6 to fix the fundamentally flawed carbon market concept has led to a set of complex rules, again underlining the governance challenges around the carbon market regime.

The original concept of offsets will only lead to a zero-sum game; one tonne of carbon dioxide emitted, say from a developed country, is compensated by one tonne of carbon dioxide reduced in a developing country. Given that offsets should no longer be acceptable due to the urgent need for deep emission reduction, the concept of Overall Mitigation in Global Emissions (OMGE) has been introduced with the idea that a portion of the emission reduction credits resulting from an activity credited under the Article 6.4 mechanism is set aside and not used by any country to meet its NDC. The aggregated unused emission reduction credits are supposed to address the zero-sum problem. To deliver the OMGE, Article 6.4 requires activity participants to undertake a mandatory cancellation of a minimum of 2% of issued Article 6.4 emission reductions (known as A6.4ERs).

Another concern with the international carbon offset markets is the risk of seller countries adopting lower NDC targets and selling emission reductions for revenue instead of using them towards meeting their own target. To address this, Article 6.4 introduced an approval and authorisation framework and corresponding adjustment. The seller country needs to approve and confirm that the A6.4ERs activity will foster sustainable development and explain

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<sup>206</sup> See here for the text of the Paris Agreement: [https://unfccc.int/files/meetings/paris\\_nov\\_2015/application/pdf/paris\\_agreement\\_english\\_.pdf](https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf).

how the activity relates to the implementation of its NDC. It will also need to authorise A6.4ERs issued for an activity for use towards meeting its NDC. The authorised A6.4ERs will need to undertake corresponding adjustment to avoid double-counting within the NDCs.

When corresponding adjustment is applied, the sold carbon credits will need to be deducted from the selling country before they can be counted in the buying country's NDC. For example, if Malaysia wants to sell 100 carbon credits to Country A under Article 6.4, after corresponding adjustment, Malaysia's GHG emissions will show an increase of 100 tons compared to pre-transaction, while Country A's emissions are reduced to help meet its NDC.

There will be risks of overselling and hence the risk that developing countries will not meet their own NDC targets. While the Article 6.4 mechanism methodologies aim to encourage ambition over time, it could be harder or more expensive for developing countries to meet the increased ambition. Further, the process and timing for the authorisation of credits is one of the key issues to be deliberated further this year at the 2023 Conference of the Parties to the UNFCCC (COP28). Developing countries are calling for flexibility on authorisation, including revisions or revocation of authorisation, while the developed countries are against such flexibility on the grounds that it would undermine market confidence. If developing countries are not allowed to revise or revoke authorisation, this will trap the developing countries even further and put them in a more difficult position.

The authorisation process will also introduce another group of A6.4ERs that are not authorised, and this was heavily discussed at COP27 in 2022. While the final COP27 decision text provided a definition for the non-authorised A6.4ERs and referred to them as "mitigation contribution A6.4ERs", the interface between the "mitigation contribution A6.4ERs" and the voluntary carbon markets remains unclear. The fact that the decision text is silent on the need for corresponding adjustments has sparked concerns from NGOs on the considerable risk of double-counting when "mitigation contribution A6.4ERs" are traded in the voluntary carbon markets. This risk emerges when companies frame their purchase of the "mitigation contribution A6.4ERs" as offset claims and when the host country claims these in their emission reduction efforts.

The Article 6 attempts to fix the conceptual issues in the carbon markets have thus only given rise to more complex rules and, consequently, higher transaction costs for countries. This may or may not push the seller countries to the VCM, which may be seen as an easier option for them. However, as noted above, the VCM, which does not set a cap on the pollution level, is plagued with fundamental shortcomings.

# 4

## The Carbon Tax Is Not a Better Alternative

A CARBON tax is a market-based instrument that imposes fixed prices on polluters in order to reduce or eliminate environmental externalities. More precisely, it is defined as a fixed charge or fees charged on the carbon content of fossil fuel supply at the point of processing or refining coal, petroleum products and natural gas, measured in metric tons of carbon dioxide equivalent (tCO<sub>2</sub>e) of a product or process.<sup>207</sup>

Both cap-and-trade and the carbon tax are market-based policies with the same objective to achieve an efficient level of emission reduction at a minimum cost. While cap-and-trade regulates the quantity of carbon emissions, the carbon tax is a policy approach that regulates the prices. They also share a few similarities such as encouraging technological innovation, generating revenues (though in different ways) and facing difficulties in setting the “right” tax rate or “right” cap.

A 2022 study by a Malaysian academic presented the carbon tax as the most appropriate carbon pricing mechanism for developing countries and strategies to design an effective policy.<sup>208</sup> According to the study, the most important factors favouring carbon taxes over cap-and-trade have been price stability and low administrative costs.<sup>209</sup>

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<sup>207</sup> Izlawanie Muhammad, “Carbon Tax as the Most Appropriate Carbon Pricing Mechanism for Developing Countries and Strategies to Design an Effective Policy,” *AIMS Environmental Science* 9, no. 2 (2022): 145-68, <https://doi.org/10.3934/environsci.20220012>.

