

LEGAL & REGULATORY REFORM

# TOOLKIT FOR HIGH-INTEGRITY CARBON MARKETS

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# FOREWORD

The shared mission of the World Bank Group and its member countries to end extreme poverty on a livable planet depends on legal systems that provide clear policies and institutions that enact, implement, and apply laws and regulations fairly, transparently, efficiently, predictably, ethically, and with accountability. Such legal systems instill investor confidence, reduce risk, and drive investment, growth, and economic opportunity.

High-integrity carbon markets are a critical pathway to accelerate climate resilience and mobilize finance for sustainable development. They offer developing countries debt-free revenue for projects that improve health, conserve nature, and deliver on other national priorities. However, this potential remains largely untapped because many countries lack the robust legal frameworks needed to generate and trade in high-quality carbon credits. The complexity of the evolving carbon market adds to the difficulty countries face when striving to develop such legal frameworks.

The “Legal & Regulatory Reform Toolkit for High-Integrity Carbon Markets” (the Legal Toolkit) addresses this gap. It offers practical guidance, adaptable legislative options, and sample legal provisions to help countries design frameworks tailored to their unique circumstances while ensuring transparency and accountability, with a focus on facilitating greater ease of doing business. Countries that successfully build these high-integrity frameworks will enhance their access to carbon finance and position themselves as global leaders in environmental stewardship and responsible growth.

Three takeaways for policymakers, legislators, market participants, and other concerned stakeholders stand out:

- **Implementation is everything.** Well-intentioned climate policies require practical legal systems in order to work. The Legal Toolkit provides concrete, adaptable tools - from model provisions to regulatory options - that translate climate commitments into tangible projects, attracting finance and creating opportunities for sustainable development.
- **Trust is the market's core asset.** Investor confidence and buyer trust are essential for mobilizing private finance. In turn, they are based on a foundation of clear rules and accountable institutions. The Legal Toolkit showcases how to design these systems to safeguard the integrity of carbon markets, which is the key to stability and to securing high-value transactions and long-term investment.
- **The law must provide clarity in a complex field.** Carbon markets are increasingly digital and ever evolving. The Toolkit helps countries navigate this complexity by providing legal tools to regulate new technologies, govern data, and embed fairness into relevant rules. This invisible infrastructure enables countries to build robust carbon market pipelines, become leaders in the global green economy, and advance their climate and development goals for the benefit of their people and communities.



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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **A6.4ER** | Article 6.4 Emission Reduction |
| **A6IP** | Article 6 Implementation Partnership |
| **ADR** | Alternative Dispute Resolution |
| **ART TREES** | Architecture for REDD+ Transactions: The REDD+ Environmental Excellence Standard |
| **BTR** | Biennial Transparency Report |
| **CAD Trust** | Climate Action Data Trust |
| **CARP** | Centralized Accounting and Reporting Platform |
| **CATS** | Carbon Assets Tracking System |
| **CBE** | Emission Allowances (Brazil) |
| **CCPs** | Core Carbon Principles |
| **CDM** | Clean Development Mechanism |
| **Ci-Dev** | Carbon Initiative for Development |
| **CMA** | Conference of the Parties serving as the meeting of the Parties to the Paris Agreement |
| **COP** | UNFCCC Conference of the Parties |
| **CORSIA** | Carbon Offsetting and Reduction Scheme for International Aviation |
| **CRVE** | Verified Emission Reduction Credits (Brazil) |
| **DNA** | Designated National Authority |
| **ER; ERR** | Emission Reduction; Emission Reduction or Removal |
| **ERPA** | Emission Reduction Purchase Agreement |
| **ETS** | Emissions Trading System |
| **EU** | European Union |
| **FCPF** | Forest Carbon Partnership Facility |
| **FNDS** | National Fund for Sustainable Development |
| **FPIC** | Free, prior, and informed consent |
| **FRELs** | Forest Reference Emission Levels |
| **FRLs** | Forest Reference Levels |
| **GHG** | Greenhouse Gas |
| **ICAO** | International Civil Aviation Organization |
| **ICC** | International Chamber of Commerce |
| **ICSID** | International Centre for Settlement of Investment Disputes |
| **ICVCM** | Integrity Council for the Voluntary Carbon Market |
| **IOSCO** | International Organization of Securities Commissions |
| **IPCC** | Intergovernmental Panel on Climate Change |

| | |
|---|---|
| **IPs** | Indigenous Peoples |
| **ISFL** | BioCarbon Fund Initiative for Sustainable Forest Landscapes |
| **ITMO** | Internationally Transferred Mitigation Outcome |
| **JCM** | Joint Crediting Mechanism |
| **KYC** | Know-Your-Customer |
| **LCs** | Local Communities |
| **LoA** | Letter of Authorization |
| **LoE** | Letter of Endorsement |
| **LoS** | Letter of Support |
| **LTS** | Long-Term Strategy |
| **MCU** | Mitigation Contribution Unit |
| **MESTI** | Ministry of Environment, Science, Technology, and Innovation |
| **MINAM** | Ministry of the Environment (Peru) |
| **MO** | Mitigation Outcome |
| **MRV** | Monitoring, Reporting, and Verification |
| **NBS** | Nature-Based Solutions |
| **NDC** | Nationally Determined Contribution |
| **NECCP** | National Environment and Climate Change Policy |
| **NGO** | Nongovernmental Organization |
| **OIMP** | Other International Mitigation Purposes |
| **OMGE** | Overall Mitigation in Global Emissions |
| **PACM** | Paris Agreement Crediting Mechanism |
| **REDD** | Reducing Emissions from Deforestation and Forest Degradation |
| **RENAMI** | National Registry of Mitigation Measures (Peru) |
| **RENAPP** | National Mandatory Registry of Programs and/or Projects |
| **RMPs** | Rules, Modalities, and Procedures (Article 6.4) |
| **SBCE** | Brazilian Greenhouse Gas Emissions Trading System |
| **SB** | Supervisory Body (Article 6.4) |
| **SCF** | Standardized Crediting Framework |
| **SDG** | Sustainable Development Goal |
| **SOP** | Share of Proceeds |
| **TCAF** | Transformative Carbon Asset Facility |
| **tCO2e** | Tons of Carbon Dioxide Equivalent |
| **TER** | Technical Expert Review (Article 6.4) |
| **TGO** | Thailand Greenhouse Gas Management Organization |
| **UNCITRAL** | United Nations Commission on International Trade Law |
| **UNDRIP** | UN Declaration on the Rights of Indigenous Peoples |
| **UNFCCC** | United Nations Framework Convention on Climate Change |

| | |
|---|---|
| **UNIDROIT** | United Nations International Institute for the Unification of Private Law |
| **UN** | United Nations |
| **VCMI** | Voluntary Carbon Markets Integrity Initiative |
| **VCM** | Voluntary Carbon Market |
| **VCS** | Verified Carbon Standard |
| **VVB** | Validation and Verification Body |

