

Carbon Trading through the Lens of Climate Justice



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Why the Climate Justice Perspective is Needed in Evaluating Carbon Trading

The climate crisis cannot be solved merely by reducing global emissions, but it must also be addressed in a just manner. The climate crisis occurs as a result of economic development that prioritizes growth without considering the Earth's limits. Centralized control of resources by a few "elites" drives increasingly uncontrollable patterns of production and consumption, ultimately leading to higher carbon emissions.

The worst impacts of the climate crisis are borne by poor and vulnerable communities. Droughts, hunger, homelessness, and disasters have become their realities. However, many solutions for the climate crisis risk widening the chasm of inequality. This situation can be addressed through climate justice, which is a perspective that emphasizes the connection between sustainable development and human rights to a good and healthy life and environment.

Climate justice stands on four pillars known as H.E.L.P., which comprises human security, ecological debt, land rights, and production-consumption patterns. These four pillars are grounded in three aspects of justice: distributive, procedural, and recognition justices.¹ In order to achieve climate justice, all efforts to reduce emissions and limit global temperature rise to no more than 1.5°C must be carried out democratically, not centralized in the hands of "the elites".

In this edition of MADANI Insight, we discuss carbon trading in the forestry sector from the perspective of climate justice. The forestry sector currently ranks as the largest contributor to greenhouse gas (GHG) emissions in Indonesia. Three main topics are covered: (1) ambitious and tangible emissions reduction, (2) social and environmental integrity, and (3) transparency and accountability in emissions reduction efforts through carbon trading.

Regulatory Framework for Carbon Trading in Indonesia

Carbon trading is one mechanism to put a price on GHG emissions, commonly known as carbon pricing or Carbon Economic Value (CEV). The goal of CEV is simple, which is to price carbon emissions so as to make it more expensive for emitters to release GHG emissions.² In theory, carbon trading can create incentives to reduce emissions. The condition is that the applied carbon price must be high enough to equate to the damage caused and can serve as a disincentive for emitters.

Carbon trading is one of three Carbon Economic Value (CEV) mechanisms recognized in Presidential Regulation No. 98 of 2021. The other two are performance-based payments (result-based payment or RBP) and carbon levies.

Table 1. Carbon Economic Value (CEV) Implementation Mechanisms

Result Based Payment (RBP)	Carbon Trading	Carbon Levies
• There is no transfer of carbon ownership • Acts as a policy incentive to reduce emissions • Payment is made after successful completion	• There is a transfer of carbon ownership • Carried out by buying and selling emission allowances or through offsetting emissions elsewhere • Utilizes the market mechanism	• There is no transfer of carbon ownership • Carried out as an additional obligation of the emitters • Uses tax and non-tax levy instruments by the state

Source: Relevant regulations, compiled by MADANI Berkelanjutan

In carbon trading, parties trade “carbon credits,” which are calculated per ton of carbon (carbon dioxide equivalent). Carbon credits are issued in the form of Emission Reduction Certificates (Sertifikat Pengurangan Emisi – SPE-GRK)³ or the Emissions Upper Limit Technical Approval (Persetujuan Teknis Batas Atas Emisi Pelaku Usaha – PTBAE-PU).⁴ Both of these documents are the physical assets of the carbon market system.⁵ Of the three forms of CEV mechanisms, only carbon trading allows for the transfers of carbon ownerships. This means that when carbon credits from Indonesian forests are sold to private parties and claimed as emissions reduction achievements of another country, Indonesia can no longer count those credits as national emissions reductions because the ownership of the carbon has changed hands.

Carbon trading is considered by its proponents as one of the most cost-effective mechanisms for reducing GHG emissions.⁶ This is because the mechanism operates through market financing and adheres to the principles of supply and demand.⁷ Ultimately, carbon becomes a new commodity, where Indonesia hopes to become a carbon powerhouse.⁸ The government

plans to launch the Indonesian Carbon Exchange in September 2023.⁹

Regarding the RBP mechanism, the Government has received payments for emissions reductions from deforestation and degradation (REDD+) at the national level from the Green Climate Fund (GCF), amounting to 103.8 million USD for the period 2014-2016¹⁰ and 56 million USD from the Government of Norway for emissions reduction during the period 2016-2017.¹¹ At the sub-national level, Indonesia has secured financing commitments from the Forest Carbon Partnership Facility (FCPF) for emissions reduction in East Kalimantan Province, totaling up to 110 million USD, and from the World Bank's BioCarbon Fund program with commitments of up to 70 million USD for emissions reduction in Jambi Province.¹²

Regulations on Forest Carbon Trading Prior to Presidential Regulation 98/2021

Before Indonesia submitted its first Nationally Determined Contribution (NDC) and the Presidential Regulation 98/2021 was issued, Indonesia's forest carbon trading was aimed at compensating or offsetting the GHG emissions of industrialized countries or companies in developed nations. Since 2002, Indonesia's regulatory framework has facilitated forest carbon trading (see Annex I).

The regulatory landscape for carbon trading in Indonesia prior to the Presidential Regulation No. 98/2021 was dynamic due to varying government agencies' attitudes towards carbon trading. The phrase "carbon trading business" briefly appeared in the Government Regulation No. 34 of 2002 and then disappeared. In its successor regulation of the Government Regulation No. 6 of 2007, only service provision for carbon absorption and storage was mentioned. In the Clean Development Mechanism (CDM) under the Kyoto Protocol, carbon trading in the land use and forestry sector was conducted through afforestation and reforestation activities (A/R CDM).¹³

Forest carbon trading began to gain prominence after the adoption of an emissions reduction mechanism for deforestation and forest degradation, known as REDD (now REDD+), following the 13th Conference of Parties (COP13) of the UNFCCC in Bali in 2007. According to CIFOR (2023), REDD+ projects in Indonesia are among the world's largest suppliers of offset credits.¹⁴ Despite being the largest carbon credit supplier and the growing discourse on carbon trading, data on carbon trading transactions remained unavailable. Presidential Regulation 98/2021 then brought more clarity to the rules of carbon trading.

There are three important notes about carbon trading regulations prior to Presidential Regulation 98/2021. First, at that time, Indonesia did not have binding GHG emissions reduction targets, so offsetting carbon overseas was the primary mode. Second, the regulatory framework prior to the issuance of Presidential Regulation 98/2021 treated carbon management solely as part of forest management, lacking explicit guidance on the integrity, credibility, and quality of forest carbon

credits produced. Third, there appeared to be a potential conflict between the RBP mechanism and carbon trading, especially concerning the transfers of carbon unit ownerships.