<sup>208</sup> Izlawanie, op. cit.

<sup>209</sup> Izlawanie, op. cit.



Unlike cap-and-trade, a carbon tax does not require a complex monitoring, reporting and verification system.<sup>210</sup> Hence, the administrative/transaction costs are generally low without a need for new administrative systems and can be incorporated into the existing tax administration.<sup>211</sup> While levying new taxes is often claimed to be politically challenging, it is also seen as more transparent to the public, more straightforward and easier to administer.

However, the carbon tax option is also not without its critics for leaving it to the market to determine the final level of abatement.

#### 4.1 Critiques and lessons from other countries

Carbon tax advocates often argue that a tax might someday make fossil fuel use so expensive as to move the markets towards renewable energy; or that, in any case, even if a tax cannot achieve this, it will surely be better than nothing, or at least better than other market-based mechanisms like carbon trading.<sup>212</sup>

However, according to Tamra Gilbertson's November 2017 research, "Historically speaking, taxes have never achieved social transformations of the magnitude required by the climate crisis."<sup>213</sup> The role of taxes is limited to making smaller adjustments that help stabilise capital accumulation in particular contexts. Businesses have many options to deal with a tax and the consequent increase in cost.<sup>214</sup> One obvious example is that they can pass on the cost by raising the price of their product so that it is the consumer who in effect picks up the tax bill.<sup>215</sup>

Moreover, businesses can take advantage of tax breaks and subsidies in order to offset any inconvenient tax.<sup>216</sup> Globally, fossil fuel subsidies were \$5.9

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<sup>210</sup> Joseph E. Aldy and Robert N. Stavins, "The Promise and Problems of Pricing Carbon: Theory and Experience," *The Journal of Environment & Development* 21, no. 2 (June 2012): 152-80, <https://doi.org/10.1177/1070496512442508>.

<sup>211</sup> Izlawanie, op. cit.

<sup>212</sup> Gilbertson, op. cit.

<sup>213</sup> Gilbertson, op. cit.

<sup>214</sup> Gilbertson, op. cit.

<sup>215</sup> Gilbertson, op. cit.

<sup>216</sup> Gilbertson, op. cit.

trillion in 2020 or about 6.8% of GDP, and are expected to rise to 7.4% of GDP in 2025.<sup>217</sup> Therefore, even when carbon is priced, subsidies and tax breaks to fossil fuel companies can cancel this out or even result in a negative carbon price, thereby reducing the cost of externalities (the social impacts of fossil fuel development or the social cost of carbon dioxide) that should be borne by the polluters.<sup>218</sup> Hence, it will be meaningless to discuss carbon taxes without addressing fossil fuel subsidies.

The key to a carbon tax is to control the prices of carbon emission and let the market determine the quantity of emission reduction. However, in practice, setting tax rates is a political process.<sup>219</sup> For example, in Chile, the government did not utilise the recommended social cost of carbon (SCC) to determine its tax rate due to lack of agreement and instead relied on global carbon pricing as a proxy, which resulted in too low a tax that fell short of the OECD's best practice recommendation to optimise the effect of carbon taxes.<sup>220</sup>

It is also hard to predict how companies will respond to the change in economic incentive brought about by a carbon tax; thus, such a tax cannot guarantee that we can achieve a certain level of emission reduction. The effectiveness of a carbon pricing policy is measured by its ability to reduce carbon emissions. However, a study states that there is no emissions data for carbon taxes because taxpayers are not required to report the associated carbon dioxide emissions to policymakers.<sup>221</sup> Most studies use econometric models and estimation methods to estimate carbon abatement.<sup>222</sup>

In Sweden, one of the first countries in the world to introduce a carbon tax back in 1991, despite its high rate, the carbon tax has not achieved the targeted emissions reduction due to the exemption of major polluters such as steel

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<sup>217</sup> Ian W.H. Parry, Simon Black, and Nate Vernon, "Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies," accessed September 25, 2022, <https://www.imf.org/en/Publications/WP/Issues/2021/09/23/Still-Not-Getting-Energy-Prices-Right-A-Global-and-Country-Update-of-Fossil-Fuel-Subsidies-466004>.

<sup>218</sup> Gilbertson, op. cit.

<sup>219</sup> Kai Schlegelmilch et al., "Environmental Tax Reform in Developing, Emerging and Transition Economies," Research Report (Studies, 2016), <https://www.econstor.eu/handle/10419/199218>.

<sup>220</sup> Izlawanie, op. cit.

<sup>221</sup> Izlawanie, op. cit.