# GLOSSARY OF TERMS

| TERMINOLOGY | DEFINITION |
|---|---|
| **A6.4ER** | A6.4ER means an Article 6.4 Emission Reduction, which is a carbon credit issued under the PACM that is subject to the applicable Article 6.4 methodologies, metrics, and RMPs.<br>See definitions of *Article 6.4 RMPs*, *carbon credit*, and *PACM*. |
| **Additionality** | Additionality is the concept that the ERRs resulting from a mitigation activity would not have occurred in the absence of the mitigation activity.<br>See definitions of *ERR* and *mitigation activity*. |
| **Approved carbon crediting standard** | An approved carbon crediting standard is one that a country has selected as the eligible standard under its framework. The country can choose from three primary approaches for selecting approved carbon crediting standards: domestic mechanisms, international and bilateral mechanisms, and independent mechanisms.<br>See definition of *carbon crediting standard*. |
| **Article 6** | Article 6 of the Paris Agreement enables international cooperation to tackle climate change and to unlock financial support for developing countries.<br>There are three components to Article 6:<br>• Article 6.2 provides the foundation for countries to trade ITMOs bilaterally.<br>• Article 6.4 creates a centralized mechanism (PACM) for carbon credit trading.<br>• Article 6.8 provides opportunities for countries to collaborate through non-market-based approaches for climate action.<br>See definitions of *ITMO* and *PACM*. |
| **Article 6.2 guidance** | The Article 6.2 guidance refers to the relevant decision(s) of the CMA on participation under Article 6.2 of the Paris Agreement, which may be amended from time to time.<br>See definitions of *Article 6* and *CMA*. |
| **Article 6.2 international registry** | The Article 6.2 international registry is implemented by the UNFCCC secretariat under the Article 6.2 guidance that provides specific functions to support country participation in Article 6.2.<br>See definitions of *Article 6.2 guidance*, *registry*, and *UNFCCC*. |
| **Article 6.4 RMPs** | Article 6.4 RMPs means Article 6.4 rules, modalities, and procedures, which comprise the decisions of the CMA that dictate the requirements for PACM.<br>See definitions of *PACM* and *CMA*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **Authorization** | Authorization is the formal process by which a country permits a carbon credit to be transferred internationally (at which point it becomes an ITMO) and used by another country or entity. Authorization must follow specific procedures established under Article 6.2 guidance and 6.4 RMPs, and includes the authorization of the cooperative approach, the ITMOs, and the entity(ies).<br>See definitions of *Article 6*, *carbon credit*, and *ITMO*. |
| **Authorized A6.4ER** | An authorized A6.4ER represents mitigation delivered under the PACM that the country has authorized for use toward the achievement of NDCs and/or for OIMP and is subject to a corresponding adjustment in line with Article 6.2 guidance.<br>See definitions of *Article 6.2 guidance*, *corresponding adjustment*, *NDC*, and *OIMP*. |
| **Authorized entity** | An authorized entity refers to the entity(ies) eligible to participate in the generation or use of ITMOs or A6.4ERs, which the country has authorized.<br>See definitions of *Article 6*, *authorization*, and *ITMO*. |
| **Baseline** | A baseline is a "reference level" representing the projected GHG emissions that would occur in the absence of a mitigation activity, against which performance is measured to quantify the ERRs they generate.<br>See definitions of *ERR*, *GHG*, and *mitigation activity*. |
| **Beneficiary** | A beneficiary is someone involved in or affected by a mitigation activity with the rights to participate in and receive benefits resulting from it.<br>See definitions of *benefit* and *mitigation activity*. |
| **Benefit** | A benefit is the monetary and/or nonmonetary value generated by the implementation of a mitigation activity.<br>See definitions of *mitigation activity*, *monetary benefits*, and *nonmonetary benefits*. |
| **Benefit sharing** | Benefit sharing includes the distribution of monetary and/or nonmonetary benefits resulting from a mitigation activity with the relevant beneficiaries in accordance with a benefit-sharing arrangement.<br>See definitions of *beneficiary*, *benefits*, *benefit-sharing arrangement*, *mitigation activity*, *monetary benefits*, and *nonmonetary benefits*. |
| **Benefit-sharing arrangement** | A benefit-sharing arrangement describes how the monetary and nonmonetary benefits of a nature-based mitigation activity will be distributed to beneficiaries, including the identification of beneficiaries, types of benefits, and distribution mechanisms.<br>See definitions of *beneficiary*, *benefits*, *mitigation activity*, *monetary benefits*, and *nonmonetary benefits*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **Buffer pool** | A buffer pool is a risk mitigation mechanism in which a set number of ERRs cannot be traded or transferred and are canceled to compensate for events such as reversals and overselling.<br>See definitions of *ERR* and *reversal*. |
| **Cancellation** | Cancellation is the process by which carbon credits are permanently removed from a registry for purposes other than retirement by the credit owner (for example, in the event a project is issued more credits than it should have been and a portion of those credits need to be rescinded to ensure the volume of credits a project generates aligns with the verified climate benefit). When a carbon credit is "canceled," any proprietary rights to such credit cease to exist.<br>See definitions of *carbon credit*, *registry*, and *retirement*. |
| **Carbon credit** | A carbon credit is a standardized, tradeable unit that represents the economic and environmental value derived from implementing verified ERRs, with one carbon credit representing one ton of carbon dioxide equivalent ($tCO_2e$) certified by a carbon crediting standards body and recorded in a registry.<br>See definitions of *carbon crediting standard*, *issuance*, and *registry*. |
| **Carbon crediting approach** | The carbon crediting approach is the scope or level of a carbon crediting program (for example, project-based, programmatic, policy-based, jurisdictional, sectoral, and economy-wide). |
| **Carbon crediting methodology** | A carbon crediting methodology details the specific technical procedures and requirements for quantifying, monitoring, and verifying ERRs for specific mitigation activities within a carbon crediting standard.<br>See definitions of *carbon crediting standard*, *ERR*, and *mitigation activity*. |
| **Carbon crediting standard** | A carbon crediting standard outlines a set of detailed requirements that must be met for a mitigation activity to generate carbon credits under that carbon crediting standard. The carbon crediting standard can be administered by international or independent bodies or national governments.<br>See definitions of *carbon credit* and *mitigation activity*. |
| **Carbon market** | A carbon market is a form of carbon pricing in which tradable instruments representing specified amounts of ERRs, such as carbon credits, can be created and sold.<br>See definitions of *carbon credit*, *ERR*, and *GHG*. |
| **Carbon rights** | Carbon rights refer to the legal ownership rights of the ERRs generated by mitigation activities, which are foundational to the ownership of carbon credits that derive their value from the underlying ERRs.<br>See definitions of *A6.4ERs*, *carbon credit*, *ERR*, *ITMO*, and *mitigation activity*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **CDM** | CDM means the Clean Development Mechanism, which was established under Article 12 of the Kyoto Protocol to assist developing countries in achieving sustainable development by allowing entities from Annex I Parties to participate in low-carbon activities in non-Annex I Parties and obtain certified emission reductions in return. |
| **CMA** | CMA stands for the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, which oversees the implementation of the Paris Agreement and takes decisions to promote its effective implementation. All countries that are Parties to the Paris Agreement are represented at the CMA, while countries that are not Parties are able to participate in the CMA as observers, but without the right to take decisions.<br>See definitions of *COP* and *UNFCCC*. |
| **Compliance carbon market** | A compliance carbon market, also known as a regulatory carbon market, is a type of carbon market that is administered by a public authority, involves the issuance of allowances (permits to emit GHGs), and may permit the use of carbon credits to meet emissions obligations.<br>See definitions of *carbon credit*, *carbon market*, and *GHG*. |
| **Cooperative approach** | A cooperative approach is the approach under Article 6.2 that describes the agreement between Parties to the Paris Agreement, or between a Party and a program, to voluntarily trade ITMOs according to the Article 6.2 guidance.<br>See definitions of *Article 6.2 guidance* and *ITMOs*. |
| **COP** | COP stands for the Conference of the Parties, which is the supreme decision-making body of the UNFCCC. All countries that are Parties to the UNFCCC are represented at the COP, at which they review UNFCCC implementation and any other legal instruments the COP adopts and take decisions necessary to promote effective implementation. The Kyoto Protocol and the Paris Agreement are both adopted by the COP.<br>See definition of *UNFCCC*. |
| **Corresponding adjustment** | A corresponding adjustment is the accounting step made by the buying and selling countries to their NDC accounting to reflect the transfer of the authorized ITMOs. The adjustments are intended to ensure that an authorized ITMO is not double counted.<br>See definitions of *double counting*, *ITMO* and *NDC*. |
| **CORSIA** | CORSIA stands for the Carbon Offsetting and Reduction Scheme for International Aviation, which is a global market-based scheme that was adopted under ICAO to reduce GHG emissions from international aviation.<br>See definitions of *GHG* and *ICAO*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **DNA** | DNA means designated national authority, which a Party to the Paris Agreement assigns as the entity responsible for the Party's participation in the PACM. The Article 6.4 RMPs require countries to designate a national authority responsible for a Party's participation in the PACM and communicate that designation to the UNFCCC secretariat.<br>See definitions of *Article 6.4 RMPs*. |
| **Domestic mechanism** | A domestic mechanism or carbon crediting mechanism is established and administered by a national government. The country may develop new methodologies or adopt and adapt methodologies from international or independent carbon crediting standards with the country serving as the carbon credit issuer.<br>See definitions of *carbon crediting standard*, *issuance*, and *methodology*. |
| **Double counting** | Double counting occurs when two Parties to the Paris Agreement use (or "count") the same ERR toward their respective NDCs or other international commitments. Double counting can be used as an umbrella term to encompass double crediting, double claiming, or double payment.<br>See definitions of *ERR* and *NDC*. |
| **ERPA** | ERPA means emission reduction purchase agreement, which is a legally binding contract that specifies the commercial terms (for example, the contract period, volume of verified carbon credits to be delivered, price, delivery schedule, milestones that trigger payment, payment means, and other terms) under which one party delivers carbon credits from specified mitigation activities generating ERRs to another party.<br>See definitions of *carbon credit*, *ERR*, and *mitigation activity*. |
| **ERR** | ERR means emission reduction or removal, which is a quantified and independently verified $tCO_2e$ reduced or removed, calculated using an agreed methodology. An ERR is the underlying outcome from which a carbon credit can be generated.<br>See definition of *carbon credit*. |
| **Feedback and grievance redress mechanism** | A feedback and grievance redress mechanism facilitates the receipt, assessment, and resolution of stakeholder feedback or complaints related to a mitigation activity.<br>See definition of *mitigation activity*. |
| **First transfer** | First transfer is defined as "the first international transfer of the mitigation outcome (MO)" for credits that have been authorized for use toward another Party's NDC. For credits that have been authorized for use for OIMP, the country may define the point of first transfer as the authorization, the issuance, or the use or cancellation of the MO.<br>See definitions of *authorization*, *carbon credit*, *issuance*, *NDC*, and *OIMP*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **FPIC** | FPIC stands for free, prior, and informed consent, which is a right derived from multiple international legal instruments, mostly the UNDRIP. Under the UNDRIP, FPIC must be obtained for any mitigation activity affecting Indigenous lands, territories, or resources, particularly those involving development, utilization, or exploitation of natural resources. |
| **FREL and FRL** | FREL means forest reference emission level and FRL means forest reference level. FRELs are the baselines for emissions (for example, from deforestation and degradation) and FRLs are the baselines for both emissions and removals (for example, afforestation, reforestation, and conservation) that are required under REDD+ for ERR activities. These reference levels are set at the national level or, as an interim measure, at the subnational level.<br>See definitions of *ERR* and *REDD+*. |
| **GHG** | GHG means greenhouse gas, which is a category of gas that traps heat in the Earth's atmosphere, causing a greenhouse or warming effect. This category of gases includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, nitrogen trifluoride, halogenated ethers, trifluoromethyl sulfur pentafluoride, and any other halocarbons subject to the "2019 Refinement to the 2006 IPCC Guidelines for National GHG Inventories" as published by and updated from time to time by the IPCC. |
| **GHG inventory** | A GHG emissions inventory or national inventory is a report of GHG emissions provided by Parties in their annual GHG inventory submissions to the UNFCCC secretariat.<br>See definitions of *GHG* and *UNFCCC*. |
| **ICAO** | ICAO stands for the International Civil Aviation Organization, which is a UN agency promoting global aviation safety, security, and environmental sustainability through international cooperation. |
| **ICVCM** | ICVCM stands for the Integrity Council for the Voluntary Carbon Market, which is an independent, nonprofit governance body working to establish and maintain worldwide standards for integrity in the VCM.<br>See definition of *VCM*. |
| **ITMO** | An ITMO means an internationally transferred mitigation outcome, which is a carbon credit that has been authorized by the selling country and transferred internationally to another country or authorized entity, as set out in the principles for cooperation between countries defined by the Paris Agreement.<br>See definitions of *authorization* and *carbon credit*. |
| **Independent mechanism** | An independent mechanism or carbon crediting mechanism is administered by nongovernmental organizations or NGOs (for example, carbon crediting standards traditionally used in the VCM, such as Verra, Gold Standard, and ART TREES).<br>See definition of *carbon crediting standard*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **Issuance** | Carbon credit issuance occurs when a carbon crediting standard confirms that an independently verified ERR meets the carbon crediting standard's requirements for crediting and records a credit with a unique identifier in an official registry or database.<br>See definitions of *carbon credit*, *carbon crediting standard*, *ERR*, and *registry*. |
| **Jurisdictional scale** | Under a jurisdictional scale mitigation activity, ERRs are quantified across whole sectors or regions (national or subnational).<br>See definition of ERR. |
| **LoA** | LoA means a Letter of Authorization, which is the formal document through which a country authorizes a carbon credit for international transfer under Article 6.2. The LoA may authorize the cooperative approach, ITMOs, and/or participating entities, as appropriate.<br>See definitions of *authorization*, *carbon credit*, and *cooperative approach*. |
| **LoE** | LoE means Letter of Endorsement, which, if applicable under the carbon market framework, is the formal document through which a country recognizes a mitigation activity generating nonauthorized carbon credits and its connection to the NDC, without committing the country to authorize the carbon credits for international transfer under Article 6.2 or apply a corresponding adjustment.<br>See definitions of *corresponding adjustment*, *mitigation activity*, and *NDC*. |
| **LoS** | LoS means Letter of Support, which, if applicable under a two-step authorization process, is the formal document through which a country grants initial approval for a mitigation activity to proceed with implementation prior to final authorization for international transfer under Article 6.2.<br>See definitions of *authorization* and *mitigation activity*. |
| **MCU** | An MCU means a mitigation contribution unit (also known as a mitigation contribution A6.4ER), which represents mitigation delivered under the PACM that will contribute to the country's NDC, as the country has not, or not yet, authorized them for international transfer. Under certain circumstances, mitigation contribution A6.4ERs may be authorized at a later stage, at which time they become Authorized A6.4ERs.<br>See definitions of *authorized A6.4ER* and *PACM*. |
| **Mitigation activity** | A mitigation activity is a carbon crediting project, program, or group of activities that results in ERRs.<br>See definition of *ERR*. |
| **Monetary benefit** | A monetary benefit includes financial compensation received by beneficiaries funded by the sale of carbon credits from a mitigation activity.<br>See definitions of *beneficiaries*, *carbon credits*, and *mitigation activity*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **MRV** | MRV means monitoring, reporting, and verification, which refers to the process of measuring the amount of GHG emissions reduced or removed by a specific mitigation activity over a period of time and verifying the results to ensure robustness and accuracy.<br>See definitions of *GHG* and *mitigation activity*. |
| **NBS** | NBS stands for nature-based solutions, which are actions aimed at protecting, conserving, restoring, and sustainably managing natural or modified terrestrial, freshwater, coastal, and marine ecosystems, which address social, economic, and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience, and biodiversity benefits. |
| **NDC** | NDC means nationally determined contribution, which is a national climate action plan to reduce emissions. Each country that is a Party to the Paris Agreement is required to establish an NDC and update it every five years. |
| **NDC accounting** | The NDC emissions balance is the accounting approach for tracking a country's emissions and removals under its NDC after applying corresponding adjustments for ITMOs by effecting an addition for ITMOs transferred and a subtraction for ITMOs used or acquired, consistent with decisions adopted by the CMA on Article 6.2.<br>See definitions of *Article 6*, *CMA*, *corresponding adjustment*, *ITMO*, and *NDC*. |
| **Negative list** | A negative list defines activities deemed not approved by the country for generating ITMOs.<br>See definitions of *authorization* and *carbon credit*. |
| **Nesting** | Nesting refers to the coordinated and harmonized implementation of mitigation activities at multiple accounting and governance levels within a country. Nesting involves harmonizing baselines to ensure coherent carbon accounting, MRV, safeguards, and benefit flows.<br>See definitions of *mitigation activity*, *MRV*, and *safeguard*. |
| **Nonmonetary benefit** | A nonmonetary benefit includes goods, services, or other benefits funded by the revenues from a mitigation activity, or direct incentives to beneficiaries to help implement the mitigation activity (for example, technical assistance, capacity building, and in-kind inputs or investments such as seedlings, equipment, or buildings).<br>See definitions of *benefits*, *beneficiary*, and *mitigation activity*. |
| **OIMP** | OIMP means other international mitigation purposes, which is an umbrella term to describe ITMO uses other than the achievement of a buying country's NDC, including for "international mitigation purposes" (for example, such as for CORSIA or "other purposes" as determined by the first transferring party to the Paris Agreement (for example, VCM, if applicable). International mitigation purposes and other purposes are referred to collectively as OIMP.<br>See definition of *CORSIA*, *first transfer*, *ITMO*, and *VCM*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **OMGE** | OMGE means overall mitigation in global emissions, which is a cancellation of issued A6.4ERs to support global climate ambition. OMGE is required under the PACM, where at least 2 percent of issued A6.4ERs must be canceled.<br>See definitions of *A6.4ERs* and *PACM*. |
| **Party versus party** | When "Party" is capitalized, it refers to a country (for example, an acquiring Party that purchases ITMOs in the context of Article 6.2). When "party" is in lowercase, it can include other nonstate actors, including the private sector. In the context of the UNFCCC, the term "Party" refers to a country signatory to the Framework Convention on Climate Change. In the context of Article 6 specifically, a "Party" refers to a country that has signed and ratified the Paris Agreement. |
| **PACM** | PACM means the Paris Agreement Crediting Mechanism, which is the carbon crediting mechanism operated by the United Nations that allows the trade of carbon credits in accordance with the relevant decisions of the CMA under Article 6.4.<br>See definitions of *Article 6*, *carbon credit*, and *CMA*. |
| **Permanence** | Permanence is the concept that carbon credits should represent long-term ERRs. Permanence risks exist where carbon credits are generated from a mitigation activity that is vulnerable to reversals.<br>See definitions of *carbon credit*, *ERR*, *mitigation activity*, and *reversal*. |
| **Positive list** | A positive list defines activities explicitly deemed approved by the country for generating ITMOs.<br>See definitions of *authorization* and *carbon credit*. |
| **Project proponent** | A project proponent is the actor or entity involved in developing and implementing a mitigation activity. A project proponent can be any of the following: countries, private companies, NGOs, Indigenous Peoples, local communities, and other rights holders (for example, landowners).<br>See definition of *mitigation activity*. |
| **REDD+** | REDD+ is an international policy framework under the UNFCCC that provides incentives for REDD+ activities. REDD+ covers the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries.<br>See definition of *REDD+ activities*. |
| **REDD+ activities** | REDD+ includes five activities listed in Decision 1/CP.16, paragraph 70, as follows:<br>• Reducing emissions from deforestation<br>• Reducing emissions from forest degradation<br>• Enhancement of forest carbon stocks<br>• Conservation of carbon stocks<br>• Sustainable management of forests. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **Registry** | A registry is an electronic platform that hosts data related to creation, transfer, use, and cancellation to enable transparent tracking of a carbon credit across its life cycle. The functionality of a registry system can vary, with some serving as data repositories while others may include trading functions.<br>See definition of *carbon credit*. |
| **Retirement** | Retirement is the process by which carbon credits are permanently removed from a registry for the purposes of making a claim (either as part of a voluntary reporting framework, like the Science Based Targets initiative, or a mandatory reporting obligation, like the European Union (EU) Corporate Sustainability Reporting Directive) in which the owner of the carbon credit attributes the ERRs underpinning the carbon credit to progress toward its own emissions mitigation goals.<br>See definitions of *carbon credit* and *ERR*. |
| **Revenue allocation arrangement** | A revenue allocation arrangement describes the beneficiaries, monetary and nonmonetary benefits, and benefit distribution mechanism(s) for a non-nature-based mitigation activity.<br>See definitions of *beneficiary*, *monetary benefit*, and *nonmonetary benefit*. |
| **Reversal** | A reversal is an instance where removed or stored GHGs are released back into the atmosphere as a result of either human activities or natural causes.<br>See definition of *GHG*. |
| **Safeguard** | A safeguard is a measure to ensure that mitigation activities do not cause harm to communities and ecosystems. They are often referred to as environmental and social safeguards.<br>See definition of *mitigation activity*. |
| **SDG** | SDG means Sustainable Development Goal, of which there are 17 interconnected global goals adopted by all UN member states in 2015 as part of the 2030 Agenda for Sustainable Development. |
| **SOP** | SOP means share of proceeds, which is a required fee under the PACM to support developing country adaptation needs and cover the supervisory body's (SB) administrative expenses. The SOP includes a transfer of 5 percent of issued A6.4ERs to the Adaptation Fund, a fee equaling 3 percent of the issuance fee under the PACM paid to the Adaptation Fund, and 5 percent of issued A6.4ERs in additional fees for SB administrative expenses.<br>See definition of *PACM*. |
| **Transfer** | Transfer is the process by which carbon credits are electronically moved from one registry account to another in accordance with contractual obligations.<br>See definitions of *carbon credit* and *registry*. |

| TERMINOLOGY | DEFINITION |
|---|---|
| **UNFCCC** | UNFCCC stands for the UN Framework Convention on Climate Change, which is an international legal framework adopted in June 1992 at the Rio Earth Summit to address climate change by stabilizing GHG concentrations at a level that would prevent dangerous anthropogenic interference with the climate system.<br><br>See definition of *GHG*. |
| **Validation** | Validation is the evaluation by an independent third party of mitigation activity documentation to ensure compliance with carbon crediting standards and methodologies.<br><br>See definitions of *carbon crediting standard*, *methodology*, *mitigation activity*, and *verification*. |
| **VCM** | VCM means voluntary carbon market, which is a type of carbon market in which verified carbon credits are traded and used for voluntary purposes. Buyers are often corporates with net zero or other voluntary corporate commitments or pledges.<br><br>See definitions of *Article 6*, *carbon credit*, *carbon market*, and *compliance carbon market*. |
| **Verification** | Verification is the review and ex post determination by an independent third party of the monitored ERRs generated by a mitigation activity during the verification period.<br><br>See definitions of *ERR* and *mitigation activity*. |
| **VVB** | VVB means validation and verification body, which is an entity that is qualified to conduct validation and verification processes for specific mitigation activity types. A VVB must meet accreditation requirements and demonstrate technical competence.<br><br>See definitions of *mitigation activity*, *validation*, and *verification*. |



# EXECUTIVE SUMMARY

## Overview

Carbon credit markets are a mechanism to mobilize both public and private finance, particularly in developing countries, through projects that reduce or remove emissions and fulfill broader development objectives, such as improved health outcomes and nature conservation.

Using carbon markets, developing countries can meet their own climate commitments under the Paris Agreement and generate a source of much-needed new and debt-free revenue. These countries must engage in carbon markets that are of high integrity,[1] as only such markets guarantee additional, real, measurable, verified, and permanent[2] emission reductions or removals (ERRs). Such carbon markets are characterized by trustworthiness, transparency, environmental and social soundness, and the capacity to deliver real mitigation outcomes and tangible benefits (World Bank 2024).

Countries that establish high-integrity legal and regulatory frameworks for carbon markets can enhance their ability to access carbon finance and position themselves as leaders in global good practices. In doing so, they contribute to raising standards, expanding credible market activity, and promoting responsible growth, innovation, and environmental stewardship worldwide.

**Clear rules and predictable strategies, policies, institutional frameworks, and regulations for carbon markets reduce uncertainty and improve the ease of doing business.** Strong legal and regulatory frameworks ensure transparency, environmental rigor, social inclusion, and institutional accountability, building confidence among buyers, sellers, and other stakeholders - including beneficiaries - in both the quality of credits and the value of the transactions. High-integrity carbon markets produce high-quality opt credits.[3] However, many countries still lack a clear strategy, policy framework, or fit-for-purpose laws and regulations to support their generation and monetization.

This "Legal & Regulatory Reform Toolkit for High-Integrity Carbon Markets" (**Legal Toolkit**) provides multiple **legislative and regulatory options, analyzing their**

1 In this Legal Toolkit, any reference to "high integrity" or "high quality" is used in an informal sense and is not linked to any specific carbon market standard, methodology, or other framework.

2 See rules, modalities, and procedures (RMPs) for the Article 6.4 mechanism, which was adopted as Decision 3/CMA.3 at COP26. Kindly note that there are nonpermanence risks, particularly for nature-based solutions where permanence is inherently contingent.

3 See footnote 1.

**advantages and disadvantages and outlining best practices** where clear recommended approaches exist, while recognizing that developing countries differ in their governance structures, legal systems, policy priorities, and institutional capacities.

This resource addresses both compliance and voluntary carbon markets (VCMs), with references to cooperative approaches under Article 6.2 of the Paris Agreement, the Article 6.4 Paris Agreement Crediting Mechanism (PACM), and the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) under the International Civil Aviation Organization (ICAO). It does not cover emissions trading systems (cap-and-trade), and it mainly provides a public law perspective for carbon crediting markets.[4]

This Legal Toolkit is intended to guide countries in accessing these types of markets as well as identifying and filling gaps in their **domestic legislation and regulations** that may hinder participation. It **offers nonprescriptive guidance on key legal questions as part of a practical roadmap,** guiding countries from **establishing the legal framework for creating a carbon credit** to **governing carbon credit transactions** through a **six-stage procedural framework** (**Table ES.1**). For each question, the Legal Toolkit outlines the pros and cons of different options, their interdependencies, and broader implications.

4 While not the subject of this Legal Toolkit, it is important to bear in mind that a well-designed carbon market framework should facilitate investment decisions by private sector project proponents and investors by providing clarity regarding the following matters: ownership and title - whether carbon credits are legally recognized as property and whether ownership rights are clearly defined and transferable; security and collateralization - whether credits can be pledged as collateral and recognized by financial institutions; regulatory stability - the risk of retroactive policy or regulatory changes that could affect the validity or value of credits; contract enforceability - the reliability of contracts governing issuance, transfer, and sale of credits; and exit and liquidity - the ability to transfer, trade, or exit positions in a predictable and legally protected manner.