Regulations on Forest Carbon Trading Subsequent to Presidential Regulation 98/2021

Presidential Regulation 98/2021 regulates two types of carbon trading: carbon credit and carbon offsetting. In carbon credit trading, the tradable object is the permission to emit or emission caps. The government will be the one to set emission caps for businesses. If a business exceeds these allowances, they can purchase emission caps (PTBAE-PU) from other businesses whose emissions are below the set caps. With the government setting emission allowances, a mandatory domestic carbon market is established.¹⁵

Meanwhile, within the offset scheme, Greenhouse Gas Emission Reduction Certificates or SPE-GRK are traded. Businesses or activities without government-established emission caps may lower their emissions and subsequently sell their SPE-GRK to compensate for emissions produced by other businesses or activities. Domestic offsetting can occur within the same sector or across the Nationally Determined Contribution's (NDC) sectors. International carbon offsetting is also permissible.

The guidelines for carbon trading in the forestry sector are stipulated in the Minister of Environment and Forestry Regulation No. 7 of 2023. Entities eligible to engage in carbon trading within the forestry sector are holders of Forest Utilization Business Licenses (Perizinan Berusaha Pemanfaatan Hutan – PBPH), Social Forestry Management Approvals, management rights, and customary law communities, communities with forest tenure rights, and business actors (see Table 4).

The breakdown of sub-sectors and sub-sub-sectors of carbon trading in the forestry sector can be seen in Table 2.

Table 2. Sub-Sectors of Carbon Trading in the Forestry Sector

No.	Sub-Sectors	Sub-Sub-Sectors
1	Forestry Sub-Sector	1. State Forest lands not subject to rights/permits 2. Forest areas with permits/management approvals 3. Areas of Forest Management Rights
2	Mangrove and Peat Sub-Sector	4. Areas of Customary Forests 5. Areas of Private Forests 6. State Forests not in Forest Area

Source: Minister of Environment and Forestry Regulation 7/2023, analyzed by MADANI Berkelanjutan.

Nearly all mitigation actions outlined in Indonesia's FOLU Net Sink 2030 operational plan can be carried out through carbon trading (refer to Table 3). In the forestry sector, carbon trading is dominated by the offset mechanism. On the other hand, emissions trading is confined to peat and mangrove areas, where the government will establish a peatland management quota (see Table 4).

Table 3. Mitigation Actions of the Forestry Sector under FOLU Net Sink 2030 and Carbon Trading

No	Aksi Mitigasi Sektor Kehutanan yang dapat Dilakukan Perdagangan Karbon	Aksi Mitigasi dalam Rencana Operasional Indonesia FOLU Net Sink
1	Deforestation rate reduction on mineral land forests, peatlands, and mangroves	Deforestation rate reduction on mineral land forests,, peatlands, and mangroves
2	Degradation rate reduction of mineral land forests, peatlands, and mangroves	Degradation rate reduction of mineral land forests, peatlands, and mangroves
3	Plantation forest development	Plantation forest development
4	Sustainable forest management	Sustainable forest management
5	Rehabilitation with rotation and non-rotational rehabilitation	Rehabilitation with rotation and non-rotational rehabilitation
6	Peat restoration	Peat restoration
7	Improvement of peat water system	Improvement of peat water system
8	Mangrove rehabilitation	Mangrove rehabilitation
9	Afforestation in ex-mining areas	Afforestation in ex-mining areas
10	Construction of a permanent nursery	-
11	Plant rehabilitation under 5 years	-
12	Biodiversity conservation	Biodiversity conservation
13	Social forestry	<i>(a strategy that supports other action plans)</i>
14	Assistance to customary forests	Development and gazettement of customary forests
15	Introduction of ecosystem replication	Introduction of ecosystem replication
16	Development of green open spaces	Development of green open spaces
17	Eco-riparian	Eco-riparian
18	Supervision and law enforcement to support forest area protection and security	Supervision and law enforcement to support forest area protection and security

Source: Minister of Environment and Forestry Regulation 7/2023, analyzed by MADANI Berkelanjutan

Tabel 4. Carbon Trading Mechanisms in the Forestry Sector Based on the Ministry of Environment and Forestry Regulation 7/2023

No	Locations	Mechanisms	Implementers
a	Permanent Production Forests, Convertible Production Forests, and blocks for the utilization of Protected Forests that are subject to PBPH, Social Forestry Management Approval areas, or management rights areas	<i>Carbon offset</i>	Holders of the PBPH, Social Forestry Management Approvals, or management rights
b	Permanent Production Forests, Convertible Production Forest Areas, and blocks for the utilization of Protected Forests that are not subject to PBPH, Social Forestry Management Approval areas, or management rights areas	<i>Carbon offset</i>	Holders of PBPH, Social Forestry Management Approvals, or management rights (after permits have been obtained)
c	Other Protected Forest area blocks	<i>Carbon offset with consideration to the carbon stock</i>	Not mentioned
d	Peatland and mangrove areas within the Forest Area	<i>Emission trade or carbon offset</i>	Holders of the PBPH, Social Forestry Management Approvals, or management rights
e	Peatland and mangrove areas outside the Forest Area	<i>Emission trade or carbon offset</i>	Not mentioned
f	Conservation Forests	<i>Carbon offset with consideration to the carbon stock</i>	Business actors
g	Customary Forests	<i>Carbon offset</i>	Customary law communities
h	Private Forests	<i>Carbon offset</i>	Communities with land rights
i	State forests not in Forest Areas	<i>Carbon offset</i>	Not mentioned

Source: Minister of Environment and Forestry Regulation 7/ 2023.

Prerequisites for Carbon Trading to Drive Genuine and Ambitious GHG Emissions Reduction

Setting Emissions Reduction Targets in Line with 1.5°C Temperature Increase Limit

To prevent the global temperature from rising above 1.5°C by the end of this century, global emissions must peak no later than 2025, halve by 2030, and reach net zero by the early 2050s.¹⁶ Unfortunately, the current commitments (NDCs) of countries are still projected to lead to an increase in temperatures exceeding 1.5°C, especially when accounting for the many development policies that are not aligned with the NDCs.¹⁷

Therefore, strengthening the ambitions of NDCs in line with the 1.5°C target and aligning domestic policies with climate commitments must be prioritized as prerequisites for carbon trading. Without these measures, carbon trading is likely to become a profit-seeking tool with little impact on emissions reduction.

Equitably Distributing Emissions Reduction Burden among Polluters

Based on the principle of distributive justice and the concept of polluter pays, parties responsible for the largest GHG emissions must take responsibility for addressing climate change. This responsibility extends beyond climate change mitigation efforts to include adaptation and compensation for those who suffer losses and damages due to climate change.¹⁸

Before carbon trading is implemented, the obligation to reduce GHG emissions must be fairly distributed among parties causing those emissions, including businesses. In carbon credit trading, this fairness must be reflected in the strictness of the GHG emissions cap. If the emissions cap is excessively lenient or if an excessive number of PTBAE-PU units are issued, it could result in the “hot air” phenomenon, which poses a risk to the integrity of emission trading.¹⁹

The allocation of PTBAE-PU by the relevant ministers should also be made as transparent as possible to prevent corruption. Instead of granting it directly for free, the allocation of PTBAE-PU through a bidding process can be a more effective and transparent approach.²⁰

Under the carbon offset mechanism, the distribution of emission reduction obligations among businesses in the forestry sector must be clearly regulated. This can be achieved by setting strict emission reduction targets and baselines by the Minister of Environment and Forestry and relevant governors.