<sup>222</sup> Izlawanie, op. cit.

manufacturers from the tax to protect their international competitiveness.<sup>223</sup> Developed countries that implement a domestic carbon tax may also seek to protect the international competitiveness of their domestic industries by introducing a carbon border adjustment mechanism (a mechanism to equalise the tax burden on imported and local goods). As will be discussed further in Chapter 5, this approach is a problematic one.

Carbon taxes have also been used as a transition to carbon trading schemes. As highlighted by Gilbertson (November 2017), “It is worth noting that carbon taxes can help set up infrastructure that can later usher in the very carbon trading schemes to which taxes have often been proposed as a supposed alternative. This has happened in Mexico, Colombia, Chile, and Australia, where an emissions trading scheme was the explicit long-term goal of the government’s short-lived carbon taxation program. Indeed, the World Bank openly sees carbon taxes and carbon trading as linked in this way.”<sup>224</sup>

However, in a real world without perfect information, both cap-and-trade and carbon taxes share the same challenge in setting the “right” tax rate or “right” cap, depending on availability and accuracy of the information received by the government. As mentioned above, it is almost impossible for the carbon pricing to reflect the real and full social cost of carbon due to scientific uncertainty, dynamic uncertainty and strategic uncertainty.

Climate justice groups have called out: “Carbon taxes will always be low, will always be evaded, do not cut pollution to the degree needed, and are greenwash.”<sup>225</sup>

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<sup>223</sup> Shuting Pomerleau, “What Can We Learn from Sweden’s Carbon Tax?,” Niskanen Center, October 29, 2020, <https://www.niskanencenter.org/what-can-we-learn-from-swedens-carbon-tax/>.

<sup>224</sup> Gilbertson, *op. cit.*

<sup>225</sup> Gilbertson, *op. cit.*

# 5

## Real Solutions: Beyond Carbon Markets and Carbon Taxes

GIVEN that the goal of this memorandum is to add a critical perspective to the current carbon pricing policy discourse, this chapter outlines three broad recommendations as far as carbon markets and policies are concerned. Any discussion of carbon pricing policy should be part of a broader policy discourse or national climate strategy towards climate-resilient development<sup>226</sup> and a just transition.

### 5.1 Traditional regulation can be more effective in reducing emissions

The discussion above has examined at length the flaws in market-based policies that seek to use economic incentives to change the behaviour of the targeted actors to reduce carbon emissions. However, there is a broad range of other policy instruments that can be used to cut emissions.

Traditional regulation or command-and-control policies are regulatory approaches that set: (a) technology standards that dictate specific pollution abatement technologies; (b) performance standards that define maximum permissible emission levels from certain activities/sectors; and (c) product standards that specify characteristics of high-emission products. Non-compliant actors will face penalties.

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<sup>226</sup> According to the 2022 IPCC Working Group II report, “Climate resilient development integrates adaptation measures and their enabling conditions with mitigation to advance sustainable development for all. Climate resilient development involves questions of equity and system transitions in land, ocean and ecosystems; urban and infrastructure; energy; industry; and society and includes adaptations for human, ecosystem and planetary health.”

The advantage of technology standards or any other regulatory policy is that mandating installation of specific pollution abatement technologies, for example, can be more straightforward than calculating emissions per firm and potentially provide more certainty in the level of emission reduction that will be achieved compared with economic incentives.

The main argument for market-based mechanisms such as carbon pricing is that they are more cost-effective in reducing greenhouse gases than regulations. However, a comparison of the first US sulfur dioxide emission trading scheme in the 1990s with regulation-based national SO<sub>2</sub> reduction programmes in the EU and Japan, highlights the shortcomings in the US scheme.

Many regard the US SO<sub>2</sub> trading programme as a success story which achieved 29% reduction in SO<sub>2</sub> emissions in the 1990-2000 period. However, when this result is compared with the 61% reduction achieved in the EU, where Germany managed to cut public power plant sulfur emissions by 90% from 1982 to 1998, mainly relying on traditional regulatory policies, it challenges the mainstream narrative about the effectiveness of carbon pricing policies.<sup>227</sup>

Moreover, according to Gilbertson, “What required 23 years in the US with a trading program, Japan managed to accomplish in 10 years and China in 3 years with direct regulation.”<sup>228</sup> Furthermore, the US Clean Air Act was already set up to phase out SO<sub>2</sub> through traditional regulation and the reduction of SO<sub>2</sub> was almost entirely the result of these policies.

As such, the Malaysian government should take a step back and explore the full potential of command-and-control policies in its overall climate strategies and in ensuring a just and equitable transition towards environmental sustainability.