**Table ES.1** Key Stages of Building a Legal Framework for High-Integrity Carbon Markets

| Creation of the Carbon Credit | | |
|---|---|---|
| **Stage 1**<br>LEGAL AND REGULATORY FRAMEWORK<br>**Building the foundation: Regulating market access and institutional design**<br>*Should a country regulate VCMs, international compliance markets, or both? Which legal instruments and institutional structures should be used?*<br>• New statute vs. adapted existing laws<br>• Centralized vs. delegated governance model<br>• Designate authority for policy, authorizations, and registries | **Stage 2**<br>ELIGIBLE ACTIVITIES AND STANDARDS<br>**Defining what counts: Determining eligible activities and standards**<br>*How should a country determine what activities and standards are allowed, and how is integrity ensured?*<br>• Positive list, negative list, or hybrid approach<br>• Adopt international standards (for example, Gold Standard, PACM, or VCS) or develop domestic methodologies<br>• Define additionality, baselines, permanence, and leakage | **Stage 3**<br>MONITORING, REPORTING, AND VERIFICATION (MRV) AND REGISTRIES<br>**Infrastructure for Trust**<br>*How should MRV systems and registries be structured to ensure robustness and prevent double counting?*<br>• Minimum MRV requirements and interaction with international standards<br>• Registry type: tracking vs. transactional<br>• Interoperability with Article 6 infrastructure |
| **Transaction of the Carbon Credit** | | |
| **Stage 4**<br>LEGAL RIGHTS AND CREDITS<br>**Defining the asset: Legal nature and ownership of ERRs and credits**<br>*How should a country define legal rights to ERRs and the legal nature of carbon credits?*<br>• Analyze how credits would be classified in accordance with domestic law: intangible property, financial instrument, commodity?<br>• Define who holds rights to underlying ERRs<br>• Determine authority to issue carbon credits | **Stage 5**<br>TRANSACTIONS AND REVENUE<br>**Regulating transactions, authorization procedures, and revenue frameworks**<br>*How should authorization procedures and revenue frameworks for nonauthorized credits, ITMOs, and A6.4ERs be designed?*<br>• Authorization procedures for different credit types<br>• Transactional rules (who can sell, under which conditions)<br>• Structure of taxes, fees, and levies<br>• Revenue allocation and benefit-sharing mechanisms | **Stage 6**<br>ENFORCEMENT AND DISPUTES<br>**Holding the line: Enforcement, sanctions, and dispute resolution**<br>*How should a country approach enforcement and dispute resolution?*<br>• Define and assign enforcement powers, sanctions, and corrective measures<br>• Administrative, judicial, and ADR pathways<br>• Domestic, cross-border, or combined mechanisms |

*Source:* Original for this publication.

*Note:* A6.4ERs = Article 6.4 Emission Reductions; ADR = alternative dispute resolution; ERR = emission reduction or removal; ITMO = internationally transferred mitigation outcome; PACM = Paris Agreement Crediting Mechanism; VCM = voluntary carbon market; VCS = Verified Carbon Standard.

# Examining the Stages

## 1. CREATION OF THE CARBON CREDIT

### 1.1 BUILDING THE FOUNDATION

**Should a country regulate access to VCMs and/or international compliance markets?**

- Does existing legislation already cover the core elements of a carbon market legal framework?
- If yes, does it need to be strengthened?
- If no, how might a country decide on engaging with VCMs and/or international compliance markets as entry points?

**Which legal instruments and institutional structures should be used to access carbon markets?**

- Should a country enact a new, comprehensive statute, or adapt existing laws (such as by adding or modifying provisions) in areas such as energy, climate, and natural resources to govern carbon markets, or do both?
- How should a country's civil, common, or hybrid law tradition inform whether to use legislative or executive instruments to implement its carbon market framework?
- Should a country adopt a governance model that is centralized or delegated (including at the subnational level) or a combination of both to oversee its carbon market framework?
- Which institutional body should be responsible for setting policy, issuing authorizations, managing registries, and reporting to the United Nations Framework Convention on Climate Change (UNFCCC)?

This initial stage involves making foundational decisions about how the country will engage with, or strengthen its engagement in, carbon markets. It requires establishing clear rules for market access and deciding whether to focus on VCMs, international compliance markets (such as Article 6), or both.

A critical choice is the legal instrument to use - enacting a new, comprehensive statute or adapting existing laws. This stage also involves defining the institutional governance model (for example, centralized, delegated, or both) and assigning key functions, such as policy setting, authorizations, and registry management, to specific bodies.

### Legal Options

The Legal Toolkit offers a sample framework with indicative text for both VCM and international compliance markets, including a comparison of options. It defines roles within the VCM ecosystem and sets out developments regarding Article 6 of the Paris Agreement and CORSIA.

The Legal Toolkit provides options for the choice of legal instruments, considering trade-offs between durability and speed, depending on whether the instrument is legislative or executive. It also defines choices for identifying the regulator, such as whether it should be a high-level decision-making body, an executive body, or a technical advisory committee.

### Country Examples

**Ghana** amended an existing environmental statute with executive instruments to create a sophisticated framework without new primary legislation. **Brazil** enacted a comprehensive statute to provide precise legal classification of carbon assets, ownership certainty, and a structured dispute resolution pathway. **The Bahamas** used a new legislative instrument, the Climate Change and Carbon Market Initiatives Act (2022), to create statutory authority for its framework.[5]

### Recommended Actions

- Establish clear rules and predictable regulations to improve the ease of doing business and reduce market uncertainty.
- The most durable approach is to adopt a comprehensive statutory and regulatory framework. Countries with robust existing policies may rely on the interpretation and guidance of existing laws.
- The legal framework should establish clear legal authority for the designated government entities to oversee, develop, adopt, and enforce carbon market laws and regulations.
- Selection of instruments is country-specific and must account for the constitution and existing legal landscape.

## 1.2 DEFINING WHAT COUNTS: DETERMINATION OF ELIGIBLE ACTIVITIES AND STANDARDS

**How should a country determine what activities and standards are allowed, and how is integrity ensured?**

- How can a country determine eligible mitigation activities and sectors using either a positive list, a negative list, or both? Additionally, should jurisdictional programs be included?

5 See https://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/2022/2022-0015/2022-0015_1.pdf.

- Should a country recognize established international standards such as the Gold Standard, the PACM, or the Verified Carbon Standard (VCS), or develop its own domestic methodologies?
- How should a country define and operationalize integrity principles, such as additionality, baselines, permanence, leakage, and cobenefits?

At this stage, the country defines the "what" and "how" of carbon credit generation. This involves deciding which mitigation activities and sectors are eligible, often using positive (approved) or negative (excluded) lists. A key decision is whether to adopt established international standards (like Gold Standard or VCS) or develop domestic ones. The framework must clearly define integrity principles, such as additionality, baselines, permanence, and leakage, to ensure credits represent real emission reductions.

**Legal Options**

The Legal Toolkit provides options and sample legal text to consider the different implications in the choice of eligible sectors and activities, approved standards, supply- and demand-side integrity, validation, and minimum social and environmental considerations. It also takes into consideration specific issues around nature-based solutions (NBS), such as baselines, reversals, buffer pools, benefit sharing, and nesting.

**Country Examples**

**Ghana** employs a hybrid approach with a "whitelist" (positive list), a "red list" (negative list), and case-by-case evaluation. In **Peru**, a Supreme Decree specifies criteria for carbon standards, with a subsequent resolution recognizing specific methodologies under Gold Standard and VCS.[6] **Kenya** published "Guidelines on REDD+ Nesting" to align project-level activities with national accounting, adopting a decentralized approach.[7] **Cambodia's** "Operations Manual" establishes additional national sustainable development criteria beyond standard requirements (Ministry of Environment 2024).

**Recommended Actions**

- Strongly consider adopting existing international standards (lower cost, faster entry, and established buyer familiarity).

6 See Decreto Supremo N.º 010-2024-MINAM: https://cdn.www.gob.pe/uploads/document/file/7208519/6170928-decreto-supremo-010-2024-minam.pdf and Resolución Directoral N.º 00001-2025-MINAM/VMDERN/DGCCD: https://www.gob.pe/institucion/minam/normas-legales/6425892-001-2025-minam-vmdern-dgccd.

7 Reducing Emissions from Deforestation and Forest Degradation (REDD) is an international policy framework under the UNFCCC that provides incentives for countries to protect forests and reduce carbon emissions. It promotes the role of conservation, the sustainable management of forests, and enhancement of forest carbon stocks in developing countries (REDD+).

- Avoid limiting approved sectors in a way that creates market uncertainty.
- Build in mechanisms for periodic updates via secondary instruments (regulations or guidance) without requiring legislative amendments.

### 1.3 INFRASTRUCTURE FOR TRUST: MONITORING, REPORTING, AND VERIFICATION (MRV) AND REGISTRIES

**How should MRV systems and registries be structured to ensure robustness and prevent double counting?**

- What minimum MRV requirements should a country establish, and how should these interact with the MRV systems of approved international standards?
- What type of registry should a country establish or access (covering issuance, transfer, retirement, and corresponding adjustments), and what functions should it perform?
- How can a country ensure interoperability between its national registry, Article 6 infrastructure, and third-party registries to prevent double counting and double claiming?

This stage focuses on building the infrastructure for trust and transparency. It involves establishing minimum MRV requirements while allowing reliance on the MRV processes of approved international standards.

A critical component is the registry, which tracks the credit life cycle. The country must decide on the registry type (for example, tracking or transactional) and ensure it is interoperable with international systems to prevent double counting and double claiming.

#### Legal Options

The Legal Toolkit offers the option of balancing third-party program MRV with country-specific reporting, including validation and verification body (VVB) accreditation and oversight. It also offers issuance options, including whether to use an international or a national registry, bearing in mind the prevention of double issuance and double claiming, and ensuring Article 6 linkage.

#### Country Examples

**Ethiopia** uses an MRV system to track progress on its Long-Term Strategy, integrating climate and development planning (Ministry of Planning and Development 2020). **Fiji's** Monitoring and Evaluation framework tracks policy actions, measures emission reductions, and assesses cobenefits (Government of the Republic of Fiji 2020). **Bolivia** mandates that all mitigation activities undergo validation by an independent VVB registered with an eligible carbon

crediting standard. **Côte d'Ivoire** established a comprehensive National Carbon Registry administered by the Technical Secretariat to meet Article 6.2 requirements. The National Carbon Registry facilitates tracking of carbon credit transactions on the VCM, as well as ITMO transactions.

**Recommended Actions**

- Countries recognizing international standards can rely primarily on existing MRV processes rather than building duplicative national systems.
- Affirmatively require adherence to approved standard MRV processes to preserve country enforcement authority.
- Decisions on registries should follow from a country's chosen approach to approved carbon crediting standards. A country's decision to domestically develop a tracking or transactional registry will depend on its carbon market capabilities and the resources it can dedicate to registry functionality; nevertheless, all countries must have or be able to access a tracking registry to participate effectively in Article 6.2 cooperative approaches.

## 2. TRANSACTION OF THE CARBON CREDIT

### 2.1 DEFINING THE ASSET: LEGAL NATURE AND OWNERSHIP OF EMISSION REDUCTIONS OR REMOVALS (ERRs) AND CREDITS

**How should a country define legal rights to ERRs and the legal nature of carbon credits?**

- Who holds the rights to the underlying ERRs?
- Should a country clearly establish ownership of the ERRs and legal nature of voluntary carbon credits?
- How might a country position VCMs in relation to Article 6, CORSIA, and domestic compliance instruments?
- Who should have the authority to issue carbon credits: the domestic government, third-party registries, or a combination of both?

This stage establishes the legal foundation for transactions by defining ownership. ERR ownership rules must be consistent with the country's existing legal doctrines, particularly regarding land tenure and property rights, including with respect to transferability. The framework must also clarify the legal nature of a carbon credit (for example, whether it is intangible property or a financial instrument) and establish who holds the rights to the underlying ERRs. This is crucial for providing certainty to investors.

### Legal Options

The Legal Toolkit distinguishes ERR rights from registry-serialized credits and provides options for ownership and transfer models. It provides a role-based dissection of the VCM ecosystem, positioning the European Union Emissions Trading System (EU ETS), CORSIA, and Article 6 as complementary governance models.

### Country Examples

**Brazil's** Law No. 15,042 defines carbon credits as "tradable, autonomous assets" and details original ownership rules, assigning them to the "generator of the carbon credit," with specific provisions for public, Indigenous, and traditional lands.[8] In **Madagascar,** a decree clarifies that the state holds the rights to ERRs for REDD+ activities, while project proponents hold the rights for other activities on private land.[9] In **Thailand,** guidelines specify that credits are issued by the eligible carbon crediting standards body, but all international transfers must be recorded in the national Thailand Greenhouse Gas Management Organization (TGO) registry.[10]

### Recommended Actions

- Ensure that ERR ownership rules are consistent with local legal doctrine and national context.
- Clearly define the regulatory treatment of carbon credits in the domestic framework to provide clarity to market participants.
- A country must decide who issues carbon credits, and the choice will have implementation implications.
- Registries support the issuance, tracking, and transfer of carbon credits, in turn helping a country track Internationally Transferred Mitigation Outcomes (ITMOs) and monitor their Nationally Determined Contribution (NDC) achievements.

## 2.2 REGULATING TRANSACTIONS, AUTHORIZATION PROCEDURES, AND REVENUE FRAMEWORKS

How should a country design authorization procedures and revenue frameworks for carbon market transactions involving nonauthorized credits, ITMOs, and Article 6.4 Emission Reductions (A6.4ERs)?

8 See Law No. 15,042 of December 11, 2024: https://www.in.gov.br/en/web/dou/-/lei-n-15.042-de-11-de-dezembro-de-2024-601124199.

9 See Decree No. 2025-626 Concerning the Regulation of Access to the Forest Carbon Market: https://www.environnement.mg/wp-content/uploads/2025/06/DRMCF-portant-sur-le-Decret-2025-626-relatif-a-la-regulation-de-l-acces-au-marche-du-carbone-forestier.pdf.

10 See Thailand's international carbon credit guideline: https://www.dcce.go.th/article6/policies/.

- Which authorities have the power to authorize carbon credit transactions and the respective underlying rules?
- How might a country structure taxes, fees, and revenue allocation from carbon markets to advance national development priorities?

This stage governs the transactional aspects of the carbon market. It involves designing authorization procedures for different credit types, such as nonauthorized credits (for VCMs) and ITMOs. The framework must also establish how revenues are managed, including the structure for taxes, fees, and levies, and how this revenue is allocated to support national priorities, administrative costs, and community benefits (including benefit-sharing mechanisms, when applicable).

### Legal Options

The Legal Toolkit provides procedure options for nonauthorized credits, ITMOs, and A6.4ERs. It also includes a decision tree on how to structure taxes, fees, and revenue allocation among government, communities, and stakeholders.

### Country Examples

**Uganda** implemented a three-stage approval process: a Letter of No Objection for feasibility, formal project approval for implementation, and a Letter of Authorization (LoA) for international transfer.[11] In **Pakistan,** guidelines establish levies as a percentage of credits (5 percent for NDC achievement) and revenue (12 percent as a corresponding adjustment fee and 1 percent for administration) (Government of Pakistan 2024). **Indonesia** mandates a contribution of credits to a buffer mechanism, with rates varying from 5 percent to over 20 percent, depending on the market and NDC scope.[12]

### Recommended Actions

- Design carbon credit transaction procedures that balance encouraging investment with advancing national climate priorities, minimizing bureaucracy for nonauthorized credits.
- An effective carbon market framework requires carefully designed levy and fee mechanisms that capture the administrative and opportunity costs of international transfers while avoiding excessive burdens that could undermine the viability of mitigation activity and market participation.

11 See the National Climate Change (Climate Change Mechanisms) Regulations 2025: https://www.nema.go.ug/en/wp-content/uploads/2025/05/The-National-Climate-Change-Climate-Change-Mechanisms-Regulations-2025.pdf.

12 See Regulation of the Minister of Environment and Forestry of the Republic of Indonesia; Number 21 Of 2022 of Procedures for the Application of Carbon Economic Value: https://faolex.fao.org/docs/pdf/ins217195.pdf.

- A country should design carbon credit transaction procedures, including authorization, that balance encouraging carbon market investment with advancing national climate priorities.
- Strategic allocation of carbon market revenues, whether monetary payments or collected carbon credits, can support multiple policy goals, including sustainable program administration, enhanced climate ambition through reinvestment, community development, and protection against overselling through buffer mechanisms.

## 2.3 HOLDING THE LINE: ENFORCEMENT, SANCTIONS, AND DISPUTE RESOLUTION

How should a country approach enforcement and dispute resolution?

- How should a country define and assign enforcement powers, including the ability to impose sanctions and corrective measures for noncompliance?
- Should dispute resolution mechanisms operate at the domestic level, across borders, or through a combination of administrative, judicial, and alternative approaches?

The final stage ensures market integrity and stability. The framework must define the enforcement powers of the designated authority, including the ability to impose sanctions and corrective measures for noncompliance. It should also create clear and accessible pathways for dispute resolution, leveraging existing legal procedures where possible. This includes administrative reviews, judicial processes, and potentially alternative dispute resolution (ADR) mechanisms.

### Legal Options

The Legal Toolkit provides guidance on how to define the enforcement authority, whether administrative, judicial, or ADR. It provides sample legal text for sanctions, corrective measures, and appeals.