Integrity and Quality of Carbon Credits

Numerous instances involving the trading of forest carbon credits in the voluntary carbon market have revealed deficiencies in the environmental and social integrity of the offset scheme (see Table 5). In the absence of a robust environmental and social integrity, carbon offsetting can impede ambitious emissions reduction initiatives and potentially give rise to new instances of injustice.

Tabel 5. Concerns with Forest Carbon Offsetting in the Voluntary Carbon Market

No	Issues	Cases
1	<i>Unrealistic baselines and over-crediting due to inflated assumptions about threats to forests</i>	REDD+ projects developed using Verra's standards overestimated threats to forests by 400% (Cambridge University, 2022) ²¹
		The majority of offset projects developed by the California Air Resources Board (ARB), American Carbon Registry (ACR), Climate Action Reserve (CAR), and Verified Carbon Standard (VCS) established harvesting practice baselines that are much more aggressive than historical practices. ²²
		A carbon project in Kariba, Zimbabwe, which was certified by VCS and utilized the Climate, Community, and Biodiversity Standards (CCB Standards) developed by Verra, overestimated its effectiveness in preventing deforestation by a factor of 14. ²³
2	Double counting	62 million carbon offset credits from 18 REDD+ projects located in Peru, Colombia, and Africa, all certified by Verra, were claimed to be three times more abundant than their actual availability suggested. ²⁴
3	<i>Additionality</i>	REDD+ carbon projects in the Amazon, Brazil (VCS), which generated 5.4 million carbon credits in 2017, does not represent additional deforestation prevention. ²⁵
		Out of 94.9 million carbon credits certified through Verra, only 5.5 million credits represent real GHG emissions reductions. ²⁶
4	Human rights violation	Amnesty International's report found that the Sengwer indigenous community residing in the Embobut Forest, Kenya, were displaced from their homes due to the development of a carbon project aimed at reducing deforestation by the Kenyan Government. ²⁷

Source: Compiled by MADANI Berkelanjutan.

The Presidential Regulation 98/2021 and its associated regulations do not explicitly mention the phrase “environmental and social integrity.” Various aspects of the environmental integrity of carbon credit, such as additionality, reliability, and safeguards, are also not explicitly mentioned.

Additionality

In the carbon trading framework, the credibility of a carbon offset project hinges on the concept of additionality, meaning that the emission reductions it generates would not have happened without the project. Additionality can be examined from at least two perspectives: policy and financial perspectives. From a policy perspective, emissions reductions must result from initiatives that go beyond what is already mandated by existing regulations. From a financial perspective, additionality implies that emissions reduction would be challenging or improbable without the support of carbon financing.

Several mitigation actions in the forestry sector that are mentioned in Minister of Environment and Forestry Regulation 7/2023 lack additionality because they are already considered business obligations (such as post-mining afforestation) or are part of the companies’ business models (such as in cases of plantation forestry, sustainable forest management, and rotation-based rehabilitation). Without strong additionality, carbon offsets may result in even larger emissions releases.

In principle, the highest level of additionality is achieved when a project safeguards natural forests that would otherwise be cleared, especially in regions designated for purposes like plantation forestry, plantations, or mining. This is particularly true when these areas fall outside of High Conservation Value (HCV) areas, which are already under mandatory protection. However, in this scenario, the profits from carbon trading are likely to primarily benefit major players who possess extensive land holdings of natural forests and have the ability to apply for forest utilization permits covering tens of thousands of hectares. As a result, the additionality approach in such a context is susceptible to issues of resource injustice.

In practice, legally protected areas in Indonesia, such as conservation areas and protected forests, are still subject to various threats and significant damage. Therefore, it is crucial to evaluate additionality in terms of whether carbon projects encourage improved law enforcement, the prevention of environmental degradation, and the promotion of long-term restoration and conservation in these areas. Additionally, other factors should undergo rigorous assessment, including the credibility of baselines used and the potential for carbon leakages to other regions.

Many communities make efforts to safeguard and restore areas that are demonstrably under threat despite their legal designations as protected areas. For instance, consider peatland areas delineated on the Indicative Map on the Suspension of the Issuance of New Licenses (Peta Indikatif Penghentian Pemberian Izin Baru – PIPPIB) that have suffered from destruction and protected areas that have experienced encroachments. The active roles of communities in

safeguarding these areas—whether through the legally recognized social forestry program or traditional institutions lacking formal recognition—should be acknowledged and incentivized. Without this, communities will be further marginalized in the carbon trading regime.

In light of these factors, the carbon trading framework should be grounded in the concept of additionality that is based on actual threats, going beyond strict adherence to legal status or criteria. The concept of additionality also requires the consideration of social aspects, future threats, and beneficiaries equality. Furthermore, addressing the deeply ingrained resources inequality is essential within the existing resource governance regime.

Protecting natural forests that fall outside the scope of the moratorium policy, as detailed in PIPPIB, can also contribute to additionality. There are still around 28.7 million hectares of natural forests not covered by PIPPIB, and these are categorized as “secondary natural forests.” Some of these forests have been included in permits or concessions, while others fall within the Indicative Map of Social Forestry Areas (Peta Indikatif Area Perhutanan Sosial – PIAPS) designated for local communities.

Areas with natural forests within PIAPS, particularly those scoring high on the Deforestation Risk Index, can also generate significant additionality, irrespective of their formal status. Social forestry initiatives still face significant financial constraints. As per MADANI Berkelanjutan’s assessment, there are approximately 1.37 million hectares of areas within PIAPS that score high on the Deforestation Risk Index.

Reliability

To uphold the environmental integrity of carbon offset projects, it is crucial to establish conservative emissions reduction baselines. Unfortunately, in the carbon trading of the forestry sector, baseline setting often proves overly lenient, falling short of adhering to the reliability principle.

Indonesia’s carbon trading regulations do not currently include explicit mandates for ensuring reliability. Minister of Environment and Forestry Regulation 21/2022 states that the issuance of SPE-GRK for carbon offsets must adhere to the latest IPCC guidelines, international standards, or Indonesian national standards, and utilize methodologies established by the Directorate General of Climate Change Control of the Ministry of Environment and Forestry, the National Standardization Agency, or those approved by UNFCCC.²⁸ Unfortunately, even the internationally recognized standards widely employed today have not been able to fully guarantee reliability, as illustrated in Table 5.²⁹

Double Counting

Double counting occurs when two or more parties claim the same GHG emission reduction. Presidential Regulation 98/2021 has introduced a measure to prevent double counting through recordkeeping using the National Climate Change Control Registry System (Sistem Registri Nasional Pengendalian Perubahan Iklim – SRN-PPI).³⁰ Additionally, Minister of Environment and Forestry Regulation 21/2022 outlines provisions for harmonization with other NDC mechanisms, such as performance-based payments, to prevent double counting and payments.³¹ As such, SRN-PPI will be the primary tool for preventing double counting.