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<sup>227</sup> Gilbertson, *op. cit.*

<sup>228</sup> Gilbertson, *op. cit.*

## 5.2 Reject unilateral imposition of carbon border adjustment mechanism instead of using it to justify domestic carbon pricing policy

A carbon border adjustment mechanism (CBAM) is an additional tax, duty or fee, such as the purchase of domestic carbon credits or other forms of emission allowances, as a condition of entry into a country's market; or other measures imposed on imported goods at the border based on the imputed carbon content associated with the processes and methods used to produce such goods.<sup>229</sup>

The European Commission (EC) announced a proposal to implement a CBAM on energy-intensive imports in July 2021.<sup>230</sup> The CBAM would initially apply to five sectors: electricity, iron and steel, fertilisers, aluminium and cement.<sup>231</sup> The United States<sup>232</sup> and Canada,<sup>233</sup> both individually and jointly,<sup>234</sup> have also been discussing the potential use of CBAMs as part of “climate change action”.

The argument for CBAMs is that they would help prevent “carbon leakage” and would push countries (primarily developing countries) wishing to export goods to change their production processes and methods to reduce the carbon content of their exported products.<sup>235</sup> Carbon leakage is the relocation of

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<sup>229</sup> Vicente Paolo Yu III, *Green Deals and Implications for the Global South*, Environment & Development Series No. 20 (Penang, Malaysia: Third World Network, 2021), <https://www.twn.my/title/end/end20.htm>.

<sup>230</sup> Yann Duval et al., “Implications of the EU’s Carbon Border Adjustment Mechanism for Commonwealth Members in the Asia-Pacific Region,” Economic and Social Commission for Asia and the Pacific (ESCAP), January 27, 2022, <https://www.unescap.org/blog/implications-eus-carbon-border-adjustment-mechanism-commonwealth-members-asia-pacific-region>.

<sup>231</sup> Duval et al., op. cit.

<sup>232</sup> Reuters and David Lawder, “Biden Administration to Consider Carbon Border Tax as Part of Trade Agenda – USTR,” March 2, 2021, <https://www.reuters.com/business/environment/biden-administration-consider-carbon-border-tax-part-trade-agenda-ustr-2021-03-01/>.

<sup>233</sup> Kait Bolongaro, “Canada Says It’s Open to Carbon Tariffs Amid Global Climate Push,” *Bloomberg News Financial Post*, February 12, 2021, <https://financialpost.com/pmn/business-pmn/canada-says-its-open-to-carbon-tariffs-amid-global-climate-push>.

<sup>234</sup> Theophilos Argitis, Kait Bolongaro, and Derek Declout, “Biden-Trudeau Climate Plan May Target Polluting Trade Rivals,” *Bloomberg.com*, February 24, 2021, <https://www.bloomberg.com/news/articles/2021-02-24/biden-trudeau-climate-plan-may-target-polluting-trade-rivals>.

<sup>235</sup> Yu, op. cit.

carbon-intensive industries from countries with stringent climate-change-related rules such as GHG emission restrictions (leading to lower emissions) to countries with less stringent rules or without such rules (leading to increased emissions or no net decrease in such emissions).<sup>236</sup>

Moreover, developed countries see the CBAM as a way to address issues relating to the perceived competitive disadvantage among their industries or companies which have to incur additional cost to address climate concerns, as compared with competing industries in developing countries without similar climate change rules.

Another stated aim of the EU's proposed CBAM is that "the measure could also encourage partner countries to adopt carbon pricing that tests the prediction of a Brussels effect".<sup>237,238</sup> This is sought to be done by allowing exporters to the EU to apply for possible exemptions for qualifying products from countries that implement carbon pricing equivalent to the EU ETS from 2026 onwards.

However, many developing countries are strongly opposed to such "green" trade measures as they can be easily misused for unilateral trade protectionism and penalise developing countries that do not have adequate financial resources or access to low-emission technologies. As Martin Khor has highlighted, "these measures would in effect be to punish developing countries for being less developed. They face barriers such as Intellectual Property

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<sup>236</sup> "Carbon leakage" is a term often used in discussions in describing how, when industries move from a country that has emission caps (usually taken to be a developed country) to a country that does not have caps (usually taken to be a developing country), there may be no significant change in overall greenhouse gas emissions, as the products will still be produced and exported to the developed country. However, the developed country's emissions will go down as the associated emissions will now occur outside its borders in a developing country. See more from Yu, *op. cit.*

<sup>237</sup> The Brussels effect refers to how the EU intends to remain an influential superpower as the world's regulator by promulgating regulations/global standards that shape the international business environment, elevating standards worldwide, and leading to a notable Europeanisation of many important aspects of global commerce extending the EU's influence long into the future. See here: <https://www.brusselseffect.com/>.

<sup>238</sup> European Parliamentary Research Service, "EU Carbon Border Adjustment Mechanism: Implications for Climate and Competitiveness," June 2023, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698889/EPRS\\_BRI\(2022\)698889\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698889/EPRS_BRI(2022)698889_EN.pdf).