### Country Examples

In **Ghana,** the framework refers to the Environmental Protection Agency Act for enforcement, which defines the powers of inspectors and allows for both civil (fines) and criminal (imprisonment) penalties (Ghana Carbon Market Office 2022). In **Brazil,** the law empowers the carbon market's managing body with sanctioning and appellate functions, defining a formal administrative review process with rights to defense and multiple levels of appeal.[13]

13 See Law N. 15.042 of 11 December 2024: https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/lei/l15042.htm.

**Recommendations**

- Leverage existing legal procedures for enforcement and dispute resolution where possible, consistent with constitutional protection.
- The enforcement mechanisms and dispute resolution should integrate seamlessly and should strive to achieve a balance between clarity, accessibility, and efficiency such that all carbon market participants can understand their obligations and defend their rights under the law.





# 1 INTRODUCTION

The Paris Agreement aims to strengthen the global response to the threat of climate change by substantially reducing global greenhouse gas (GHG) emissions. Its objective is to keep the increase in global temperature well below 2°C above preindustrial levels while also striving to limit it to 1.5°C above preindustrial levels. It further seeks to increase countries' ability to adapt to the impacts of climate change and to make finance flows consistent with a low GHG emissions and climate-resilient pathway.

To achieve these objectives, all Parties must commit their best efforts through Nationally Determined Contributions (NDCs) strengthen these ambitions over time and report regularly on their emissions and implementation efforts. Under international law, sovereign states bear the primary responsibility for addressing climate change. It is the fundamental legal and policy obligation of the Parties to the Paris Agreement to comply with its provisions and to implement the necessary domestic measures to achieve its goals.

Appropriate mobilization and provision of financial resources, technology, and enhanced capacity building are to be put in place, and developed nations are to assist developing nations in their climate mitigation and adaptation efforts.

The World Bank's role within this international legal framework is exclusively supportive and advisory. The World Bank assists client countries by providing financing, technical assistance, and capacity building to help them meet their climate goals; however, the obligation to comply with the Paris Agreement remains entirely with the respective state Parties. Consequently, the World Bank advises that any legal, regulatory, or policy frameworks implemented by countries - including those for carbon markets - should be expressly designed to be consistent with their international legal obligations, their submitted NDCs, and the overarching objectives of the Paris Agreement.

High-integrity carbon markets can play a key role in achieving these objectives in a cost-effective manner. It can incentivize both public and private actors to raise their climate mitigation ambition at a reasonable cost, accelerate climate action, and support global decarbonization efforts. Carbon markets offer valuable incentives and opportunities for sustainable development, particularly for developing countries. Through baseline-and-crediting mechanisms, these countries can

design and implement climate-smart projects that generate verified GHG emission reductions (ERs), enabling the issuance and monetization of carbon credits in voluntary or compliance carbon markets. Access to carbon markets not only supports developing countries in meeting their own climate targets under the Paris Agreement but also provides them with a source of much-needed new and debt-free revenue. Therefore, carbon markets must be trustworthy, transparent, environmentally sound, and capable of delivering real mitigation outcomes and tangible benefits (World Bank 2024).

To function effectively, carbon credit transactions must be grounded in robust legal and regulatory frameworks. Legal certainty equals market viability. This **"Legal & Regulatory Reform Toolkit for High-Integrity Carbon Markets" (Legal Toolkit)** provides comprehensive, practical guidance to help countries develop a robust, enabling institutional, legal, and regulatory framework to access high-integrity carbon markets.[14] It focuses on baseline-and-crediting mechanisms, categorized according to how credits are used: in voluntary carbon markets (VCMs) and in international compliance markets under Article 6, including Internationally Transferred Mitigation Outcomes (ITMOs) under Article 6.2 and the Article 6.4 Paris Agreement Crediting Mechanism (PACM).[15]

This Toolkit offers countries a practical pathway to develop or strengthen their legal and regulatory frameworks for high-integrity carbon credit transactions, particularly under Articles 6.2 and 6.4 of the Paris Agreement. It sets out the core elements of sound governance architecture; rigorous procedures for validation, issuance, monitoring, verification, and registration; additional considerations for sector-specific mitigation activities such as nature-based solutions (NBS); and guidance on the government's role in structuring carbon credit transactions.

## Target Audience

This Toolkit is designed as a practical and accessible resource for government and public sector institutions, being also useful and of interest to other stakeholders involved in carbon market projects, programs, and transactions. In particular, it will be useful to those supporting policy makers and decision-makers, legislators, and sectoral advisors across ministries and economic sectors in jurisdictions seeking to build or strengthen their carbon markets' legal and regulatory frameworks.

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14 This Legal Toolkit covers public law dimensions. A country needs to also consider covering private law dimensions, such as contractual structures (including emission reduction purchase agreement – ERPAs, warranties, and risk allocation), governing law of transactions, the role of market intermediaries and custodians, and the interaction between domestic regulatory frameworks and international commercial practice.

15 While the Toolkit does not address regional or domestic emission trading systems (ETS), many of the principles outlined may also be relevant to domestic and regional compliance markets. For some developing countries, a domestic ETS may be complementary to or even a prerequisite for effective Article 6 participation.

## Scope

This Legal Toolkit does not cover emissions trading systems (ETS), which use a cap-and-trade approach whereby governments set an emissions cap and companies trade allowances. It focuses on VCMs and compliance carbon markets under the Paris Agreement, including cooperative approaches under Article 6.2 of the Paris Agreement and the PACM, which is administered by the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat under Article 6.4 of the Paris Agreement, with references to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Carbon credits serve different markets based on how buyers intend to use them (for example, in the VCM or international compliance markets, including Article 6.2 and Article 6.4 of the Paris Agreement).[16] Whether credits are authorized or nonauthorized determines their eligibility for different market uses.

This Legal Toolkit organizes the carbon market framework around two primary categories based on authorization status and corresponding adjustments:

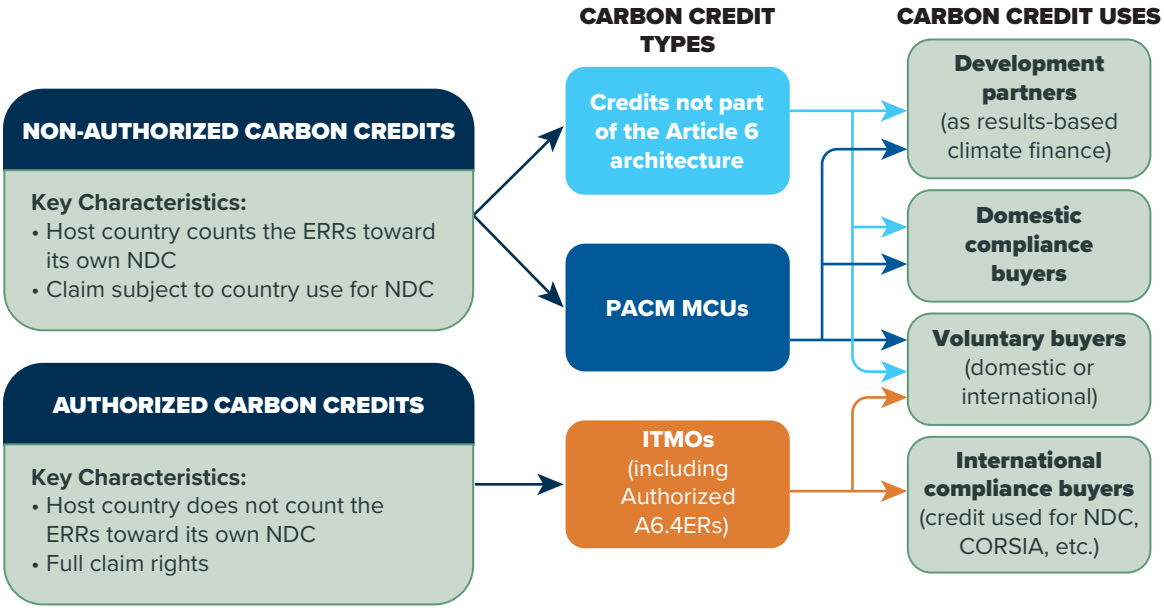
- **Nonauthorized carbon credits:** These credits, without a corresponding adjustment, allow the originating country to claim the emission reductions or removals (ERRs) toward its NDC and the buyer to accept this arrangement.
- **Authorized carbon credits:** Carbon credits with a corresponding adjustment trigger Article 6.2 authorization processes and become ITMOs, which can be used toward the acquiring country's NDCs, international compliance markets such as CORSIA, or the VCM with full claim rights. **Figure 1.1** distills these concepts into the core pathways for carbon credit use (World Bank et al. 2025).

Depending on the applicable rules, domestic compliance markets may also use nonauthorized credits, such as carbon credits generated under international or independent carbon crediting standards and PACM Mitigation Contribution Units (MCUs) (World Bank et al. 2025).

In addition, this resource mainly focuses on the public law aspects of carbon crediting markets.

16 Carbon credits under the Article 6.4 mechanism can be authorized for international compliance markets or, if not authorized for such purpose, can be used toward the country's NDC.

**Figure 1.1** Overview of Carbon Credit Types and Uses




*Source:* Original figure for this publication.

*Note:* A6.4ER = Article 6.4 Emission Reduction; CORSIA = Carbon Offsetting and Reduction Scheme for International Aviation; ERR = emission reductions or removals; ITMO = Internationally Transferred Mitigation Outcome; MCU = Mitigation Contribution Unit; NDC = Nationally Determined Contribution; PACM = Paris Agreement Crediting Mechanism.

## How to Use this Legal Toolkit

### Structure

Each section of this Legal Toolkit corresponds to a core component of a legal regulatory framework for high-integrity carbon markets, with a detailed discussion of related key issues. These components include: institutions and governance; mitigation activity design and development; monitoring, reporting, and verification (MRV); carbon rights, credit issuance, and registry procedures; carbon credit transactions; and enforcement and dispute resolution.

### Country Examples

This Legal Toolkit includes illustrative country examples that demonstrate existing approaches to designing a national carbon market legal framework. These examples are provided for informational purposes only and do not constitute recommendations or endorsements. Each country must determine how to design its framework based on its unique national priorities, legal systems, and circumstances.

## Options

Recognizing that countries differ in their governance structures, legal systems, policy priorities, and institutional capacities, this Legal Toolkit offers multiple legislative and regulatory options where appropriate, together with an analysis of their advantages and drawbacks. In areas with a clear best practice, a recommended approach is provided. However, it is not the intent of this Legal Toolkit to be prescriptive. To support implementation, the Toolkit includes sample legal provisions suitable for incorporation into the most durable legal instrument available within a country's system. It also provides illustrative examples of national approaches, while emphasizing that each country must tailor its framework to its own legal and policy context. [17]

While every country has its own unique legal and policy circumstances to consider, the Legal Toolkit provides a starting point for countries interested in developing high-integrity carbon market frameworks. It references and complements other existing reports published by the World Bank Group that include other policy choices.[18]

17 While not covered in this Legal Toolkit, a country must also consider political economy constraints, such as rent-seeking risks in the allocation of carbon rights and revenues, interministerial competition for regulatory authority, and strategic behavior in ITMO authorization (including overselling and timing arbitrage).

18 See the following in the reference list: FCPF 2018; World Bank 2019; World Bank 2020a; World Bank 2020b; World Bank 2021a; World Bank 2021b; World Bank 2021c; World Bank 2022; World Bank 2023; World Bank 2025d; and World Bank et al. 2025.

# 2 LEGAL INSTRUMENTS AND INSTITUTIONS

A robust legal framework governing participation in international carbon markets - both the VCM and international compliance markets, including Article 6 - is an important component of attracting carbon finance and ensuring high-integrity climate outcomes. It specifies the relevant policy objectives and strategic priorities and establishes the operating principles applicable to international carbon market participation. Such principles include the operational details that define the ways in which a country will engage with international carbon markets. Other key elements of a legal framework include clear definitions of the relevant legal authorities and assignment of relevant governance functions and coordination requirements.

**CARBON MARKET LEGAL FRAMEWORK OUTLINE**

**Section I. Purpose and Definitions**
A. Purpose
B. Definitions

**Section II. Legal Instruments and Institutions**
A. Responsible authorities and governance functions

**Section III. Mitigation Activity Design and Development**
A. Approved sectors and activities for generating ITMOS
B. Approved carbon crediting standards and methodologies
C. Aligning mitigation activities at multiple levels
D. Social and environmental integrity requirements
E. Integrity requirements for the use of carbon credits
F. Mitigation activity validation

**Section IV. Monitoring, Reporting, and Verification**
A. Mitigation activity MRV

**Section V. Carbon Rights, Credit Issuance, and Registry Procedures**
A. Legal nature and available rights in emission reductions or removals
B. Legal nature and available rights in carbon credits
C. Carbon credit issuance
D. Registry procedures

**Section VI. Carbon Credit Transactions**
A. Procedures for nonauthorized carbon credits
B. Procedures for ITMO authorization
C. Procedures for A6.4ERS
D. Levies and fees
E. Allocation of revenue

**Section VII. Enforcement and Dispute Resolution**
A. Enforcement authority and powers
B. Dispute resolution

**Section VIII. Appendixes**

There are different pathways a country can take to develop a legal framework. To improve the chances of successful implementation, each country should assess its available options and develop a legal framework that draws upon international best practices while being fit for its particular needs, objectives, and circumstances.

Public consultation helps create inclusive and effective public policies. It enables broad oversight of the decision-making process and supports public buy-in and trust, improving the effectiveness of enacted policies (World Bank 2017a). When developing specialized policies, such as a carbon market legal framework, engaging stakeholders in the policy-making process helps consider diverse perspectives and specialized market expertise, thereby increasing the likelihood of achieving the overall policy objectives. Questions include: Who should be included in the consultation? Should it be a passive consultation where parties are just informed, or should it be an active consultation where parties participate in the input process?

## 2.1. Available Frameworks

This chapter focuses on how a country can develop a public law framework to govern its participation in carbon markets and oversee carbon market activities within its borders.[19] A comprehensive public law framework may also intersect with, or require, guidance or interpretation on private law principles (for example, contract, commercial, and property law) that govern trading activities between private entities.[20] In particular, how a country defines rights to carbon, which form the legal foundation for carbon market activity, is generally based on the application and interpretation of private law principles.[21] However, the majority of the framework should address rules governing how the country exercises authority over entities participating in carbon markets. Additionally, a country's public law framework for carbon markets may be grounded in its existing climate policy landscape, including broader policies on climate change, green finance, and sustainable development.

This chapter also examines how a country can structure carbon market governance. It covers two key areas: defining and allocating the functions needed to operate the carbon market legal framework, and coordinating among government institutions to develop and manage it. The options presented are high level, recognizing that each country must adapt them to local conditions.

Clear governance and institutions with well-defined legal authority promote the effective functioning of a carbon market framework. Legal clarity ensures that regulatory bodies have the necessary authority to oversee market integrity, enforce compliance, and adjust as needed to respond to market conditions. Institutional authority over governance functions anchored in legislation helps align carbon

19 Public law governs the relationship between individuals and the country, generally encompassing constitutional, administrative, and criminal law that regulates governmental powers and protects citizens' rights against state action.

20 Private law regulates relationships between private parties, whether individuals, companies, or organizations.

21 See **Chapter 5** for a detailed discussion of carbon rights, credit issuance, and registry procedures and the nexus of a country's carbon market framework with its existing private law principles.

markets with national and international climate commitments and provides a stable foundation for long-term planning and participation. A legal framework that clearly delineates roles and governance functions and promotes coordination among institutions enhances the efficiency, stability, and scalability of carbon markets.

## Policy Purpose

Carbon markets are one possible means to help a country achieve its Long-Term Strategy (LTS) and NDC. They can also be a source of revenue to support broader sustainable development and green growth objectives. New policies created under a carbon market legal framework should be developed and deployed in a way that is consistent and mutually reinforcing with existing climate and development policies (see **Box 2.1**), thereby promoting a country's climate and development goals.

### Box 2.1 Example Framing and Reinforcing Policies

Policies that should typically be considered in the context of structuring a carbon market legal framework include

- Long-term strategies (LTS) and Nationally Determined Contributions (NDCs) developed in accordance with the rules of the Paris Agreement;
- Target date development strategies or action plans (for example, 2030 Development Plan);
- National climate laws or policies enacted to support the achievement of a country's LTS and NDCs; and
- Sector-based laws or policies for incorporating climate change goals (for example, for forest, agriculture, or energy sectors).

## Legal Framework Options

In most cases, a country may establish a carbon market legal framework through legislative instruments (enacted by an elected body) or executive instruments (enacted by a head of state and government or their delegate). However, the implementation of either type of instrument will also be shaped by how courts interpret and characterize it, particularly in common law jurisdictions. Therefore, it is important to design the originating instruments with an understanding of possible judicial interpretations and relevant existing law(s) - for example, the legal status of carbon credits as commodities under certain legal systems. This impacts how

the originating instruments will ultimately be implemented. In either case, these instruments may be devoted specifically to carbon markets or broadly to climate, while incorporating elements relevant to carbon markets.

### Legislative instruments

Legislative instruments are primary laws enacted by legislative bodies, such as parliaments, congresses, councils, or committees, depending on the level of government. At the national level, these instruments are laws in the form of constitutions or statutes. Some countries embed climate-related rights directly in their constitutions.[22] Any such constitutional rights should inform and serve as the basis for more specific rulemaking related to carbon markets. See **Box 2.2** for an example.