Limiting Offsets to Unavoidable Residual Emissions

Given the array of issues outlined above, it is imperative to restrict carbon offsetting to unavoidable residual emissions. Residual emissions refer to emissions that remain after emitters have optimally reduced their GHG emissions. Without this limitation, offsetting could create perverse incentives, as emitters might prioritize offsetting over implementing optimal mitigation actions.³²

Presidential Regulation 98/2021 and Minister of Environment and Forestry Regulation 21/2022 emphasize that businesses must undertake mitigation actions before engaging in carbon offsetting. The presidential regulation threatens business actors of carbon offsets with disincentives and administrative sanctions for failing to implement and record climate change mitigation actions.³³ Minister of Environment and Forestry Regulation 7/2023 also requires carbon offset implementers in forest areas to incorporate integrated climate change mitigation action plans into their forest utilization business planning documents.³⁴ This is further emphasized by Minister of Environment and Forestry Decree No. 716 of 2023, which mandates that holders of environmental and forestry business licenses, management approvals, or management right must prepare Climate Change Mitigation Action Plan Document (Dokumen Rancangan Aksi Mitigasi – DRAM) and execute climate change mitigation actions to help attain NDC targets.³⁵

The requirement for businesses to prioritize mitigation actions before engaging in offset activities should be strengthened in the implementation of carbon trading. This rule can be incorporated into the roadmap of carbon trading's sectors and sub-sectors.³⁶

Limiting Cross-Sector Offsetting

In principle, Indonesia's carbon trading regulations allow for cross-sector offsetting.³⁷ Cross-sector carbon offsetting is permissible among NDC sectors and sub-sectors, either directly or via carbon markets, on both domestic and international levels.

Domestic cross-sector offsetting is subject to limitations imposed by the cross-sector carbon

trading quota, which will be established by the relevant ministers.³⁸ The specific size and methodology for calculating the cross-sector carbon trading quota remain undetermined at this time. However, the quota will be established by taking into account the relevant sectors' mitigation targets, the costs of emissions reduction in the sectors involved (abatement costs), and the methodology for verifying climate change mitigation achievements of the sectors in question.³⁹ Meanwhile, international cross-sector offsetting can be undertaken once the sub-sector emissions reduction targets and/or climate change mitigation action plans have been achieved.⁴⁰

The cross-sector carbon trading quota must be established in a strict and transparent manner. Offsetting emissions in the energy sector with emissions reductions in the forestry sector should be avoided for several reasons. One reason is the high risk of impermanence associated with emissions reductions in the forestry sector. Protected forests and lands can be converted at any time due to policy changes or natural factors like disasters. Land disputes with local communities significantly complicate project assessments and can potentially elevate long-term project failure risks.^{41,42} Not to mention, many forest carbon offset projects have been recently considered ineffective in reducing GHG emissions.⁴³

Allocating buffers is a one way to mitigate this risk.⁴⁴ Minister of Environment and Forestry Regulation 21/2022 has stipulated buffers for both domestic and international carbon trading (refer to the table below). However, its primary objective is to manage the risk of failing to attain NDC targets, as opposed to addressing the impermanence risk.⁴⁵ In fact, carbon credits held in buffers or reserves will become tradable once targets of NDC sectors, sub-sectors, and sub-sub-sectors have been consistently met for two consecutive years,⁴⁶ even though the risk of emission reduction reversals may persist for a longer period of time.

Table 6. Reserves of GHG Emissions Reductions for Carbon Offsets⁴⁷

Kategori	Persentase Buffer
Offsetting domestic GHG emissions	0-5% from SPE-GRK
Offsetting overseas GHG emissions	10-20% from SPE-GRK
Offsetting overseas GHG emissions outside NDC scope	At least 20% from SPE-GRK

Source: Minister of Environment and Forestry Regulation 21/2022.

With the adoption of the market mechanism under Article 6 of the Paris Agreement, it is expected that carbon offsetting to foreign countries will become more prevalent. The "exodus" of carbon overseas presents a potential threat to Indonesia's NDC achievements. To mitigate this risk, Presidential Regulation 98/2021 and its associated regulations have imposed restrictions on international carbon trading. According to Minister of Environment and Forestry Regulation 21/2022, cross-sector overseas carbon trading must conform to the carbon trading roadmap

and allocate buffers at a minimum of 10% and a maximum of 20% of SPE-GRK, as well as a minimum of 20% for international offsets outside NDC's scope.⁴⁸

International carbon trading will only be possible after the relevant minister reports their plans and strategies for achieving targets within their NDC sector and sub-sectors to the Minister of Environment and Forestry and once targets of their NDC sub-sectors or sub-sub-sectors have been achieved. Furthermore, international carbon trading will still require authorization from the Minister of Environment and Forestry. Hence, it is imperative to set annual targets for NDC sub-sectors and sub-sub-sectors and have them communicated transparently to the public.

Ensuring Social and Environmental Integrity

High-quality carbon credits are generated from carbon projects that prioritize social and environmental integrity. From the social perspective, these projects should not exacerbate vulnerability or place additional burdens on already disadvantaged groups. Rather, they should focus on reducing inequality and enhancing the well-being of these communities. These projects should also recognize marginalized communities as legitimate stakeholders, involve them in decision-making processes, and consider their rights, needs, and interests. In terms of the environment, carbon projects must not lead to adverse ecological consequences, including the displacement of deforestation to other areas (referred to as "leakage"), water, soil, and air pollution, or the degradation of critical ecosystems. Instead, they should aim to generate positive environmental outcomes, such as biodiversity conservation.

Clarifying Safeguards in Carbon Trading Implementation

Aturan NEK tidak menyebut *safeguards* dalam konteks perdagangan karbon. *Safeguards* hanya CEV regulations do not mention safeguards in the context of carbon trading. Safeguards are only mentioned in Minister of Environment and Forestry Regulation 21/2022 within the framework of RBP.⁴⁹ However, the regulation states that the issuance of SPE-GRK for offset purposes must comply with the latest IPCC provisions, international standard, and Indonesian national standard.⁵⁰ It can be assumed that the standards referred also include social and environmental safeguards.

Among the various international safeguard standards used in the voluntary carbon market, such as TREES, CCB Standards, Land Rights Standard, the Plan Vivo Standard, VCS, and VCS Jurisdictional & Nested REDD+, none of them fully encompass all the essential criteria, i.e., the rights to land and resources, carbon rights, identification of community tenure rights, recognition of community tenure rights, and prevention and mitigation of adverse impacts.⁵¹

The existing carbon trading regulations should also clarify which national standard must be referenced to ensure social and environmental integrity. It can be assumed that if a project is claimed as REDD+, then it should adhere to the Safeguard Information System for REDD+ (SIS-REDD+). Moreover, there are at least two safeguard instruments mentioned in carbon trading regulations, namely the Environmental Impact Assessment (Analisis Mengenai Dampak Lingkungan Hidup –AMDAL) or the Environmental Management and Monitoring Efforts (Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup – UKL-UPL)⁵² and sustainable forest management certificates, certificates of legality for forest products, or forest product declarations.⁵³

AMDAL or UKL-UPL is a prerequisite for developing DRAM for carbon offset purposes. However, AMDAL lacks specificity in various aspects of social and environmental integrity, such as free, prior, and informed consent (FPIC). Additionally, the implementation of AMDAL is often tainted by corrupt practices, and community participation in the AMDAL process is increasingly limited.