Rights (IPR) (owned mainly by rich countries' companies), lack of technology cooperation, and little funds, that prevent them from having low-emission industrial production".<sup>239</sup>

A 2021 report by the United Nations Conference on Trade and Development (UNCTAD) modelling the potential effects of a CBAM in the EU concludes that the impact of the CBAM on global emission reduction would be limited. It also predicts that the introduction of a CBAM would result in declines in exports in developing countries in favour of developed countries, which tend to have less carbon-intensive production processes.<sup>240</sup> According to the report, if the EU's CBAM is implemented with a \$44 per tonne carbon tax, developed countries would gain \$2.5 billion while developing countries' incomes would fall by \$5.9 billion.<sup>241</sup>

Indeed, CBAMs have faced strong scrutiny and such measures are arguably inconsistent with the principle of CBDR and Article 3.5 of the UNFCCC as well as World Trade Organization (WTO) rules.<sup>242</sup> A working paper by Khazanah Research Institute (KRI) (November 2022) called out the CBAM as a form of climate injustice that has a similar effect to developed countries' trade protectionism by "kicking away the ladder".<sup>243</sup> The working paper suggested that some of the countries affected by a CBAM, like China, could bring a case to the WTO's Appellate Body and that Malaysia could either do the same or benefit from the resolution of another country's case.<sup>244</sup>

In fact, D. Ravi Kanth reported that "India's proposal for addressing growing environmental measures [such as CBAMs] as protectionist non-tariff measures has apparently galvanized developing and least-developed countries

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<sup>239</sup> Martin Khor, "The Rise of 'Climate Protectionism'", and "Threat to Block South's Exports on Climate Grounds," *South Bulletin*, no. 40 (September 10, 2009): 1-3, [https://www.dropbox.com/sh/nk3hcif2c9fnyq3/AAD5eVI8dP\\_RGD4ndJlbd\\_Goa/SB%2040\\_The%20Rise%20of%20Climate%20Protectionism?dl=0&preview=SB+40.pdf](https://www.dropbox.com/sh/nk3hcif2c9fnyq3/AAD5eVI8dP_RGD4ndJlbd_Goa/SB%2040_The%20Rise%20of%20Climate%20Protectionism?dl=0&preview=SB+40.pdf).

<sup>240</sup> United Nations Conference on Trade and Development (UNCTAD), "A European Union Carbon Border Adjustment Mechanism: Implications for Developing Countries," July 2021, [https://unctad.org/system/files/official-document/osginf2021d2\\_en.pdf](https://unctad.org/system/files/official-document/osginf2021d2_en.pdf).

<sup>241</sup> United Nations Conference on Trade and Development (UNCTAD), *op. cit.*

<sup>242</sup> Yu, *op. cit.*

<sup>243</sup> Yin Shao Loong, "National Climate Strategy: A Balanced Approach," Working Paper 4/22 (Khazanah Research Institute, November 25, 2022).

<sup>244</sup> Yin, *op. cit.*



across Africa, South America, and the Caribbean in a seemingly unprecedented development at the World Trade Organization on 14 March [2023]...”<sup>245</sup>

In any case, multilateral coordination and solidarity among developing countries are key to defending and promoting their mutual interests in multilateral and plurilateral discussions and negotiations in the WTO and elsewhere in rejecting CBAMs to ensure that developing countries are supported in transitioning away from fossil fuel dependency.<sup>246</sup>

### **5.3 Real solutions through strengthening the rights of indigenous peoples and supporting community-based approaches**

Forests play an important role in climate change mitigation and adaptation. For Malaysia, as mentioned earlier, its *Fourth Biennial Update Report (BUR 4)* to the UNFCCC in 2022 reported that the LULUCF (land use, land-use change and forestry) sector played a role in removing approximately 65%<sup>247</sup> of the country’s total greenhouse gas emissions in 2019.<sup>248</sup> Hence, forest conservation should be prioritised and considered as a “strategic development reserve” that would enable Malaysia to meet its climate target.<sup>249</sup>

Evidence shows that indigenous peoples and local communities with strong land tenure security vastly outperform both governments and private landholders in preventing deforestation, conserving biodiversity and producing food sustainably.<sup>250</sup> Below are key recommendations<sup>251</sup> over the use of land in national climate policies:

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<sup>245</sup> D. Ravi Kanth, “WTO: India Galvanizes South over North’s Unilateral Environment Measures,” TWN Info Service on WTO and Trade Issues (Mar23/03) (Third World Network, March 17, 2023), <https://www.twn.my/title2/wto.info/2023/ti230303.htm>.

<sup>246</sup> Yin, op. cit.

<sup>247</sup> Note that the *Third Biennial Update Report (BUR 3)* in 2020 reported that the LULUCF sector played a role in removing approximately 77.4% of the total GHG emissions in Malaysia in 2016.

<sup>248</sup> Ministry of Natural Resources, Environment and Climate Change, Malaysia, *Malaysia: Fourth Biennial Update Report under United Nations Framework Convention on Climate Change*, December 2022, [https://unfccc.int/sites/default/files/resource/MY%20BUR4\\_2022.pdf](https://unfccc.int/sites/default/files/resource/MY%20BUR4_2022.pdf).