Beyond constitutional provisions, enacting comprehensive carbon market rules via statute is often the most robust and enduring option. Enacting a statute sends a stronger signal to market participants because it arises from a legislative process that requires broad support from members of a parliament or congress. As such, statutes are typically viewed as less likely to be rescinded or voided by a change in government leadership (in comparison to other instruments like decrees or policy pronouncements from relevant agencies). The main challenge with utilizing legislative instruments is the lengthy process and the substantial leadership effort often required to secure enough support for enactment. Additionally, legislative instruments often require additional executive instruments to provide more detailed implementation mechanics.

A country with strong political institutions, public consensus, and institutional capacity related to carbon markets should strive to enact comprehensive legislative instruments (along with the corresponding executive instruments, as discussed in the following section). Developing a comprehensive legislative framework tailored to carbon markets enables lawmakers to connect often disparate areas of law and define how different elements of the public and private sectors should work together to engage effectively in carbon market activity. Approaches 1(a) and 1(b) in **Table 2.1** provide additional details on enacting new comprehensive carbon market policies.

22 For example, see the Political Constitution of Peru, Ch. II (The Environment and the National Resources), Art. 66 (1993) https://www3.congreso.gob.pe/Docs/constitucion/constitucion/index.html#p=1; the Constitution of the Republic of the Philippines, Art. II, Declaration of Principles and State Policies, Sec. 16 (1987) https://www.officialgazette.gov.ph/constitutions/1987-constitution/; and the Constitution of the Republic of Ecuador, Ch. 7 (Rights of Nature), Art. 71 (2008) https://pdba.georgetown.edu/Constitutions/Ecuador/english08.html.

### Box 2.2 Country Spotlight: Legislative Instruments

**THE BAHAMAS** 

**Title:** Climate Change and Carbon Market Initiatives Act, 2022 (Act)[a]

**Legal instrument:** The Act creates statutory authority for a carbon market framework. It was followed by the Carbon Credits Trading Act No. 36 of 2022[b] and the Emissions Reduction Initiatives and Incentives Regulations, 2025.[c]

**Relevant legal framework option:** Approach 1(a): Comprehensive legislative instrument (see **Table 2.1**)

**Description:** As a legislative instrument, the Act required parliamentary approval and created legal authority that cannot be altered without further legislative action. The Act allocates responsibilities for its administration, requiring the Prime Minister to have general oversight, while the Minister of Finance handles financial administration and levy collection, and the Minister of the Environment manages reporting obligations to the United Nations Framework Convention on Climate Change (UNFCCC). The legislation also defines key terms, establishes an advisory council, identifies the fundamental principles governing the markets, and creates the legal framework for the Bahamas to engage in Article 6.

a. See Climate Change and Carbon Market Initiatives Act, 2022: https://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/2022/2022-0015/2022-0015_1.pdf.

b. See Carbon Credit Trading Act, 2022: https://faolex.fao.org/docs/pdf/bha217808.pdf.

c. Prime Minister of the Bahamas. 2025. Emissions Reduction Initiatives and Incentives Regulations, 2025. https://laws.bahamas.gov.bs/cms/images/LEGISLATION/BILLS/2025/2025-0012/2025-0012.pdf

Alternatively, if a country already has legislative measures related to carbon markets - such as statutes on climate change mitigation, achieving its NDCs, or sustainable development objectives - it can use them in conjunction with new, interpretive executive instruments to support their application to carbon markets.[23] Approaches 2(a) and 2(b) in **Table 2.1** provide further insight into how

23 At the subnational level, local legislative instruments can also be used to shape and implement carbon market policies. The most prominent example relates to land tenure and land use rules, which are often crafted and enforced by local governments. Clarity with respect to land ownership and use rights is essential to the creation of a nature-based carbon instrument. As such, it may be important to engage with local legal frameworks - for example, local ordinances that define legal property rights and boundaries, local bylaws that convey property deeds or titles, or local authorization procedures for granting permits or access rights - to ensure they allow for efficient implementation of higher-level carbon market policies.

carbon markets are promoted by relying on the interpretation of different existing legislative instruments.

### Executive instruments

Primary law instruments enacted directly by heads of state and government or by executive branch bodies, which may be called executive orders, decrees (for example, *decrets d'application*), ordinances, resolutions, or regulations enacted by administrative agencies or ministries, are all considered executive instruments for the purposes of this Legal Toolkit. Executive instruments typically carry the force of law for specific regulated entities. For instance, directives may explicitly apply to the government or public sector and describe the government's objectives, obligations, or restrictions in respect of particular actions. Alternatively, regulations issued by executive bodies may apply to defined elements of the private sector based on their participation in specific activities. See **Box 2.3** for an example.

In many countries, executive instruments are enacted following the passage of new legislative instruments and are required to provide detailed instructions for their implementation. Bringing a carbon market framework to life will often require executive instruments that provide practical and precise implementation guidance. Such executive instruments may follow from a new comprehensive legislative instrument governing carbon markets (see approach 1(b) in **Table 2.1**). Alternatively, they may offer new, carbon market–specific guidance related to the implementation of existing legislative instruments (see approach 2(b) in **Table 2.1**).

When a country enacts a new legislative instrument to promote carbon market participation, it will likely need to adopt one or more executive instruments with associated implementation instructions (for example, to address more granular details such as approved sectors, authorization processes, and fees). Executive instruments may be more readily achievable than legislative instruments as they often require less time and political consensus to enact. For instance, in some countries, a head of state may unilaterally issue an executive order or decree directing the government to take (or refrain from taking) actions to engage in international carbon markets. Compared to other types of executive instruments, regulations usually take longer to adopt as they are often extensive and require detailed review, which may include public notice and comment periods. They also tend to rely more on technical agreement than political consensus, which can be easier to secure. However, these instruments are also generally easy to rescind or reverse when new executives take power. As such, they can be less durable, and relying solely on executive instruments can create long-term uncertainty and insecurity regarding the targeted policy.

## Box 2.3 Country Spotlight: Executive Instruments

**RWANDA** 

**Title:** National Carbon Market Framework (Framework)[a]

**Legal instrument:** The Framework was adopted by the Rwanda Environment Management Authority (REMA) to support the country's participation in carbon markets, including Article 6. It is an executive instrument that presents Rwanda's vision for carbon market engagement and establishes the institutional arrangements and processes necessary to govern and operationalize carbon markets in the country. REMA developed the Framework under the supervision of the Ministry of Environment in its capacity as the government's adviser on climate change issues and the country's designated national authority (DNA) for Article 6.4.

**Relevant legal framework option:** Approach 1(b): Comprehensive executive instrument (see **Table 2.1**)

**Description:** The Framework demonstrates how a country can design and implement carbon market strategies using executive instruments developed through consensus-driven processes. It establishes the institutional and governance structures required for carbon market implementation, including defining the roles and responsibilities of the oversight body responsible for supporting the adoption and supervision of needed legislation and mandates. The process for Article 6 implementation is outlined in another executive instrument, the Manual of Procedures.

The Framework also points to the policy, legal, and regulatory frameworks that underpin Article 6 participation in Rwanda and provides the international and domestic policy context from which the country developed its carbon market approach. For example, it summarized the series of legislative amendments enacted by the country to implement its climate change strategy following the ratification of the Paris Agreement. This included revisions to its national environmental policy in 2019 to better address climate change, resulting in the National Environment and Climate Change Policy (NECCP). The NECCP, in turn, is grounded in the Constitution of the Republic of Rwanda (revised in 2015), which imparts on its citizens both a right to a clean environment and a duty to protect the environment. The NECCP's policy objective number seven promotes green foreign and domestic direct investment and other capital inflows, including funding from carbon markets (Ministry of Environment, Rwanda 2019).

a. See REMA 2023.

**Table 2.1** Legal Framework Implementation Considerations

| INSTRUMENT TYPES | IMPLEMENTATION APPROACHES | | | |
|---|---|---|---|---|
| | Comprehensive carbon market policy | | Disparate policy implementation | |
| Legislative Instruments | Approach 1(a): Country adopts a holistic statutory framework | | Approach 2(a): Country relies on the interpretation of various existing statutes | |
| | **Benefits** | **Challenges** | **Benefits** | **Challenges** |
| | • Reflects lawmakers' intent on all aspects of carbon markets<br>• Reflects greater cross-sectoral and interministerial coordination<br>• More likely to endure leadership changes<br>• Fewer opportunities for legal challenge | • Longer development and implementation processes and greater political consensus required<br>• Potentially more costly to implement | • No new laws need to be passed<br>• May be implemented using existing resources (for example, institutions, personnel, and funding allocation); lower cost | • Interpretive guidance via executive instruments still required, otherwise, increased risk of challenges to implementation<br>• Potentially less clear interpretation to the public and potential transaction partners |
| Executive Instruments | Approach 1(b): Country adopts comprehensive directives and/or regulations to supplement a new statutory framework | | Approach 2(b): Country relies on new or existing directives and/or regulations based on various existing statutes | |
| | **Benefits** | **Challenges** | **Benefits** | **Challenges** |
| | • Provides tailored guidance on all aspects of carbon market participation<br>• Provides detailed directives to public and/or private sector carbon market participants; minimizes market confusion | • Inability to act without authority granted by legislative instrument, leaving decisions subject to legal challenge and reversal<br>• Lengthy process for enacting implementing regulations; involves public consultation<br>• Can be costly to establish new governing bodies or roles | • Clarifying guidance on existing statutes the quickest path to implementation, particularly via less consensus-driven instruments like executive order or decree<br>• Potential for implementation utilizing existing resources, at lower cost | • Inability to act without authority granted by legislative instrument, leaving decisions subject to legal challenge<br>• Ease of reversal or nullification by new leaders, undermining confidence among potential transaction partners<br>• Potential need for action by multiple executive branch entities, risking confusion and inconsistencies<br>• Possible expansion of institutional responsibilities beyond current capacity, reducing efficiency or requiring new investment |

*Source:* Original for this publication.

*Note:* Some countries may take a mix of approaches.

A country with existing legislative instruments related to carbon markets (for example, statutes related to climate change mitigation, achieving its NDCs, or sustainable development objectives) can issue executive instruments that align with these legislative frameworks. The executive branch can clarify how the existing statutes support carbon markets by enacting formal regulations or providing administrative guidance, typically through nonbinding clarifications. In either case, executive instruments enable a country to issue more detailed and concrete recommendations to supplement relevant existing legislative instruments.

Using only executive instruments to promote carbon market participation without legislative backing could limit interest from project proponents and their transaction counterparts, given concerns about the long-term policy viability. However, the choice between executive and legislative instruments should be assessed against a country's particular political and market context, as executive frameworks may be more suitable in certain contexts.

### Judicial interpretation

The relevance of judicial interpretation to implementing and enforcing a legal framework for carbon market participation will depend on the specifics of the framework and the nature of a country's legal tradition. In a civil law country, legislative and executive instruments are more likely to provide detailed guidance on the rights and obligations of the relevant carbon market participants. In these countries, judicial interpretation will be less critical to the governance and enforcement of transactions, although even civil law systems tend to have constitutional review of primary law by the courts. See **Figure 2.1**.

Conversely, in a common law country, the rights and obligations created by legislative and executive instruments are more likely to be further defined through judicial decisions over time. Several large international carbon market sellers and buyers are common law countries, and many transaction contracting templates are based on common law traditions, so it is advisable to monitor and understand the judicial precedents related to carbon rights, climate policy, and the country's eligibility for carbon transactions, among other factors.[24]

24 This binary comparison of civil law versus common law countries does not necessarily represent the full spectrum of countries' legal traditions. Some countries have mixed systems where codified civil law (or in some places, religious or customary law and traditions) operate along with common law principles of judicial precedence. Judicial review and interpretation will have different weight across this spectrum and will need to be assessed in the context of each country's particular circumstance. For example, the Philippines' legal system combines Roman (civil law) and Anglo-American (common law) systems, customary usage, and Islamic law. (See Council of ASEAN Chief Justices – Introduction to the Legal System: https://cacj-ajp.org/philippines/legal-system/introduction-to-the-legal-system/.) Additionally, the legal system of South Africa is derived from the civil law systems of Europe and the common law of England. (See Judiciary of the Republic of South Africa – History and Background: https://www.supremecourtofappeal.org.za/index.php/history.)

Judicial interpretation of a country's private law frameworks may also be relevant in the context of drafting governing law provisions in carbon market transaction agreements. For instance, the rights that one party can enforce against another in a carbon market transaction agreement will be determined by the governing country's law, including prior judicial decisions, as it defines carbon rights and carbon assets. Similarly, the available representations and warranties for the party selling carbon assets will depend on the availability, under the governing country's law, of processes for transferring rights to carbon assets.[25] Both countries and parties should understand the governing jurisdiction's legal system, tradition, and relevant judicial precedents that could affect their carbon market agreements.[26]

In addition to domestic judicial interpretation, international courts and tribunals are increasingly shaping how individual countries develop and implement their climate policies. Recent landmark decisions have clarified countries' legal obligations under international law and created new frameworks for understanding climate duties beyond the Paris Agreement.[27] Regional human rights courts have similarly recognized the right to a healthy environment, compelling countries to strengthen climate commitments.[28] These judicial pronouncements influence domestic policy by articulating the scope of existing treaty obligations, establishing climate action as a matter of fundamental rights and intergenerational equity, and providing legal benchmarks that national courts increasingly reference when evaluating their own countries' climate policies.

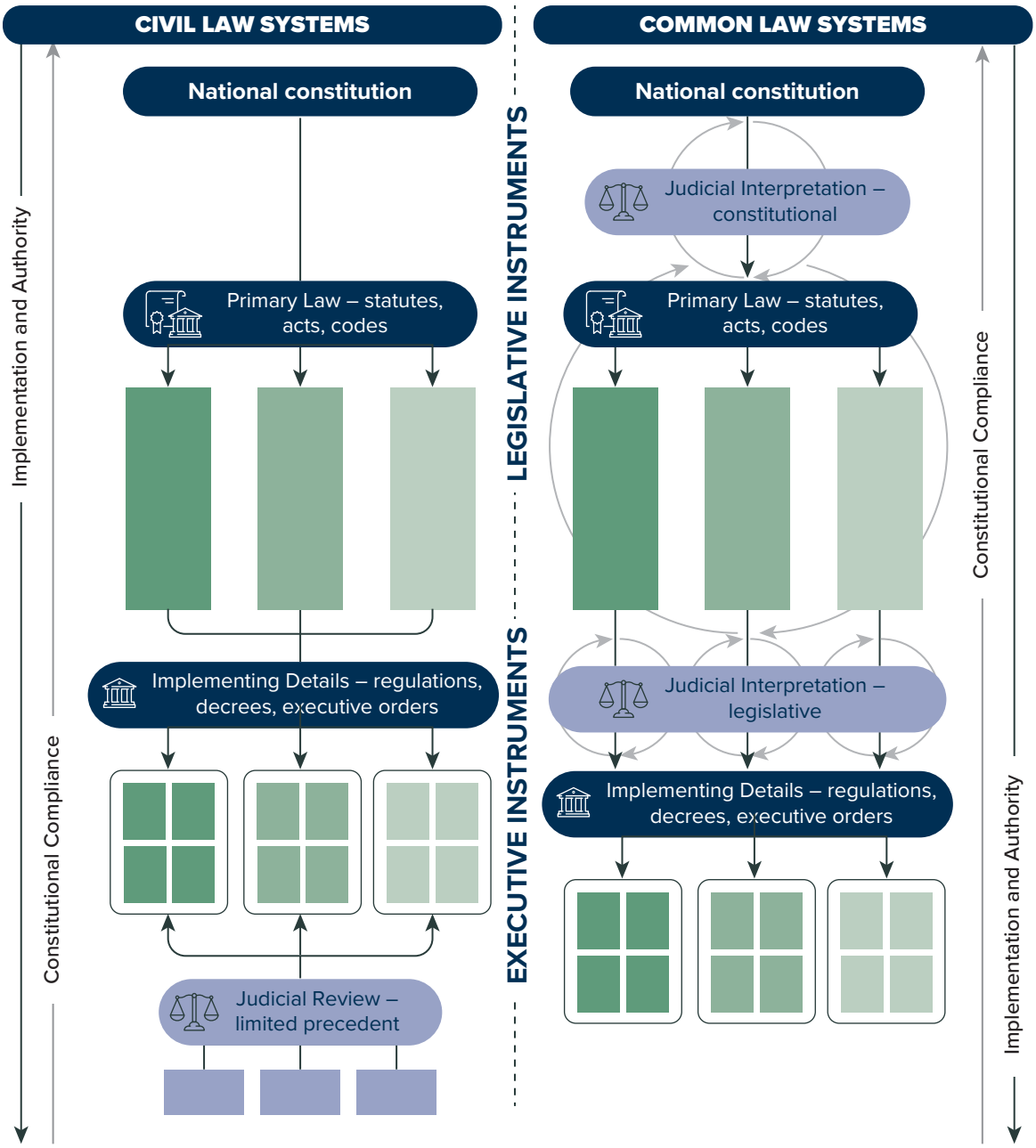
25 To help create greater international consensus and standardization with respect to the development and implementation of individual countries' private laws (for example, how countries define and assign proprietary rights to carbon assets, including treating them as objects of dispositions and acquisitions and allowing rights and interests in these assets to be asserted against third parties), there is an effort underway by the International Institute for the Unification of Private Law (UNIDROIT) to provide guidance on effective oversight of verified carbon credits. The UNIDROIT Working Group is developing principles that address specific subsets of private law issues while refraining from addressing rules that are to be enforced by public authorities (UNIDROIT Working Group on the Legal Nature of Verified Carbon Credits 2025).