Another instrument that can be considered as a social and environmental safeguard is the Timber Legality and Sustainability Verification System (Sistem Verifikasi Legalitas dan Kelestarian – SVLK).⁵⁴ On paper, SVLK includes detailed elements of social safeguards. However, this standard does not address emission leakage and reversal risks and community carbon rights.

Concerning the rights of indigenous peoples and local communities, SVLK mandates businesses to obtain FPIC from indigenous peoples.⁵⁵ Business actors are also required to define the boundaries of their operational areas in relation to territories inhabited by indigenous communities and land tenures of local communities within those areas, recognize and respect the rights of indigenous peoples and local communities to control and utilize land and forest resources, and ensure that the management of forest resources takes into account the fundamental rights of indigenous peoples and local communities concerning their livelihood, housing, and culture.⁵⁶

This standard also requires the establishment of a conflict resolution system and its systematic and measurable implementation.⁵⁷ Additionally, it mandates mechanisms for ensuring equitable benefit-sharing among all stakeholders,⁵⁸ and corporate social responsibility.⁵⁹ Regarding environmental safety, the standard encompasses obligations related to High Conservation Value Areas in the context of biodiversity,⁶⁰ as well as monitoring and pollution management.⁶¹

The existing diversity of national and international safeguards can be confusing. Beyond those developed for accessing funds through the Environmental Funds Management Agency, Indonesia lacks integrated safeguards for all climate change mitigation and adaptation actions. Therefore, there should be an effort to consolidate the existing social and environmental safeguards and reinforce their implementation across all climate change mitigation efforts, including the forestry sector and other NDC sectors.

Correcting Land Ownership Disparities

It is undeniable that forest carbon trading operates within the context of significant disparities in land and forest ownership. Approximately 564 forestry permits control over 30 million hectares of land (with an average of 47,000 hectares per permit), while 8,169 social forestry management units only cover 4.5 million hectares (averaging 553 hectares per unit).

Since the beginning, regulations governing forest carbon trading have tied the right to manage carbon to formal-legal land tenures. This means indigenous peoples and local communities who de facto protect and utilize forests but lack formal legality cannot fully and equally participate in carbon trading.

Corrective policies are required to affirm community land and forest tenure rights. Otherwise, the primary beneficiaries of carbon trading will remain major players, notably large-scale forestry, plantation, and mining companies with vast natural forest land holdings.

Even with formal legal recognition, the intricate nature of the carbon trading landscape still poses significant challenges for community participation. Minister of Environment and Forestry Regulation 7/2023 outlines provisions aimed at assisting indigenous peoples in improving their understanding and abilities to participate in carbon trading.⁶² Nevertheless, even such a support for the social forestry program remains notably insufficient.

Granting new permits for carbon trading remains possible in limited production forest areas, convertible production forests, and blocks designated for the utilization of protected forest areas that have not previously been allocated forestry permits, social forestry management approvals, or management rights. Areas designated for business actors in the Indicative Map of Forest Utilization Direction (Peta Arahana Pemanfaatan Hutan) are larger than those allocated for communities in PIAPS (5.6 million vs. 4.7 million hectares).⁶³ As such, accelerating the implementation of social forestry in these areas could provide communities with a more significant chance to engage in carbon trading.

To prevent carbon trading from exacerbating inequality, the government must take several affirmative actions. First, expedite the implementations of social forestry and land reform programs, as the current progress falls significantly short of target. Second, prioritize allocating forests to landless communities in cases of conflicting claims with companies. Third, establish a standardized framework for developing legitimate carbon assets that are scientifically sound and accessible at no cost to forest guardians, with funding provided by the state.

Ensuring Meaningful Participation

Meaningful participation embodies both procedural and recognition justice principles. The right to participate is a fundamental human right protected by international human rights law, akin to the right to access information, freedom of expression, and freedom of assembly.⁶⁴ The Paris

Agreement also underscores the importance of public participation.⁶⁵

The government can enhance participation (though not an obligation) in the implementation of CEV by providing information.⁶⁶ The government should at least provide information regarding CEV procedures, carbon trading opportunities, carbon prices, carbon market details, climate change mitigation and adaptation efforts, annual GHG emissions reduction progress, and comprehensive GHG emissions data at national, sectoral, local government, and business levels.⁶⁷ The government should also make climate change mitigation action plans and annual reports on the NDC progresses made through CEV accessible.⁶⁸ The public can presently access this information through SRN-PPI in the form of graphical representations, tables, and maps illustrating the distribution of climate change mitigation and adaptation actions and resources.⁶⁹ Restricting the forms of public information available through SRN-PPI may impede meaningful public involvement in CEV implementation.

In addition to acquiring and disseminating information, communities can actively participate in CEV implementation by providing suggestions, objections, or complaints to the Minister of Environment and Forestry and other relevant ministers of the NDC sectors via online and offline complaint mechanisms.⁷⁰ Furthermore, communities can offer input to business entities through public consultations during the formulation of DRAM, which is a mandatory requirement for emission offsetting.⁷¹

Despite existing regulations on community participation, carbon trading regulations have yet to incorporate affirmative policies that address the primary barriers hindering meaningful involvement of indigenous peoples and local communities, i.e., the lack of formal-legal recognition for these communities and the disparities in land and forest ownership where carbon rights are attached. Without rectifying these disparities, only a select few indigenous and local communities possessing formal forest management rights and meeting specific criteria⁷² can fully participate in carbon trading, while the rest can only hope for benefit-sharing. Failing to rectify these inequalities diminishes the impact of government initiatives aimed at bolstering community participation, such as assistance in monitoring, reporting, and evaluation (MRV) and capacity-building for indigenous and local communities in carbon trading implementation.⁷³

Transparency and Accountability

The legitimacy of carbon trading hinges on transparency and accountability; without them, public trust may erode due to the potential for greenwashing practices.⁷⁴ Several aspects must be made as open as possible to achieve accountability in carbon trading.