<sup>249</sup> Yin, op. cit.

<sup>250</sup> Dooley et al., op. cit.

<sup>251</sup> The recommendations are adapted from *The Land Gap Report 2022* (Dooley et al., op. cit.).

- a) Prioritise the protection of primary ecosystems over tree-planting efforts, since the latter’s mitigation benefits are negligible in the current critical response decade.
- b) Ensure that land-based climate measures build on and strengthen the rights of indigenous peoples.

In order to do so, policy and legal reforms on land, forestry, conservation and other natural resource governance must be undertaken in Peninsular Malaysia, Sabah and Sarawak to align the various policies and statutes at the regional level with the Federal Constitution and judicial decisions on indigenous customary land rights. Below are some of the key reforms recommended in two of SAM’s publications<sup>252</sup> based on decade-long research and advocacy on indigenous customary land rights in Peninsular Malaysia and Sarawak:

- The introduction of a definition of indigenous customary land rights in accordance with the communities’ perspective in the legal system;
- Full recognition that the indigenous customary land rights are more than usufructuary rights – they are a form of a right to property and a right to life that are protected under the Federal Constitution;
- The introduction of a participatory mapping and boundary demarcation process for indigenous customary territories for the purpose of providing the land with some form of a communal reservation status or the issuance of a communal grant that is consistent with community interest and in accordance with the indigenous peoples’ concept of territoriality;
- The introduction of the FPIC process in matters that affect indigenous customary land rights, including but not limited to the extinguishment of the indigenous customary land rights, the

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<sup>252</sup> For further information, please refer to Sahabat Alam Malaysia’s reports: (1) *Encroachment on Orang Asli Customary Land in Peninsular Malaysia: Causes and Solutions* (2016, co-published with Jaringan Kampung Orang Asli Semenanjung Malaysia (JKOASM)) (<https://foe-malaysia.org/articles/encroachment-on-orang-asli-customary-land-in-malaysia-causes-solutions/>); and (2) *The Land We Lost: Native Customary Rights (NCR) and Monoculture Plantations in Sarawak* (2019) (<https://foe-malaysia.org/articles/the-land-we-lost-native-customary-rights-and-monoculture-plantations-in-sarawak/>).

- establishment of production forests and conservation areas and strategies, change in land status and the issuance of resource extractive licences and land development permits within indigenous customary territories; and
- Transparency in the governance and legal structures relating to land, forestry, conservation areas and natural resource extraction activities.
- c) Promote multifunctional strategies, such as agroecology and community-based forestry and natural resource management, that contribute to socioecological resilience:
- Many local communities and indigenous peoples in Malaysia have been undertaking measures that are more climate-resilient, such as conserving biodiversity and sustainably using natural resources.<sup>253</sup> Unlike the monoculture plantation that can be easily wiped out by a single pest or disease, the biodiverse farming system known as agroecology being practised by many communities is more climate-resilient and has both climate mitigation and adaptation attributes.<sup>254</sup>
  - Land to cultivate is key to agroecology.<sup>255</sup> As reported by SAM, new agroecological farmers struggle to secure access to farmland while some farmers and indigenous communities are increasingly being confronted with land grabbing.<sup>256</sup>

Real solutions genuinely reduce greenhouse gas emissions, adapt to the impacts of climate change and address loss and damage caused by climate change while upholding the rights of communities, justice and equity in the process.

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<sup>253</sup> Sahabat Alam Malaysia, “Community Responses and Challenges to the Intersection of Biodiversity and Sustainable Use and Climate Change” (Penang, Malaysia, September 2021), [https://foe-malaysia.org/wp-content/uploads/2021/09/210916-Community-Responses-and-Challenges\\_F.pdf](https://foe-malaysia.org/wp-content/uploads/2021/09/210916-Community-Responses-and-Challenges_F.pdf).

<sup>254</sup> Sahabat Alam Malaysia, “Community Responses and Challenges to the Intersection of Biodiversity and Sustainable Use and Climate Change,” *op. cit.*

<sup>255</sup> Sahabat Alam Malaysia, “Community Responses and Challenges to the Intersection of Biodiversity and Sustainable Use and Climate Change,” *op. cit.*

<sup>256</sup> Sahabat Alam Malaysia, “Community Responses and Challenges to the Intersection of Biodiversity and Sustainable Use and Climate Change,” *op. cit.*

The IPCC Working Group II report highlighted that social justice and equity are critical to climate actions.<sup>257</sup> The most vulnerable communities will be disproportionately affected by climate change despite the fact that they contribute the least to the causes.

Smallholders, subsistence farmers, artisanal fisherfolk and indigenous peoples will suffer complex, localised impacts of climate change and will be disproportionately affected by extreme climate events. Therefore, it is vital to prepare and build the capacity of communities to respond to climate change impacts and support community-based approaches.