26 See **Chapter 7.2** for a detailed discussion on dispute resolution, including administrative, judicial, and alternative dispute settlement procedures.

27 See, for example, International Court of Justice, General List No. 187, Obligations of States in Respect of Climate Change (July 23, 2025); International Tribunal for the Law of the Sea, No. 31, Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law: Advisory Opinion (May 21, 2024).

28 See, for example, European Court of Human Rights, No. 53600/20, Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (April 9, 2024).

**Figure 2.1** Legal Instrument Hierarchy under Civil and Common Law Systems




*Source:* Original for this publication.

## 2.2. Selecting a Legal Instrument

Noting that every country will have different priorities and objectives, the following represents one possible structured approach that can be applied to determine the most effective legal framework for its circumstances.

1. **Define strategic direction and objectives:** Review any pre-existing rights, obligations, commitments, and restrictions - which may be found in constitutional provisions, existing climate-related frameworks and development plans, or other prerequisite policies - to identify concrete goals (for example, related to climate mitigation, adaptation, or revenue), any focus on specific sectors or technologies (for example, forestry, agriculture, or energy), the scale of available carbon crediting opportunities, and the size of domestic versus international demand for carbon credits.
2. **Determine key policy needs and map them onto existing legal frameworks:** In the context of the identified policy goals and objectives, a country should assess which of those will require new legal instruments and which can be achieved through existing legal instruments.[29] Elements that should be addressed either via a new legal framework or modifications to existing instruments include the following (each of which is addressed in greater detail in the following chapters):

    a. Establishing institutions and governance processes for approving or rejecting activities expected to generate carbon credits; designating or accrediting entities to support MRV and auditing of mitigation activities; managing, as applicable, reversal risk management systems; building and administering a national registry for tracking information related to carbon credits and/or transacting carbon credits; and authorization of Articles 6.2 and 6.4 cooperative approaches

    b. Creating or approving, as relevant, standards and methodologies for carbon crediting

    c. Establishing rights (of government, communities, or private entities) to environmental benefits, including ERRs, and managing participatory design and benefit sharing

    d. Defining the legal nature of carbon credits, including how to prove ownership and transfer rights to ERRs and associated carbon credits

    e. Defining criteria and procedures for participation in Articles 6.2 and 6.4 transactions; for example, the timing of authorization and first transfer, applicable reporting requirements, and acceptable credit tracking mechanism (that is, accounting or transaction registry)

    f. Allocating revenue from carbon market transactions.

29 For example, a country should determine whether there are any existing constitutional or other legal restrictions on the commoditization of ERRs or the use of carbon markets. This undertaking should also involve identifying which level of government has the requisite power to enact different legislative or executive instruments that may be needed to promote carbon markets (for example, understanding whether such powers are available to the legislative and/or executive authority of the national government, the subnational government, or both).

3. **Refine scope based on current frameworks and capacity:** A country should evaluate its ability to enact a comprehensive legal framework to achieve its key policy needs and objectives related to carbon market participation, including consideration of any logistical constraints - timing, funding, or capacity - that might limit the scope of potential policy implementation. If a country has existing legislative and executive instruments addressing carbon market policies, such as statutes related to climate change mitigation, achieving its NDCs, or describing sustainable development objectives, it should assess whether additional guidance via executive instruments may be required to fill gaps, improve clarity, or create efficiencies. For example, this could include specifying procedures for participation in Articles 6.2 and 6.4 transactions within an existing climate statute or indicating that existing legal frameworks for financial instruments also apply to carbon credits (World Bank et al 2025).

No matter which instrument or set of instruments best fits a country's situation, strong collaboration among major government stakeholders will lead to more efficient implementation. Further, a country's carbon market legal framework should take into account existing international governance frameworks, model rules, and carbon crediting practices.

For instance, international bodies like the International Civil Aviation Organization (ICAO), the Integrity Council for the Voluntary Carbon Market (ICVCM), and the Article 6.4 supervisory body (SB)[30] all make best practice principles and guidelines for generating high-integrity mitigation outcomes publicly available (ICAO 2019; ICVCM 2024). Other intergovernmental organizations also develop model rules relevant to participation in carbon markets. For instance, the United Nations International Institute for the Unification of Private Law (UNIDROIT)[31] and the International Organization of Securities Commissions (IOSCO) are involved in developing guidelines for regulators on the legal nature and regulatory treatment of carbon credits, respectively (IOSCO 2024). Such guidelines may be useful for a country to consider, as they tend to capture trends and emerging consensus in international carbon markets.

30 See UNFCCC Rules & Regulations: https://unfccc.int/process-and-meetings/bodies/constituted-bodies/article-64-supervisory-body/rules-and-regulations.

31 See Legal Nature of Verified Carbon Credits: https://www.unidroit.org/work-in-progress/verified-carbon-credits/.

## 2.3. Responsible Authorities and Governance Functions

### Overview

#### Governance functions

The implementation of a carbon market framework is multifaceted and often economy-wide, involving governance functions like policy coordination and oversight, rulemaking, technical advice, and implementation (World Bank 2020). These functions should be set forth in law to ensure clarity among government institutions and market participants.

The Paris Agreement's enhanced transparency framework requires countries to provide detailed reporting on their GHGs, including progress toward their NDC and the authorization of carbon credits (or mitigation outcomes – MOs). MO is an umbrella term for an ERR. It is a term of art in the context of Article 6. This Legal Toolkit primarily uses "carbon credits" when referring to units that may be used in a voluntary or compliance context. It refers to authorized carbon credits or ITMOs in the context of Article 6.2, authorized Article 6.4 ERs (A6.4ERs), CORSIA, and correspondingly adjusted carbon credits under the VCM. This reporting obligation for all authorized carbon credits requires a country to have visibility into all domestic mitigation activities to ensure accurate reporting.

**Table 2.2** provides a nonexhaustive list of the main carbon market governance functions. These functions are divided into those that pertain to all mitigation activities versus those that pertain to mitigation activities authorized for international transfer (ITMOs). The functions listed in the table and their respective legal framework options will be further discussed in the relevant chapters. This list is a starting point, as additional governance functions may be needed based on local circumstances and policy preferences.

### Responsible authorities

Defining responsible authorities requires a strategic evaluation of existing institutional capacity and governance needs. **Figure 2.2** presents a four-step decision process for evaluating existing institutional capacity and determining whether to allocate governance functions to existing entities or establish new ones. This assessment ultimately informs how a country defines the high-level decision-making, administrative implementation, and technical advisory functions needed for effective carbon market governance.

**Table 2.2** Example Governance Functions for a Carbon Market Framework

| Governance Functions for all Carbon Market Activities | Additional Governance Functions for ITMOs |
|---|---|
| • Scope of the carbon market framework (for example, approved sectors and technologies)<br>• Legal nature of carbon credits and ownership of emission reductions or removals (ERRs) and carbon credits<br>• Accreditation rules for third-party auditors<br>• Benefit-sharing and participatory rights<br>• Monitoring, reporting, and verification (MRV) processes related to the framework[32]<br>• Roles and responsibilities of individual line ministries and coordinating entities<br>• Recognition or development of domestic, international, or independent carbon crediting standards, including methodologies, technical standards, and guidelines<br>• Use of tracking and/or transactional registries<br>• Reversal risk management<br>• Process for reviewing mitigation activities<br>• Certification and issuance of mitigation outcomes (MOs) and related processes under domestic methodologies<br>• Solicitation of input from technical experts and nongovernmental entities<br>• Process for grievances and appeals | • Tracking system (for example, national tracking, issuance, and/or transactional registry) for mitigation activities, MOs generated, and Internationally Transferred Mitigation Outcomes (ITMOs) transferred, including links with international registries where required<br>• Application of corresponding adjustments for ITMOs<br>• Article 6 authorization process for cooperative approaches, ITMOs, and entities, including issuance of Letters of Authorization<br>• Approval and authorization of Article 6.4 Emission Reduction (A6.4ERs) and participating entities<br>• Paris Agreement Article 6.2 and 6.4 participation requirements (UNFCCC 2021a)<br>• Levies and fees applied to ITMOs |

*Source:* Original for this publication.

32 See **appendix C** for a discussion of Paris Agreement reporting requirements and overlaps with Article 6.2 and 6.4 national reporting.

**Figure 2.2** Decision Steps for Defining Responsible Authorities

| STEP | | |
|---|---|---|
| 1 | **Map existing roles and capacities against required governance function** | What relevant entities already exist and what are their mandates?<br>Is there an existing entity(ies) that would be appropriate to implement and oversee the carbon market framework?<br>See **Table 2.2** for example governance functions for a carbon market framework (not exhaustive). |
| 2 | **Evaluate existing authority and institutional capacity** | Does the relevant existing entity(ies) have sufficient authority and capacity to implement and oversee the carbon market framework? |
| 3 | **Determine whether an existing or new entity is needed** | Based on the answer to the evaluation under Step 2:<br>• **If yes:** Proceed to Step 4.<br>• **If yes, but additional authority or capacity is needed:** Establish necessary authority and implement capacity building measures. See Chapter 3 for legal instrument considerations. Proceed to Step 4.<br>• **If no:** Establish new entity. Proceed to Step 4. |
| 4 | **Define responsible authorities and governance functions** | Whether vesting implementation and oversight of the carbon market framework with an existing entity(ies) or establishing a new entity(ies), the governance of the framework will require:<br>• High-level decision making<br>• Administration and implementation<br>• Technical advice<br>See **Table 2.3** for example legal text for defining these roles and their respective functions. |

*Source:* Original for this publication.

Evaluating institutional government capacity is particularly important when developing the carbon market legal framework as many of these implementation realities, including Article 6 of the Paris Agreement, are new. Without adequate institutional capacity, including technical expertise, administrative systems, and oversight mechanisms, a country may face financial and legal liability from market failures, noncompliance with international standards, or disputes with market participants. See **Box 2.4** for a discussion of interinstitutional coordination.

The World Bank working paper, "Country Processes and Institutional Arrangements for Article 6 Transactions" (World Bank 2020a) describes the types of institutions needed to implement and oversee the carbon market framework,[33] including the following:

33 An alternative institutional arrangement would be to consolidate the authority over carbon markets into a single entity. This approach would create unified oversight and coordination across all carbon market activities, reducing potential conflicts or gaps between different institutions, and provide clear a point of contact for international partners, buyers, and project proponents. This consolidation of power into one entity could create a bottleneck if the single authority becomes overwhelmed or lacks sufficient resources and requires institutional capacity in one entity to manage complex technical and administrative functions across the market.

- **High-level decision body:** Establishes overall policy direction pursuant to legal mandate, approves major program decisions, and ensures alignment with national climate objectives and international commitments.
- **Executive body or administrative entity:**[34] Develops and approves detailed rules, procedures, and implementation guidance based on the legal mandate; manages the operations critical to implementation, including application processing, authorization decisions, and registry maintenance.
- **Technical advisory committee:** Provides specialized expertise on technical issues, reviews technical submissions, and recommends best practices to support decision-making across all governance levels (World Bank 2020a).

The implementation and oversight of a country's carbon market framework should be set forth in law, noting the roles and responsibilities of designated government entities. Whether the responsible authorities are defined by statute or regulation will largely depend on a country's local circumstances and policy preferences. Many countries have existing statutes that grant ministries authority for climate change, often covering roles and responsibilities related to participation in the UNFCCC and oversight of Paris Agreement commitments. The country should assess the legal authorities of existing government agencies, ministries, and institutions to determine whether specific carbon market governance falls within an entity's existing regulatory authority. If not, the country would need to either establish responsible authorities under a new law or amend an existing law to grant or change an existing entity's mandate to establish the necessary authority (GGGI 2023a). See **Chapter 2.1** for benefits and challenges regarding legal framework instrument types.

A country may choose to utilize a nongovernment entity for specific implementation functions, such as relying on carbon crediting standards or registries.[35] When doing so, the country should establish conflict-of-interest protocols to ensure that entities with commercial interests in carbon market outcomes do not compromise the integrity of regulatory oversight or decision-making processes. Additionally, a country may decide to allow nongovernment stakeholders to participate in specific processes to enhance the carbon market framework - for example, as part of a technical advisory body. Soliciting stakeholder input on technical decisions may increase their buy-in for the carbon market framework and bolster market credibility. For example, relevant technical experts, such as members of industry associations or academia, can encourage decisions based on rigorous analysis of methodologies and technical requirements to promote high-integrity principles.

34 Depending on the particular country circumstances, these governance functions could be separated and allocated to two entities.

35 See **Chapter 3.2** for options and considerations for determining legal issues related to approved carbon crediting standards.

### Box 2.4 Interinstitutional Coordination Approaches

Effective carbon markets management requires communication and coordination among government entities. Coordination needs vary depending on national climate policy and carbon market priorities.[a] A country could leverage existing cross-ministerial coordination bodies established for its Long-Term Strategy (LTS) and Nationally Determined Contribution (NDC) development and implementation rather than creating parallel structures, focusing coordination at decision-making and technical advisory levels where needed.

Distributed governance functions require a lead entity with clear authority and legal and political stature to effectively coordinate among the institutions responsible for administering the carbon market framework. Interinstitutional coordination supports multiple carbon market functions: implementing the framework in conjunction with national carbon pricing mechanisms or other domestic climate policies; managing Article 6 authorization, corresponding adjustments, and Internationally Transferred Mitigation Outcome (ITMO) transactions; and minimizing overselling risks while optimizing the value of carbon finance for each sector. Institutional arrangements that encourage transparency can minimize policy gaps, overlapping mandates, and duplicative regulations while promoting efficiencies. Tensions among line ministries for autonomy or primacy increase when the role, legal authority, and political stature of the coordination body is unclear (World Bank 2020a).

The coordination function varies by governance model. In more centralized models, coordination entails information sharing and consultations across ministries, with decision-making and implementation remaining with the primary and administrative authorities, respectively. In highly decentralized models in which line ministries implement carbon market functions within their own sectors, the coordination body receives decisions from other ministries and ensures coherence across them.

a. Cross-government collaboration can be challenging. In surveying 29 countries as part of the A6IP annual status report, the Institute for Global Environmental Strategies found that 28 percent of respondents identified "interministerial coordination issues" and other policy challenges as key barriers to Article 6 implementation (IGES 2024).

A more inclusive approach to implementing the carbon market framework can foster broad stakeholder buy-in and improve transparency in decision-making. However, distributing decision-making authority among too many entities, particularly regarding the issuance of LoAs, could create operational complications that undermine the country's efficiency and responsiveness as a key actor in the

carbon market. Therefore, a framework must balance inclusiveness and specialized expertise residing within various government entities with the benefits of streamlined, centralized decision-making over critical market functions. See **Box 2.5** for an example from Ghana.

### Box 2.5 Country Spotlight: Designating Governance Functions and Responsible Authorities



**GHANA**

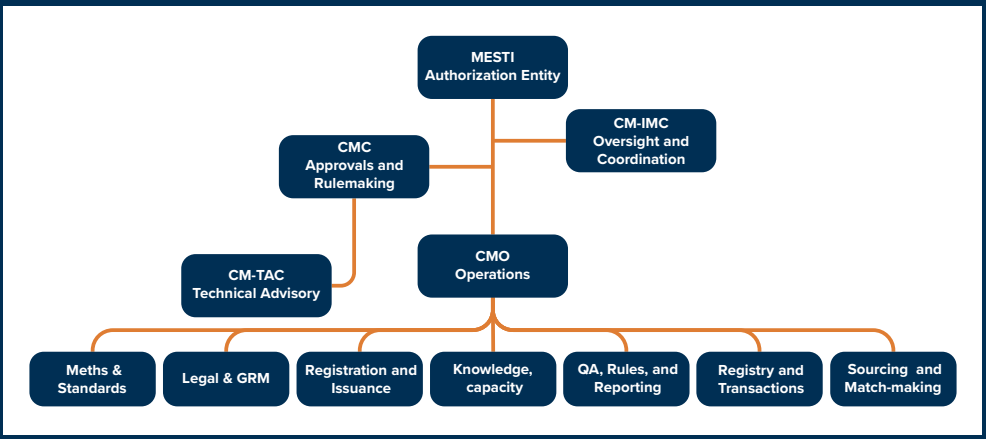
**Title:** Framework on International Carbon Markets and Non-Market Approaches (2022) (Framework)[a]

**Legal instrument:** The Framework is grounded in the Environmental Protection Agency Act (EPA), 1994 (Act 490), which requires the Environmental Protection Agency to prescribe standards and guidelines relating to all aspects of the environment. The EPA was amended, and the Environmental Protection Act, 2025 (Act 1124)[b] upgraded the agency to the Environmental Protection Authority, made it the designated national authority (DNA), and extended its mandate to include the implementation of cooperative approaches under Articles 6.2 and 6.4.