- 1. Transparency in the development of the carbon trading roadmap.** This is crucial as this roadmap will establish both general and specific criteria for emissions trading and carbon offsetting. Each sector and subsector's carbon trading roadmap is to be developed and

approved by the relevant ministers of the NDC sectors. Unfortunately, existing carbon trading regulations lack provisions that would ensure the transparent and participatory development of this roadmap.⁷⁵

2. **Transparency in carbon project licensing.** Initiating a carbon project in the forestry sector always requires forestry permits. As such, there is a pressing need for a publicly accessible database of forestry permits, encompassing permit boundaries, operational plans, and compliance reports concerning social and environmental obligations fulfilled by business actors. Currently, such data remains inaccessible to the public, indicating that the upstream facets of carbon trading have yet to be transparent.
3. **Transparency of emission data and the allocation of emission caps or PTBAE-PU.** Ensuring the accountability of businesses in reducing GHG emissions requires transparency regarding emission data, PTBAE-PU allocation, their compliance to certain obligations, along with enforcement actions taken when those obligations are not met. Presently, it remains uncertain whether that information will be accessible to the public.^{76,77} The process of establishing emission allowances (PTBAE-PU) for businesses must be made as transparent as possible to facilitate public oversight and prevent new opportunities for corruption. In light of this, the auction mechanism tends to offer greater transparency compared to direct allocation.
4. **Transparency in the MRV of carbon projects and the issuance of SPE-GRK.** Transparency in the MRV of carbon projects and SPE-GRK issuance is of paramount importance to ensure that the SPE-GRK issued truly represent genuine emissions reductions and maintain social and environmental integrity. Consequently, public accessibility should include the establishment of baselines and emission reduction targets and the development, implementation, and the MRV of DRAM, which is a prerequisite for issuing SPE-GRK. Although current regulations mandate businesses to publish DRAM and engage in public consultations during its development,⁷⁸ there are no rules for ensuring public access to DRAM implementation reports as well as its validation and verification reports on SRN-PPI.⁷⁹ Information related to methodology, achieved emissions reductions, and project documentation for carbon offsetting should be made available to the public to verify the legitimacy of carbon credits generated. In voluntary carbon registries, various project development documents and SPE-GRK issued are accessible to the public.⁸⁰
5. **Transparency in the carbon registry.** The SRN-PPI will serve as the cornerstone of transparency in carbon trading. Ministry of Environment and Forestry Regulation 21/2022 mandates SRN-PPI to disseminate public information, including details about CEV-related activities, businesses involved in CEV, climate change mitigation action plans, annual reports of NDC progress made through CEV, and monitoring and evaluation reports on CEV implementation. However, some provisions limit public access to information provided on SRN-PPI to graphs, tables, and maps of climate change adaptation and mitigation actions

and resources,⁸¹ potentially diminishing transparency and public participation in monitoring CEV implementation. Documentation pertaining to carbon project developments should be made accessible to the public. Likewise, information regarding cancellations or retirements of carbon credits should be accessible to ensure emission reduction credits are claimed once, avoiding double counting.

6. **Transparency in carbon pricing.** Currently, the voluntary carbon market is monopolized by a select few carbon credit sellers, who acquire credits from carbon developers and sell them to individuals and companies. Unfortunately, there is a lack of transparency concerning profits they earn from these transactions.⁸² The concentration of power among a small number of actors, combined with a lack of transparency in the process of determining carbon prices, may result in price fluctuations. Such price fluctuations can pose challenges for businesses in devising long-term strategies for emissions reductions. High prices may cause financial difficulties for businesses, while price drops can diminish incentives for emission reduction efforts. Both scenarios undermine the core objective of carbon trading, which is to incentivize emissions reduction.
7. **Transparency in carbon exchange operations.** A carbon exchange is a system responsible for keeping track of carbon reserve registration, carbon trading, and carbon unit ownership status. Both domestic and international carbon trading can occur through the carbon exchange. The Indonesian carbon exchange will be connected with international carbon exchanges.

As per Law No. 4 of 2023 on the Development and Strengthening of the Financial Sector, the Financial Services Authority (Otoritas Jasa Keuangan – OJK) holds the authority to regulate secondary trading of instruments related to the CEV at the carbon exchange.⁸³

On August 2, 2023, OJK introduced the Financial Services Authority Regulation No. 14 of 2023 on Carbon Trading through Carbon Exchange. OJK has the power to regulate, license, supervise, and develop carbon trading through the carbon exchange. The carbon exchange operator must take the form of a limited liability company and secure a business permit from OJK.⁸⁴

At the time of writing, two institutions have expressed readiness to become a carbon exchange operator: the Indonesia Commodity and Derivatives Exchange (ICDX),⁸⁵ through Indonesia Climate Exchange (ICX), and the Indonesia Stock Exchange (BEI/IDX).⁸⁶ Prior to initiating carbon exchange operations, the operator must prepare an annual work plan with approval from OJK.

To ensure transparency and prevent conflicts of interest, the Financial Services Authority regulation explicitly bars members of the board of directors and board of commissioners of the carbon exchange operator from holding shares or exerting control, whether directly or indirectly, over customers of the carbon exchange operator.⁸⁷ The carbon exchange operator

is responsible for verifying the identities of exchange participants, including companies, governments, and investors, to avoid conflicts of interest. OJK must also make due diligence reports publicly available when granting approval to members of the board of directors and board of commissioners of the exchange operator.

The carbon exchange operator also has various obligations to fulfill⁸⁸ in establishing an effective system for achieving the primary goal of carbon trading, promoting efforts to reduce GHG emissions. Carbon exchange operators must ensure transparency in carbon unit transactions, including their volumes, prices, and parties involved, through an open trading platform.

One of the concerns is the potential for speculation and financialization in the carbon exchange, which are completely detached from the interest to reduce GHG emissions. Speculations primarily aim to profit from price fluctuations in carbon units and its derivative products. OJK must formulate strategies to prevent speculation, including limiting the number of carbon derivative products that entities participating in the carbon exchange can own and restricting the purchase of carbon units for purposes other than fulfilling obligations to reducing emissions. OJK should also enhance law enforcement against entities that manipulate the market and engage the public and stakeholders in designing and overseeing the carbon market.

Conclusion

This article aims to evaluate carbon trading regulations in the forestry sector through a climate justice lens, focusing on ambition, social and environmental integrity, transparency, and participation.

Before implementing carbon trading, crucial preconditions must be met. First, all countries, including Indonesia, must enhance their NDC ambitions aligned with the 1.5°C goal. The Second NDC submission should reflect this heightened ambition. The governments must also harmonize domestic development policies across sectors with climate commitments, both short and medium-term. Failure to meet these preconditions risks carbon trading being driven solely by profit-seeking motives, without aiding climate change mitigation.

Second, ensuring a fair distribution of GHG emission reduction obligations among emitters is imperative. This can be achieved through transparent and strict GHG emissions cap setting. Clarification is needed regarding emission reduction obligations for business actors in the forestry sector, especially those not subject to emissions caps. This is vital as business actors control extensive forest and land resources. Without it, achieving emissions reduction at national and regional levels will be challenging.

Third, carbon trading should limit carbon offsetting to residual emissions, those remaining after optimal GHG emissions reduction measures have been taken. Without this restriction, offsets may inadvertently discourage ambitious mitigation actions. This restriction should be emboldened and incorporated into the forthcoming carbon trading roadmap.

Fourth, carbon trading regulations should bolster measures ensuring the integrity and quality of forest carbon credits. Currently, rules concerning offsetting lack in areas such as additionality, reliability, and permanence. Consequently, using forest carbon credits to offset permanent GHG emissions in the energy sector is not recommended. This aspect should be considered when establishing cross-sector carbon trading quotas.