Community-driven solutions have to be prioritised and supported in climate policies, instead of corporate-driven false solutions – such as “climate-smart agriculture” or “carbon offsets” in the name of achieving “net zero” emission reductions – that displace indigenous peoples and local communities and undermine their rights to land and natural resources.

### ***5.3.1 Diversify the funding sources for conservation efforts through international climate funds and non-market approaches***

International environmental agreements that Malaysia has signed on to, i.e., the Paris Agreement and the Convention on Biological Diversity (CBD), provide for financial support for developing countries to pursue forest and biodiversity conservation efforts. In the context of the Paris Agreement and the CBD, Malaysia is still categorised as a developing country. Therefore, it should do what it can within its means and national circumstances to seek and receive financial resources to meet its commitments. The status of an upper-middle-income economy as defined by the World Bank should not constrain Malaysia from accessing international climate funds. The international funds available are the Green Climate Fund (GCF), the Adaptation Fund (AF), the Global Environment Facility (GEF) and the Special Climate Change Fund (SCCF).

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<sup>257</sup> IPCC, “Climate Change 2022: Impacts, Adaptation and Vulnerability: Summary for Policymakers,” op. cit.

Seeking international climate funds is consistent with the call in the Twelfth Malaysia Plan (2021-2025) to diversify conservation funds.<sup>258</sup> Together with the various national financial instruments to incentivise forest and biodiversity conservation efforts – including the Ecological Fiscal Transfer (ETF), the National Conservation Trust Fund for Natural Resources, the Forest Development Trust Fund under the state governments in Peninsular Malaysia – international climate funds can add to the pool of funding and diversify the funding sources for conservation efforts in Malaysia.<sup>259</sup>

According to a UNFCCC presentation on climate finance flows to the ASEAN (Association of Southeast Asian Nations) region in October 2019, Malaysia appears to have received much less climate funding as compared with the other ASEAN member states between 2013 and 2017.<sup>260</sup> While we are unable to ascertain the real reasons behind this, one question that begs an answer is: To what extent has the Malaysian government put in efforts in the past to access international funds, apart from the GEF and the GCF?<sup>261</sup>

Due to the urgency of mitigating and adapting to climate change, as well as addressing the loss and damage associated with climate change, it is indisputable that there is a strong need to enhance Malaysia's efforts in seeking international climate funds.<sup>262</sup> Given the federal-state jurisdiction dichotomy and recognising Sabah and Sarawak as having a greater degree of autonomy than other states, the international climate funds provide economic incentives and options for the state governments to keep the forests standing while respecting safeguards, including community rights to land and natural resources.

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<sup>258</sup> Sahabat Alam Malaysia, "The Need to Enhance Malaysia's Efforts in Seeking International Climate Funds," 2022.

<sup>259</sup> Sahabat Alam Malaysia, "The Need to Enhance Malaysia's Efforts in Seeking International Climate Funds," *op. cit.*

<sup>260</sup> Grant A. Kirkman, "Climate Finance Flows" (Technical Workshop on Climate Finance in ASEAN, Quezon City, October 29, 2019), <https://unfccc.int/sites/default/files/resource/Session%201%20Grant%20Kirkman.pdf>.

<sup>261</sup> Sahabat Alam Malaysia, "The Need to Enhance Malaysia's Efforts in Seeking International Climate Funds," *op. cit.*

<sup>262</sup> Sahabat Alam Malaysia, "The Need to Enhance Malaysia's Efforts in Seeking International Climate Funds," *op. cit.*

Moreover, Article 6.8 of the Paris Agreement invites countries to utilise “integrated, holistic and balanced non-market approaches” in achieving their NDCs, including through mitigation, adaptation, finance, technology transfer, and capacity building.<sup>263</sup> The initial focus areas of the work programme on non-market approaches include: (a) adaptation, resilience and sustainability; (b) mitigation measures to address climate change and contribute to sustainable development; and (c) development of clean energy sources.<sup>264</sup>

The inclusion of Article 6.8 non-market approaches in the UNFCCC negotiations was in part a response to the acknowledged failure of the Clean Development Mechanism.<sup>265</sup> The operationalisation of Article 6.8 requires active participation of developing countries, including Malaysia, in the upcoming Conference of the Parties to the UNFCCC.

In any case, Malaysia should optimise and diversify the funding sources for conservation efforts through non-market approaches such as international climate funds.

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<sup>263</sup> United Nations, “Paris Agreement,” 2015, [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf).

<sup>264</sup> UNFCCC, “Decision -/CMA.3: Work Programme under the Framework for Non-Market Approaches Referred to in Article 6, Paragraph 8, of the Paris Agreement,” 2021.