**Relevant legal framework option:** Designate multiple entities with authority over carbon markets (see **Table 2.3**).

**Description:** Ghana's Framework designates the Ministry of Environment, Science, Technology, and Innovation (MESTI) as the primary authority responsible for overseeing the implementation of the country's Article 6.2 participation. While MESTI provides policy direction and oversees authorization, carbon market governance functions are distributed across multiple agencies, including the Carbon Market Inter-Ministerial Committee, Carbon Market Committee, and the Carbon Market Technical Advisory Committee. **Figure B2.5.1** demonstrates how administrative authority - related to rulemaking, coordination, and technical advice, among others - is distributed across entities.

**Figure B2.5.1** Institutional Arrangements for Ghana's Article 6.2 Engagement (Section 4.2.1 of Ghana's Framework)




*Source:* Original for this publication.

*Note:* CM-IMC = Carbon Market Inter-Ministerial Committee; CMC = Carbon Market Committee; CM-TAC = Carbon Market Technical Advisory Committee; CMO = Carbon Market Office; GRM = grievance redressal mechanism; MESTI = Ministry of Environment, Science, Technology, and Innovation; QA = quality assurance.

a. Ghana Carbon Market Office 2022.
b. See Environmental Protection Act 1124. https://www.brr.gov.gh/acc/registry/docs/Environmental-Protection-Act-2025-Act-1124.pdf.

## Legal Framework Options

**Table 2.3** outlines a legal framework option for incorporating carbon market governance and responsible authorities into a carbon market framework across primary, administrative, and technical authorities.[36]

For each authority, a country should clearly define governance functions, publicly communicate decision-making authority, and establish a designated point of contact for market participants. Indicative governance functions are provided, but they would need to be modified to align with other framework choices and local considerations.

36 Another option is to vest authority over carbon markets in a single entity, as in South Korea.

**Table 2.3** Legal Framework Option for Carbon Market Governance Functions and Responsible Authorities

| OPTION: Designate multiple entities with authority over carbon markets. | |
|---|---|
| Advantages | • Vesting policy direction in a primary authority creates a unified approach and oversight across all carbon market activities.<br>• Relying on a separate administrative authority for rulemaking and coordination facilitates bureaucratic attention to day-to-day operations and consistent policy implementation.<br>• Establishing a technical committee provides a pathway for the inclusion of technical expertise into carbon market decision-making. |
| Disadvantages | • Requires coordination between primary, administrative, and technical authorities to ensure cohesion and efficient management<br>• Involves more administrative effort to set up and operate because multiple entities are involved<br>• Creates potential for interagency conflict and inefficiencies |
| Example legal text | **Section II. Institutions and Governance**<br>**A. Responsible authorities and governance functions**<br>1. The [insert government entity (for example, Ministry of Environment)] (the "Primary Authority") shall oversee the development of all voluntary carbon market (VCM) and international compliance market activities, including Article 6 of the Paris Agreement. The Primary Authority shall be responsible for the following [insert governance functions]:<br>**{Indicative governance functions (not exhaustive)}**<br>a. Establish overall policy direction.<br>b. Approve major program decisions.<br>c. Ensure alignment with national climate objectives and international commitments.<br>d. ....<br>2. The [insert government entity (for example, Carbon Market Office)] (the "Administrative Authority") shall be responsible for administering carbon market activities consistent with the direction of the Primary Authority, including developing and approving rules, procedures, institutional coordination, and implementation guidance and managing the operations necessary for implementation. The Administrative Authority shall be responsible for the following:<br>**{Indicative governance functions (not exhaustive)}**<br>a. Develop, adopt, and enforce regulations for the VCM and for the authorization, issuance, and transfer of Internationally Transferred Mitigation Outcomes (ITMOs) under Article 6.2 and credits generated under the Paris Agreement Crediting Mechanism (PACM), including: |

**OPTION: Designate multiple entities with authority over carbon markets.**

i. Administer authorization process, including submission and evaluation of authorization requests.

ii. Issue authorizations for ITMOs and Letters of Authorization (LoAs) as needed.

iii. Apply corresponding adjustments consistent with the Article 6 authorization guidelines[37] to prevent double counting.

iv. Assign the designated national authority (DNA) for purposes of Article 6.4.

v. [Administer information submission for VCM activities and issue Letters of Endorsement as needed].

vi. Establish requirements for use of a carbon credit registry and associated registry functionality.

vii. Identify, evaluate, and approve carbon crediting standards, including international and/or independent third-party carbon methodologies.

viii. Submit periodic reports to the United Nations Framework Convention on Climate Change (UNFCCC) and other relevant bodies, including information on Article 6-related activities.

ix. Coordinate across relevant ministries and government entities - including those responsible for climate change, environment, energy, finance, planning, and foreign affairs - to ensure policy coherence and effective governance related to carbon market activities.

x. ...

3. The [insert government entity (for example, technical advisory committee)] (the "Technical Authority") shall be responsible for providing specialized expertise on technical issues, reviewing technical submissions, and recommending best practices to support decision-making across all governance levels. The Technical Authority shall provide input to the Administrative Authority as requested, including for the following:

   **{Indicative governance functions (not exhaustive)}**

   a. Provide technical input on carbon crediting standards and methodologies, and guidelines.

   b. Convene a technical committee or advisory body to solicit input from technical experts and nongovernment stakeholders to enhance the carbon market framework.

   c. ...

*Source:* Original for this publication.

37 See **Chapter 6.2.** on authorization options. Some countries have begun to issue LoAs; however, these authorizations should only be issued by the appropriate authority, which should be clarified in the legal framework.

## 2.4. Key Takeaways

- Establishing clear rules and predictable regulations for participation in carbon markets improves the ease of doing business and reduces uncertainty.
- The most durable approach is to adopt a comprehensive statutory and regulatory framework; however, a country that is starting with a robust policy landscape related to climate change, green finance, and sustainable development may be able to rely on the interpretation and guidance of various existing policies.
- The selection and implementation of legal frameworks to support carbon market participation are highly country-specific and should be informed by a country's existing policy landscape and legal framework, including its constitution.
- The legal framework should establish clear legal authority for the designated government entities to oversee, develop, adopt, and enforce carbon market laws and regulations. Whether codified in statutes or regulations, the legal framework should explicitly outline specific governance functions (like authorization processes, registry management, resourcing, coordination, and enforcement authority) and assign them to designated entities. Whether an existing statute is sufficient or a new statute is needed will depend on an analysis of current laws in the country and will be informed by policy decisions.



# 3 MITIGATION ACTIVITY DESIGN AND DEVELOPMENT

This chapter provides guidance on the legal options available to a country for defining approved mitigation activities, establishing or selecting approved carbon crediting standards, implementing both supply-side and demand-side integrity requirements, and validating mitigation activities. This section of the Legal Toolkit establishes the foundation for how carbon credits are generated within a country's jurisdiction. To start, **box 3.1** distinguishes between ERRs and carbon credits as distinct units in carbon markets.

**CARBON MARKET LEGAL FRAMEWORK OUTLINE**

**Section I. Purpose and Definitions**
A. Purpose
B. Definitions

**Section II. Legal Instruments and Institutions**
A. Responsible authorities and governance functions

**Section III. Mitigation Activity Design and Development**
A. Approved sectors and activities for generating ITMOS
B. Approved carbon crediting standards and methodologies
C. Aligning mitigation activities at multiple levels
D. Social and environmental integrity requirements
E. Integrity requirements for the use of carbon credits
F. Mitigation activity validation

**Section IV. Monitoring, Reporting, and Verification**
A. Mitigation activity MRV

**Section V. Carbon Rights, Credit Issuance, and Registry Procedures**
A. Legal nature and available rights in emission reductions or removals
B. Legal nature and available rights in carbon credits
C. Carbon credit issuance
D. Registry procedures

**Section VI. Carbon Credit Transactions**
A. Procedures for nonauthorized carbon credits
B. Procedures for ITMO authorization
C. Procedures for A6.4ERS
D. Levies and fees
E. Allocation of revenue

**Section VII. Enforcement and Dispute Resolution**
A. Enforcement authority and powers
B. Dispute resolution

**Section VIII. Appendixes**

### Box 3.1 Definitional Clarification: ERR versus Carbon Credit

While sometimes used interchangeably in practice, emission reductions or removals (ERRs) and carbon credits represent different stages in the carbon crediting process.

- **ERR:** An ERR is a quantified and independently verified ton of carbon dioxide equivalent ($tCO_2e$) reduced or removed, calculated using an agreed methodology. ERRs are the underlying outcomes from which carbon credits can be generated by a carbon crediting mechanism or standard recognized by the country.
- **Carbon credit:** A carbon credit is a standardized, tradeable unit that represents the economic and environmental value derived from implementing verified ERRs, with one carbon credit representing one $tCO_2e$ certified by a carbon crediting standards body and recorded in a registry.

This Legal Toolkit uses "carbon credits" as an umbrella term for all units representing ERRs, whether used for compliance or voluntary purposes. When these carbon credits are authorized for international transfer under Article 6.2, they are referred to as "authorized carbon credits" or "Internationally Transferred Mitigation Outcomes (ITMOs)". ERRs in the context of Article 6 are sometimes referred to as mitigation outcomes (MOs).

## 3.1. Approved Sectors and Activities for Generating ITMOs

### Overview

Under Article 6.2, a country must authorize mitigation activities and ITMOs before they can be internationally transferred with corresponding adjustments.[38] A country may prefer to explicitly define approved sectors and activities for authorized carbon credits because of the NDC implications associated with corresponding adjustments (World Bank 2023). In contrast, a country may take a more permissive approach

38 This Legal Toolkit does not delve into corresponding adjustments. Countries must also consider questions involving corresponding adjustment, such as timing mismatches between issuance, transfer, and use; conditional or partial adjustments; reversals and ***ex post*** corrections; and potential divergence between host country authorization and buyer claims.

to nonauthorized carbon credits, allowing the VCM to serve as a laboratory for innovation where new methodologies and mitigation approaches can be tested without NDC consequences. Given these NDC implications, this section focuses on approval determinations for ITMOs under Article 6, which require more careful strategic consideration than nonauthorized credits.

Explicitly defining sectors and activities approved to generate ITMOs provides clarity and confidence to participants in mitigation activities, credit buyers, and investors, while enabling the country to direct market activity toward national priorities. Countries have employed the following two primary approaches to define approved sectors and activities:

- **List-based approach:** A country can incentivize priority sectors and activities through positive lists or exclude certain sectors and activities through negative lists. While a positive list indicates approval, it does not guarantee automatic authorization. See **Box 3.2** for an overview of positive versus negative lists.
- **Case-by-case approach:** Rather than creating predetermined lists, a country can evaluate each proposed mitigation activity individually against defined eligibility principles and criteria. Approval decisions under this approach can establish precedents over time, creating expectations about approved activity types. A country should maintain transparent and consistent processes to ensure equitable treatment of similar applications.

A country should consider mitigation priorities and marginal abatement costs when determining what sectors and activities belong on a positive or negative list (World Bank et al. 2025).[39] Marginal abatement cost analysis helps identify which mitigation activities require higher investment and may qualify for international carbon finance through ITMO transfers if the price paid matches costs. By prioritizing higher-cost mitigation activities for international transfer, a country can access external financing for expensive mitigation while preserving lower-cost domestic mitigation options to achieve its own NDC targets. This approach enables a country to pursue more ambitious climate action than would be possible with domestic resources alone. **Box 3.3** highlights how Ghana defines approved sectors and ITMO-generating activities.

39 Decisions on approved mitigation activities would benefit from a marginal abatement cost curve analysis.

### Box 3.2 Overview of the List-Based Approach

When defining approved sectors and activities using a list-based approach, the country can use a positive list or a negative list, as follows:

- **Positive list:** A positive list explicitly defines sectors and activities approved for generating Internationally Transferred Mitigation Outcomes (ITMOs). Countries typically include sectors and activities that are investment priorities (that is, where they need support for implementation) or activities that are not needed to meet the country's unconditional Nationally Determined Contribution (NDC).[a]
- **Negative list:** A negative list explicitly defines sectors and activities not approved for generating ITMOs. These activities may be excluded because they are needed to meet the unconditional NDC, outside the NDC scope,[b] or supported by other domestic policies.

a. While the Paris Agreement does not establish the concept of conditionality, many developing countries voluntarily structure their NDCs into two parts: unconditional targets that they will achieve with domestic resources and existing international support, and conditional targets, which are more ambitious goals that they will pursue only with substantial new international finance, technology transfer, or capacity-building assistance. Because unconditional NDCs represent a country's "guaranteed climate commitments," missing these targets creates greater international scrutiny than failing to achieve conditional goals that depend on external support.
b. Article 6.2 guidance must be consistently applied to all ITMOs, whether or not the sector or activity is included in the country's NDC. Transferring ITMOs from outside the NDC will require the country to deliver additional mitigation from covered sectors to account for the emissions added to the NDC emissions balance when applying the corresponding adjustment. However, there could be benefits for transferring ITMOs from outside the NDC scope, including generating finance that can be reinvested into NDC achievement or building datasets to help include the sector in the next NDC update.

Some countries base their positive or negative lists on whether activities fall under the conditional or unconditional parts of their NDC.[40] Where NDCs explicitly distinguish conditional and unconditional components, linking approval to generate ITMOs to conditional NDC targets can minimize overselling risks,[41] where a country internationally transfers so many credits that it cannot meet its own NDC targets. However, this approach may not direct investment toward the most

40 See note a in **Box 3.2**.

41 Only credits with a corresponding adjustment will impact country NDC achievement. Credits used for voluntary purposes do not require authorization or a corresponding adjustment. However, authorized carbon credits with a corresponding adjustment will likely have a price premium compared to nonauthorized, nonadjusted carbon credits. The decision to offer a corresponding adjustment to sellers of mitigation activities generating nonauthorized carbon credits (to on-sell to the buyers) should include a consideration of the pricing differences and revenue objectives for the country.

important sectors and activities for the country's development priorities.[42] A country must therefore weigh the risk-management benefits of this approach against the potential opportunity costs of excluding high-impact mitigation measures. Where NDCs do not explicitly distinguish between conditional and unconditional components, a country should develop alternative criteria for determining approved sectors and activities that balance overselling risk management with investment priorities. See **Chapter 6** for additional details on strategies for managing overselling risks.

### Box 3.3 Country Spotlight: Defining Approved Sectors and Activities for Generating ITMOs



**GHANA**

**Title:** Framework on International Carbon Markets and Non-Market Approaches (2022) (Framework)[a]

**Legal instrument:** The Framework is grounded in the Environmental Protection Act of 1994 and the amended Environmental Protection Act of 2025 (further elaborated in **box 2.5**).

**Relevant legal framework options:** Option 1: Establish a positive list of sectors and activities that are approved to generate Internationally Transferred Mitigation Outcome (ITMOs). Option 2: Establish a negative list of sectors and activities not approved to generate ITMOs. Option 3: Approve mitigation activities to generate ITMOs on a case-by-case basis (see **table 3.1**).

**Description:** Ghana's Framework demonstrates a comprehensive approach to defining eligible sectors and activities that combines elements across the various policy options outlined in **table 3.1**, demonstrating that these options are not mutually exclusive. The framework establishes both a whitelist of activities[b] (positive list) and a red list of excluded activities (negative list), while also incorporating case-by-case eligibility assessment criteria.

42 Separating eligibility by conditionality can create uncertainty in cases where the NDC does not separate unconditional and conditional elements by sector. For example, if the unconditional NDC target is an X percent reduction across all sectors and the conditional NDC target is an additional Y percent across all sectors, and the carbon market legal framework states that only activities under the conditional portion of the NDC are approved, it will be difficult for market actors to assess what sectors or activity types will be eligible in the carbon market.

- **Positive list:** Ghana has developed a whitelist of activities that are deemed automatically "additional to the Nationally Determined Contribution (NDC)" target, meaning that the activities fall under conditional parts of the NDC. The first whitelist includes several activities across the waste and waste-handling sector, renewable energy technologies, and sustainable cooking. The whitelist spans 2022–2025 and may be updated by the Carbon Market Office, with approval from the Carbon Market Committee. While the activity types are automatically additional, the projects themselves are still subject to the review and approval processes.
- **Negative list:** The Framework also establishes a red list of mitigation activities that are explicitly excluded from requesting authorization for international transfer. The nine ineligible mitigation activities are those listed as unconditional programs and activities within Ghana's NDC.
- **Case-by-case basis:** Activities not specified by either list may still be eligible for authorization if the activity is outside the NDC, the emission reductions or removals (ERRs) are included within Ghana's most recent National Greenhouse Gas (GHG) Inventory, and it is agreed to by the buyer. Mitigation activities outside of the whitelist must demonstrate financial and technical additionality.