Moreover, provisions regarding social and environmental integrity must be strengthened. This article highlights the absence of social and environmental safeguards in Presidential Regulation No. 98/2021 and Minister of Environment and Forestry Regulation 7/2023. This omission could be misleading, suggesting that carbon trading projects are exempt from safeguard requirements. Consequently, the international and national safeguard standards to be used must be clarified. The regulatory framework for forest carbon trading should also incentivize affirmative policies aimed at reducing inequality in forest and land ownership, a major obstacle to community participation.

This could be achieved through accelerating the recognition of community rights, including

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indigenous peoples and local communities, expediting the implementation of social forestry and land reform programs, prioritizing forests for landless communities in cases of land disputes with companies, and preparing a standardized framework for developing legitimate carbon assets that are scientifically sound and accessible at no cost to communities of forest guardians.

Regarding transparency and accountability, robust transparency is essential in various aspects of carbon trading, including the development of carbon trading roadmaps, issuance of carbon project permits, reporting of emission data, allocation of emission caps or PTBAE-PU, MRV of carbon project and SPE-GRK issuance, management of the carbon registry, determination of carbon pricing, and carbon exchange operation. Equally important is preventing practices that may lead to carbon market speculation and manipulation.

Lastly, due to the high vulnerability of forests and ecosystems to climate change, building resilience within these ecosystems and communities is of utmost importance. Consequently, CEV, as an instrument to achieve NDC targets and control GHG emissions, must ensure sufficient funding for effective and equitable climate change adaptation. In the context of carbon trading, this can be realized by allocating a portion of revenue from carbon trading transactions to finance climate change adaptation or even compensate for losses and damages caused by climate change. Failure to meet these preconditions and requirements makes it highly challenging for carbon trading to align with climate justice goals.

Annex I. Carbon Trading Regulations Before and After Indonesian Presidential Regulation No. 98 of 2021

No	Prior to the Presidential Regulation No. 98 of 2021	Key Elements
1	Government Regulation No. 34 of 2002 on Forest Structuring and Making of Forest Management Plans, Utilization of Forests, and Use of Forest Areas.	Carbon trading is declared a part of the utilization of forest environmental services (Article 20; Article 27) and can be pursued through an Environmental Services Utilization Permit (Izin Usaha Pemanfaatan Jasa Lingkungan – IUPJL) (Article 1 number 12)
2	Government Regulation No. 6 of 2007 on Forest Arrangement and Formulation of Forest Management Plan as well as Forest Exploitation, in conjunction with Government Regulation No. 3/2008 on the Amendment to Government Regulation No. 6 of 2007 on Forest Arrangement and Formulation of Forest Management Plan as well as Forest Exploitation	Carbon absorption and/or storage are designated as part of environmental service utilization in protected forests and production forests (Article 25; Article 33) and can be pursued via an Environmental Services Utilization Permit (IUPJL) (Article 1 number 12). The term “carbon trading” is no longer explicitly mentioned.
3	Ministry of Forestry Regulation No. P. 14/Menhut-II/2004 on Procedures for Afforestation and Reforestation within the Framework of Clean Development Mechanism.	It governs the protocols for afforestation and reforestation projects conducted under the Clean Development Mechanism (CDM), leading to the creation of tradable certified emission reductions (CERs) (Article 16). Such projects may be undertaken using pre-existing land rights and permits for carbon trading environmental services (Articles 3-8; Article 11).
4	Ministry of Forestry Regulation No. P.30/Menhut-II/2009 on the Implementation Procedures of Reducing Emissions from Deforestation and Forest Degradation (REDD).	The regulation governs the procedures for trading REDD certificates (Article 14 paragraph 1). It takes place through a REDD implementation approval letter from the Minister of Forestry (Article 12 paragraph 3).
5	Minister of Forestry Regulation No. P.36/MENHUT-II/2009 on Procedures for Licensing the Commercial Utilization of Carbon Sequestration and/or Storage in Production and Protected Forests, in conjunction with Minister of Forestry Regulation No. P.11/Menhut-II/2013 on the Amendment to Procedures for Licensing the Commercial Utilization of Carbon Sequestration and/or Storage in Production and Protected Forests.	It regulates the procedures for carbon sequestration and/or storage in production and protected forests that can be traded domestically and internationally (Article 15). To be pursued through Business Licenses or Carbon Sequestration and/or Storage Project Licenses, and Environmental Services Utilization Permits (Article 5; Article 7; Article 14)
6	Minister of Forestry Regulation No. P.20 of 2012 on the Implementation of Forest Carbon	It governs the trading of forest carbon resulting from carbon storage, carbon absorption, and carbon emission reduction activities in forests (Article 3, paragraph 2). This is facilitated through forest carbon trading permits linked to forest or forest product utilization permits (Article 7).

7	<i>Minister of Forestry Regulation P.50/MENHUT-II/2014 on the Trading of Indonesian Certified Emission Reductions.</i>	This regulation concerns the Indonesian Forest Carbon Emission Reduction Certificates (SPEKHI) and the Indonesian Carbon Certificate Market (Article 1; Article 10). It requires Business Permits/Forest Management Rights holders to obtain permission to engage in carbon sequestration and/or storage activities and carbon emission reductions (Article 2, paragraph 1).
8	<i>Minister of Environment and Forestry Regulation No. P.70/2017 on the Implementation Procedures of Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable Management of Forest, and Enhancement of Forest Carbon Stock (REDD+).</i>	The regulation concerns the procedures for undertaking REDD+ projects. Carbon trading is mentioned as one of the financing mechanisms for REDD+ (Article 20, paragraph 3). It can be pursued using existing permits or management rights (Article 1, number 38).
No.	Subsequent to the Presidential Regulation No. 98 of 2021	Key Elements
9	Presidential Regulation No. 98 of 2021 on the Implementation of Carbon Pricing for Achieving the Nationally Determined Contribution Target and Controlling Greenhouse Gas Emissions in National Development.	The regulation acts as a legal basis for achieving NDC targets, FOLU Net Sink, and the Long-Term Strategy for Low Carbon and Climate Resilience (LTS LCCR). It includes three mechanisms of CEV: performance-based payments, carbon trading, and carbon levies.
10	Minister of Environment and Forestry Regulation No. 21 of 2022 on the Procedure for the Implementation of Carbon Pricing.	It regulates the implementation of performance-based payments, carbon trading (comprising emission trading and offsets), and carbon levies. It includes provisions for cross-sector and international carbon trading, the development of carbon trading infrastructure through the Carbon Exchange, provisions for the MRV of CEV and the implementation of SRN-PPI, the issuance of SPE-GRK, and the management of carbon trading funds, the provision of public information, and stakeholder participation.
11	Minister of Energy and Mineral Resources Regulation No. 16 of 2022 on the Implementation of Carbon Economic Value in the Power Generation Sub-Sector.	It governs the implementation of CEV in the power generation sub-sector, specifically in emissions trading and offsets (excluding result based payments and carbon levies).
12	Minister of Environment and Forestry Regulation No. 7 of 2023 on the Guidelines for Carbon Trading in the Forestry Sector.	It concerns the implementation of carbon trading in the forestry sector, which comprises emission trading and carbon offsetting.