<sup>265</sup> Working Group for Real Solutions, “Real Solutions, Real Zero: How Article 6.8 of the Paris Agreement Can Help Pave the Way to 1.5 Degree Celsius” (Corporate Accountability, n.d.), 8, [https://www.corporateaccountability.org/wp-content/uploads/2019/11/Article-6.8-of-the-Paris-Agreement-A-Non-Market-Approach-to-1\\_5\\_v4\\_FINAL.pdf](https://www.corporateaccountability.org/wp-content/uploads/2019/11/Article-6.8-of-the-Paris-Agreement-A-Non-Market-Approach-to-1_5_v4_FINAL.pdf).

# 6

## Conclusion

THIS memorandum presents a critical assessment of the market-based climate policy options, including the carbon market and the carbon tax, currently being explored by the government of Malaysia.

The document has discussed in depth why the carbon market will not work from many aspects, including unresolvable conceptual issues and unrealistic assumptions. The carbon market also carries significant financial stability risks that need to be looked into. These risks have not materialised so far due to the limited size and lack of real functioning of carbon markets in the past. But with the projected increase in demand by a factor of 15 or more by 2030, there will be an increase in scale and scope of the financial stability risks associated with carbon markets today. All of these present a complex set of governance challenges in carbon trading.

The carbon tax is not a better alternative from the climate justice perspective. The key to a carbon tax is to control the prices of carbon emissions and let the market determine the quantity of emission reduction. However, in practice, setting tax rates is a political process. Further, the role of taxes is limited to making smaller adjustments that help stabilise capital accumulation in particular contexts.

Meanwhile, carbon border adjustment mechanisms can be easily misused for unilateral trade protectionist purposes and penalise developing countries that do not have adequate financial resources or access to low-emission technologies. Coordination and solidarity among developing countries are key to defending and promoting their mutual interests in multilateral and plurilateral discussions and negotiations in the WTO and elsewhere on the CBAM.

Instead of flawed market-based options, there is a broad range of other policy instruments that can be used to support the implementation and achievement of the mitigation goals of the NDCs. The government should optimise the use of command-and-control policies and not rush into setting up carbon trading, especially not the voluntary carbon market.

Forests play an important role in climate change mitigation and adaptation for Malaysia and hence, forest conservation should be prioritised and considered as a “strategic development reserve” that will enable Malaysia to meet its climate target. Malaysia should optimise and diversify the funding sources for conservation efforts through non-market approaches. Recognising the importance of forest conservation for Malaysia and evidence which shows that indigenous peoples and local communities with secure land rights vastly outperform both governments and private landholders in preventing deforestation, conserving biodiversity and producing food sustainably, this memorandum has also outlined three main recommendations on real solutions through strengthening the rights of indigenous peoples and supporting community-based approaches.

We are set to pass 1.5°C and 2°C global warming in the 21st century unless deep reductions in carbon dioxide and other greenhouse gas emissions occur in the coming decades. The IPCC has highlighted that social justice and equity are critical to such urgent actions. However, the carbon market and offsets do not help reduce carbon emissions; rather, they allow polluters to continue polluting and open up the opportunity for a full range of false solutions.

For Malaysia to achieve climate-resilient development, it should prioritise risk reduction or adopt precautionary principles in the development choices that it makes. Carbon markets, as discussed, risk bringing more harm than good. In an era of climate emergency, there is no time to waste. The government can choose to lock in further decades of soaring emissions. Or, it can choose to embrace real solutions that will deliver real action, equity, ambition, and a just and equitable transition.



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# ADDRESSING CLIMATE CHANGE IN MALAYSIA: A CRITICAL PERSPECTIVE ON CARBON PRICING

In order to lower the carbon emissions that lead to global warming, Malaysia is considering the deployment of market-based carbon pricing policies such as carbon trading and a carbon tax. This paper, which is based on a memorandum submitted to the Malaysian government, presents a critical assessment of these policies from a climate justice perspective.

The very basis of the carbon offsets traded in carbon markets – that a reduction or removal of emissions in one place balances out emissions elsewhere – is scientifically unsound and allows for continuing emissions that the planet can ill afford. Offsetting projects can also displace indigenous peoples and local communities, while the carbon markets themselves are vulnerable to financial instability and even criminal activity. A carbon tax meanwhile will likely have only limited impact in cutting emissions, due to a myriad of loopholes, exemptions and political constraints in determining the tax rate.

Instead of these flawed market-based approaches, Malaysia – and other developing countries – is urged to optimise the use of regulatory policies that set product, performance and technology standards for emission reduction. Given the important role they play in climate change mitigation and adaptation, the conservation of forests and biodiversity should be prioritised as well, with financing for these efforts sourced from international climate funds and other non-market approaches.

The underlying need, therefore, is to steer the climate policy discourse away from false solutions towards real action centred on equity and sustainability.

**SAHABAT ALAM MALAYSIA (FRIENDS OF THE EARTH MALAYSIA)** is an independent non-profit national organisation working to ensure that development choices and management of natural resources in Malaysia are sustainable and ecologically sound, guided by the principles of environmental justice.

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ISBN 978-967-0747-50-7



9789670747507