13	Minister of Environment and Forestry Decree No. SK.716/MENLHK/KUM.1/6/2023 on the Integration of Carbon Economic Value Mechanisms in Partnership, Approval, and Business Licensing in the Environment and Forestry Sector	The decree stipulates that holders of business and partnership permits and agreements in the field of environment and forestry are obliged to (1) prepare DRAM, (2) implement climate change mitigation actions to achieve NDC targets, (3) register GHG emissions reduction activities/mitigation actions in the SRN-PPI in accordance with the law, and (4) calculate GHG emissions reductions in line with the principles of measurable, reportable, and verifiable (MRV), using rules and methods in accordance with national standards.
14	Financial Services Authority Regulation No. 14 of 2023 on Carbon Trading through Carbon Exchange	It stipulates that carbon units traded on the carbon exchange take the form of securities and their derivatives. Additionally, it outlines the conditions for carbon trading via the carbon exchange, as well as the requirements and responsibilities for the carbon exchange operator, including sanctions.

Endnotes

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61. Ibid., indicator 2.4; 3.3.

62. Article 24 (1) and (2) of Ministry of Environment and Forestry Regulation 7/2023.

63. Spatial analysis of MADANI Berkelanjutan. Restricted to production forest areas, outside of areas delineated in the Indicative Map on the Suspension of the Issuance of New Licenses (Peta Indikatif Penundaan Pemberian Izin Baru – PIPPIB).

64. OHCHR. "Toolkit_HRsNDCs_Draft 8 November 2022_LaF proof.docx." OHCHR, December 9, 2022, https://www.ohchr.org/sites/default/files/documents/issues/climatechange/publications/2022-12-09/Integrating-Human-Rights-in-Nationally-Determined-Contributions_Toolkit-for-Practitioners.pdf. Accessed on July 31, 2023.

65. See the opening section of the Paris Agreement, Article 6 and Article 12. These include matters related to public participation in the planning and implementation of NDCs.

66. Article 82 (1) of Presidential Regulation 98/2021.

67. See Article 82 (2) of Presidential Regulation 98/2021.

68. Article 56 (3) of Ministry of Environment and Forestry Regulation 21/2022.

69. Article 56 (2) of Ministry of Environment and Forestry Regulation 21/2022.

70. Article 57 of Ministry of Environment and Forestry Regulation 21/2022. The Ministry of Environment and Forestry has established a platform for reporting cases of suspected pollution or damage to forests or the environment on <https://pengaduan.menlhk.go.id/>.

71. Article 60 (2) of Ministry of Environment and Forestry Regulation 21/2022.

72. Social Forestry Management Approval holders must at least obtain a silver classification. Customary law communities, social forestry approval holders, and private forest land rights holders engaging in carbon offset activities should receive support and collaborate with experienced partners possessing expertise in carbon measurement, project planning, implementation, and accessing carbon markets. See Article 8 of Ministry of Environment and Forestry Regulation 7/2023.

73. Article 24 of Ministry of Environment and Forestry Regulation 7/2023.

74. "Corporate Climate Responsibility Monitor." Carbon Market Watch, February 8, 2023, <https://carbonmarket-watch.org/wp-content/uploads/2023/02/CorporateClimateResponsibilityMonitor2023.pdf>. Accessed on July 31, 2023.

75. See Article 6 (1-4) of Ministry of Environment and Forestry Regulation 21/2022.

76. See Article 44 (1) of Ministry of Environment and Forestry Regulation 21/2022.

77. Currently, a wide range of information stored in APPLE-Gatrik, which tracks climate change mitigation efforts in the power generation sector, is accessible solely to electricity generation companies in Indonesia and is administered by the Directorate General of Electricity. The general public has access only to basic information, including data on GHG emissions levels and annual electricity emissions factors. Kementerian Energi dan Sumber Daya Mineral. "Aplikasi Perhitungan dan Pelaporan Emisi Ketenagalistrikan." Apple Gatrik, <https://apple-gatrik.esdm.go.id/site/bantuan>. Accessed on July 30, 2023.

78. See Article 60 (2) of Ministry of Environment and Forestry Regulation 21/2022.

79. See Article 15 (1-4) of Ministry of Environment and Forestry Regulation 21/2022.

80. For example, the Verra Registry. See <https://registry.terra.org/>.

81. Article 56 (1-3) of Ministry of Environment and Forestry Regulation 21/2022.

82. Carbon Market Watch (2023) found that 90% of the carbon brokers examined did not disclose the fees or profit margins they earned when selling carbon credits in the voluntary carbon market. See Gilles Dufrasne. "Climate profiteering: Are intermediaries exploiting carbon markets for their own ends?" Carbon Market Watch, February 2, 2023. <https://carbonmarketwatch.org/2023/02/02/climate-profiteering-are-intermediaries-exploiting-carbon-markets-for-their-own-ends/>. Accessed on July 31, 2023.
83. Article 5 (8) of Law No. 4 of 2023 on the Development and Strengthening of the Financial Sector.
84. Articles 4 and 11 of Financial Services Authority Regulation 14/2023.
85. Fetry Wuryasti. "ICDX Mengajukan Diri untuk Jadi Penyelenggara Bursa Karbon." Media Indonesia, August 24, 2023. <https://mediaindonesia.com/ekonomi/607637/icdx-mengajukan-diri-untuk-jadi-penyelenggara-bursa-karbon>. Accessed on September 11, 2023.
86. Zubaedah Hanum. "BEI Resmi Daftarkan Diri Jadi Penyelenggara Bursa Karbon." Media Indonesia, September 8, 2023. <https://mediaindonesia.com/ekonomi/611816/bei-resmi-daftarkan-diri-jadi-penyelenggara-bursa-karbon>. Accessed on September 11, 2023.
87. Articles 21 of Financial Services Authority Regulation 14/2023.
88. Some of the obligations to be fulfilled by the Carbon Exchange Operator include providing systems and facilities to support the trading and oversight of carbon units, offering services that are fair, effective, and efficient without discrimination, establishing, implementing, and developing the necessary standard operating procedures, and creating regulations related to service use, traded carbon units, trading activities, and trade monitoring.

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Manusia dan Alam untuk Indonesia Berkelanjutan (MADANI Berkelanjutan) is a non-profit foundation moving to address climate crisis through research and advocacy. Founded in 2016, MADANI Berkelanjutan strives to bring about equitable and sustainable development, that balances social, economy and ecological aspects. We formulate and promote innovative solutions for the climate crisis by bridging collaborations among many parties. Currently, the work focus of MADANI Berkelanjutan includes the issues of climate and forestry, sustainable commodities, sub-national sustainable development and biofuel.

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