This hybrid approach provides clarity for common mitigation activity types through preapproved categories while maintaining flexibility for innovative activities through case-by-case evaluation, ensuring comprehensive coverage without being overly restrictive.

a. Ghana Carbon Market Office 2022.
b. All mitigation activities on Ghana's carbon market framework whitelist must meet five criteria. They must: be part of the 25 conditional mitigation programs of the NDC, be aligned with sectoral regulations or carbon crediting standard requirements, contribute to sustainable development and demonstrate environmental integrity, be consistent with priority areas established in a bilateral agreement of a cooperative approach, and be aligned with relevant technologies in the Clean Development Mechanism's (CDM) positive list of technologies.

### Legal Framework Options

The example legal text in **Table 3.1** defines the sectors and activities approved for generating ITMOs. See **Chapter 6.2** for options related to authorization and the application of corresponding adjustments.

**Table 3.1** Legal Framework Options for Defining Approved Sectors and Activities for Generating ITMOs

| **OPTION 1: Establish a positive list of sectors and activities that are approved to generate ITMOs.** | |
|---|---|
| Advantages | • Provides clear guidance and certainty to project proponents and investors about approved sectors and activities<br>• Simplifies initial mitigation sector and activity screening and reduces administrative review burden<br>• Allows the country to direct carbon finance toward preferred sectors and activities |
| Disadvantages | • May exclude potentially valuable sectors and activities not initially anticipated<br>• Requires periodic updates to remain current with evolving technologies and opportunities<br>• Could limit market flexibility and innovation in emerging sectors |
| Example legal text | **Section III. Mitigation Activity Design and Development**<br>**A. Approved sectors and activities for generating ITMOs**<br>1. The Administrative Authority shall utilize the following criteria to evaluate sectors and activities approved to generate Internationally Transferred Mitigation Outcomes (ITMOs), including contribution to sustainable development, alignment with the Nationally Determined Contribution (NDC), [alignment with conditional NDC] [insert other country policy objectives].<br>2. The following "positive list" of mitigation activities shall be deemed to meet the criteria and approved to generate ITMOs: [insert list of approved sectors and activities].[43]<br>3. Activities that are part of the positive list are not automatically approved to generate ITMOs. Activities must utilize approved carbon crediting standards contained in Section [III.B][44] and comply with the authorization requirements set out herein.<br>4. The Administrative Authority shall maintain the list of approved sectors and activities and may add additional approved activities through [regulations] [guidance]. |
| **OPTION 2: Establish a negative list of sectors and activities not approved to generate ITMOs.** | |
| Advantages | • Promotes market flexibility by allowing all activities except those explicitly excluded<br>• Provides clear guidance and certainty to project proponents about what sectors and activities are not approved for ITMO generation |

43 The list of mitigation activity types would be based on policy decisions by the country but could include activities from one or more of the following sectors: energy, clean cooking, waste handling, agriculture, transportation, industrial processes, and forestry and land use. If a country has a preference for specific mitigation activity types, subsectors or activity types could be specified here.

44 This is a cross-reference to the framework section on approved carbon crediting standards.

| | |
|---|---|
| Disadvantages | • May exclude sectors and activities that are important for national climate and development objectives<br>• May create competitive disadvantages if the negative list creates too many restrictions compared to other jurisdictions |
| Example legal text | **Section III. Mitigation Activity Design and Development**<br>**A. Approved sectors and activities for generating ITMOs**<br>[. . .]<br>5. [1.] The Administrative Authority shall utilize the following criteria to evaluate sectors and activities deemed not approved to generate ITMOs, including lack of alignment with sustainable development, lack of alignment with the NDC, [insert other country policy objectives for a negative list].<br>6. [2.] The following "negative list" of sectors and activities shall be deemed not approved to generate ITMOs: [insert list of sectors and activities].[52] |
| **OPTION 3: Approve mitigation activities to generate ITMOs on a case-by-case basis.** | |
| Advantages | • Provides maximum flexibility to evaluate unique or innovative mitigation activity proposals<br>• Allows consideration of specific mitigation activity circumstances and national priorities<br>• Supports comprehensive assessment of complex or multisector activities |
| Disadvantages | • Creates uncertainty for project proponents regarding authorization prospects<br>• Requires institutional capacity and expertise for consistent decision-making<br>• May lead to lengthy authorization processes and increase transaction costs<br>• Could result in inconsistent decisions if evaluation criteria are not applied evenly |
| Example legal text | **Section III. Mitigation Activity Design and Development**<br>**A. Approved sectors and activities for generating ITMOs**<br>[. . .]<br>7. [1.] The Administrative Authority shall utilize the following criteria to evaluate sectors and activities on a case-by-case basis in order to determine whether the sector or activity is deemed approved to generate ITMOs, including alignment with sustainable development, alignment with the NDC, [insert other country policy objectives]... |

*Source:* Original for this publication.

## 3.2. Approved Carbon Crediting Standards and Methodologies

### Overview

#### Sources of carbon crediting standards and methodologies

Carbon crediting standards and methodologies serve as the operational foundation for carbon markets, establishing the rules governing how mitigation activities are implemented, measured, safeguarded, verified, and credited. **Box 3.4** distinguishes between carbon crediting standards and methodologies as requirements within carbon markets.

**Box 3.4 Definitional Clarification: Carbon Crediting Standard versus Methodology**

"Standard" and "methodology" are two key terms that are often used interchangeably but serve different functions.

- **Carbon crediting standard:** A carbon crediting standard outlines a set of detailed procedural requirements that must be met for a mitigation activity to generate carbon credits using that standard. The carbon crediting standard can be administered by international or independent bodies or national governments.
- **Carbon crediting methodology:** A carbon crediting methodology details the specific technical requirements for quantifying, monitoring, and verifying emission reductions or removals (ERRs) for different types of mitigation activities within carbon crediting standards.

A country can choose from the following three primary types of carbon crediting standards and methodologies, each with benefits and challenges (see **Table 3.2**):

- **Domestic mechanisms methodologies**: Examples include China Certified Emission Reduction and Thailand Voluntary Emission Reduction
- **International and bilateral mechanisms and methodologies**: Examples include the BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL), Japan's Joint Crediting Mechanism (JCM), the Methodological Framework of the Forest Carbon Partnership Facility (FCPF), the Paris Agreement Crediting Mechanism (PACM) developed by the UNFCCC, and the Standardized Crediting Framework developed and supported by the Carbon Initiative for Development (Ci-Dev)

- **Independent mechanisms and methodologies**: Examples include Architecture for REDD+ Transactions' The REDD+ Environmental Excellence Standard (ART TREES), Gold Standard, and Verra.

**Table 3.2** Overview of the Carbon Crediting Standards and Methodologies

| Approach 1: Domestic standards and methodologies | Approach 2: International and bilateral standards and methodologies | Approach 3: Independent standards and methodologies |
|---|---|---|
| **Methodologies designed by the country** | **Methodologies managed by international entities (for example, UNFCCC PACM), and methodologies agreed between the transaction buyer and seller (for example, JCM)** | **Methodologies managed by independent, nongovernment entities (for example, carbon crediting standards traditionally used in the VCM)** |
| Can be tailored to a country's national context | Global application, but may be less tailored to a country's national context | |
| Require significant government capacity | Harnesses the efficiencies and experiences of global entities | |
| Time and resource intensive | Lower cost and faster implementation | |
| May not be acceptable for international buyers and transactions | International buyer familiarity and acceptance, particularly in compliance markets | International buyer familiarity and acceptance, particularly in the VCM and CORSIA |
| Afford greatest country control | May require future framework review and amendments[45] | |

*Source:* Original for this publication.

*Note:* CORSIA = Carbon Offsetting and Reduction Scheme for International Aviation; JCM = Japan's Joint Crediting Mechanism; PACM = Paris Agreement Crediting Mechanism; UNFCCC = United Nations Framework Convention on Climate Change; VCM = voluntary carbon market.

45 An approved carbon crediting standard may not remain fully aligned with country priorities or circumstances, as changes over time can create potential complexities with the country framework.

Developing carbon credit methodologies is a highly technical and time-consuming endeavor. It requires detailed baseline[46] and GHG quantification analysis, measurement and monitoring requirements, safeguards, permanence mechanisms, stakeholder consultation and public comment, and revision and review cycles for future updates (World Bank 2021a). These requirements can be particularly challenging for a country with limited capacity and resources. Additionally, these credits may have less international demand than those issued under international and independent carbon crediting standards (Spalding-Fecher, Macias, and Guzmán Barraza 2022). To avoid developing new, bespoke methodologies, the country may wish to adopt existing methodologies from international or independent carbon crediting standards, or adapt those methodologies as needed to better fit national circumstances.

**Carbon crediting approaches**

The crediting approach can be project-based, programmatic, policy-based, sectoral, or jurisdictional. **Table 3.3** describes these primary crediting approaches and their scopes, which are further elaborated in World Bank 2025b.

To date, the carbon market has been dominated by project-scale and programmatic crediting; however, jurisdictional crediting approaches are becoming more popular, and one policy-based crediting program was recently developed in Uzbekistan under the Transformative Carbon Asset Facility (TCAF).[47] The selection of crediting approaches should align with a country's mitigation priorities, institutional capacity, financing needs, and the specific characteristics of available mitigation opportunities (World Bank 2025b; World Bank et al. 2025).

The approach impacts the scale, scope, and governance of mitigation activities, which require the appropriate methodologies. For instance, jurisdictional mitigation activities require jurisdictional carbon crediting standards and methodologies, such as the Methodological Framework for FCPF or ISFL, or ART TREES. A country can incorporate multiple approaches within its framework, though careful attention must be paid to preventing overlaps that could lead to double counting or double crediting (World Bank et al. 2025). See **Chapter 3.3** on framework options for aligning mitigation activities at multiple levels.

46 A baseline represents the projected emissions or removals that would have occurred without any carbon market intervention, creating a business-as-usual comparison scenario (known as a counterfactual). Carbon credits are often calculated by measuring the difference between this baseline and ERRs achieved. Because carbon credits are issued based on performance above the baseline level, setting accurate and conservative baselines helps prevent issuing too many credits and maintain market integrity (World Bank et al. 2025).

47 See Uzbekistan iCRAFT: https://www.tcafwb.org/programs/uzbekistan-icraft.

**Table 3.3** Overview of Carbon Crediting Approaches

| Crediting approach | Scope |
|---|---|
| **Project** | Focuses on individual projects or technologies, representing the traditional approach to carbon markets (for example, project-scale crediting under independent carbon crediting standards) |
| **Programmatic** | Encompasses large numbers of similar, often small-scale, activities grouped together (for example, CDM Programme of Activities, which can aggregate hundreds of similar interventions) |
| **Policy** | Addresses policy interventions that create system-wide ERRs (for example, carbon pricing or subsidy reforms) |
| **Sectoral or Jurisdictional** | Based on performance that exceeds sectoral, subnational, or national targets (for example, jurisdictional REDD+ under FCPF or ART TREES) |
| **Economy-wide** | Establishes a single target for ERRs across all sectors to cover the entire economy (for example, may be most appropriate for small island developing states) |

*Source:* Original for this publication.

*Note:* ART TREES = Architecture for REDD+ Transactions The REDD+ Environmental Excellence Standard; CDM = Clean Development Mechanism; ERRs = emission reductions or removals; FCPF = Forest Carbon Partnership Facility; REDD+ = Reducing Emissions from Deforestation and Forest Degradation.

### Assessment protocols for carbon crediting standards and methodologies

As a country develops its carbon market legal framework, it can benefit significantly from leveraging existing assessment protocols designed to evaluate the quality and integrity of carbon crediting standards and methodologies. These protocols provide established criteria and benchmarks that can inform domestic decisions about which standards and methodologies to accept, reducing the need for the country to develop entirely new ones.

Two notable sources for assessing carbon crediting standards and methodologies include:

- **ICVCM Core Carbon Principles (CCPs):** The ICVCM has established 10 CCPs across three key themes: governance (ensuring transparent and accountable program management); emissions impact (requiring that credits represent real, additional, and permanent ERs); and sustainable development (promoting positive environmental and social cobenefits). These principles serve as rigorous thresholds for environmental integrity and are increasingly recognized by market participants as indicators of high-quality credits (ICVCM 2024).

- **ICAO's CORSIA Eligible Emissions Units:** CORSIA, administered by the ICAO, has established its own Emissions Unit Eligibility Criteria for assessing carbon crediting standards and methodologies in the context of international aviation. Each eligible carbon crediting standard under CORSIA is subject to conditions on vintage, country authorization, and specific methodology exclusions. This approach provides another valuable reference point for countries, particularly those seeking to ensure their domestic carbon credits can be used in international compliance markets, such as CORSIA (ICAO 2019).

The country can use these existing assessment protocols as benchmarks for approval (for example, requiring that carbon crediting standards meet ICVCM CCP or CORSIA criteria), as guidance for developing tailored national criteria, or as complementary tools for ongoing evaluation of carbon crediting standard quality (see **Box 3.5**).

### Box 3.5 Country Spotlight: Defining Approved Carbon Crediting Standards and Methodologies

**PERU**



**Title:** Supreme Decree N.º 010-2024-MINAM – Provisions for the National Registry of Mitigation Measures (RENAMI) (Decreto Supremo N.º 010-2024-MINAM – Decreto Supremo que Aprueba las Disposiciones para el Funcionamiento del RENAMI)[a] (Decree)

**Legal instrument:** The Decree was established in accordance with the Climate Change Framework Law (Ley Nº 30754, Ley Marco sobre Cambio Climatico) and the Supreme Decree that approves the Climate Change Framework regulations (Decreto Supremo Nº 013-2019-MINAM, Decreto Supremo).

**Relevant legal framework option:** Approve carbon crediting standards and methodologies (see **Table 3.4**).

**Description:** Peru's Decree specifies precise criteria that carbon crediting standards and methodologies must meet to be eligible under the registry. Each carbon crediting standard is evaluated against criteria such as robust methodologies and tools, registration and tracking procedures, standard governance, sustainable development criteria, and safeguards. Methodologies are also evaluated against criteria such as transparency, quantification, leakage, and additionality.

Adhering to the prescribed criteria, Peru's Ministry of the Environment subsequently released an executive instrument (Resolución Directoral N.º 00001-2025-MINAM/VMDERN/DGCCD)[b] recognizing the first eligible carbon crediting standards and methodologies under RENAMI. The list includes methodologies under independent carbon crediting standards, including the Gold Standard (Technologies and Practices to Displace Decentralized Thermal Energy Consumption and Afforestation – Reforestation Greenhouse Gas Emission Reduction and Sequestration) and the Verified Carbon Standard (VCS) (VM0047 Afforestation, Reforestation, and Revegetation and VM0048 Reducing Emissions from Deforestation and Forest Degradation). The initial list enables project proponents and investors to progress carbon market activities while providing flexibility to the country to expand the list moving forward.

a. See Decreto Supremo N.º 010-2024-MINAM: https://cdn.www.gob.pe/uploads/document/file/7208519/6170928-decreto-supremo-010-2024-minam.pdf.
b. See Resolución Directoral N.º 00001-2025-MINAM/VMDERN/DGCCD. https://www.gob.pe/institucion/minam/normas-legales/6425892-001-2025-minam-vmdern-dgccd.

### Legal Framework Options

A best-practice approach to approving carbon crediting standards and methodologies involves establishing clear eligibility criteria that standards and methodologies must meet (such as requirements for additionality, realistic baselines, and independent verification) and maintaining a specific list of preapproved standards and methodologies that have been determined to satisfy these criteria.

This list of preapproved carbon crediting standards may include established international and/or independent benchmarks, as well as domestic methodologies. When incorporating references to approved carbon crediting standards, a country could list all approved methodologies, or, if it wants to accept only specific mitigation activity types, it could specify which methodologies are approved. The selection process can be informed by existing assessment protocols, such as the ICVCM CCPs or CORSIA. Recognizing carbon crediting standards does not represent a delegation of government authority to external entities. Instead, the country uses these established carbon crediting standards as the foundation for creating obligations that it can directly enforce through its own regulatory mechanisms.

Given the dynamic nature of carbon markets and the continuous evolution of carbon crediting standards and methodologies, a legal framework should

incorporate mechanisms for periodic updates to the list of approved standards.[48] This can be achieved by including provisions that authorize relevant agencies to add new carbon crediting standards and methodologies through regulatory or guidance processes, as shown in **Table 3.4**. However, a country should exercise caution regarding provisions allowing removal of methodologies. A country should retain flexibility to add or update carbon crediting standards but should only remove methodologies in exceptional circumstances, such as cases involving fraud or fundamental methodological failures.

**Table 3.4** Legal Framework Option for Defining Approved Carbon Crediting Standards and Methodologies

| OPTION: Approve carbon crediting standards and methodologies. | |
|---|---|
| **Advantages** | • Provides transparency about evaluation criteria and decision-making process<br>• Offers immediate market certainty through preapproved list of carbon crediting standards and methodologies<br>• Balances flexibility with structure by allowing future additions through established processes<br>• Leverages proven international and independent carbon crediting standards and methodologies while maintaining national oversight<br>• Reduces transaction costs for project proponents through clear eligibility guidelines |
| **Disadvantages** | • Requires initial institutional capacity to evaluate and maintain a list of approved carbon crediting standards and, if applicable, methodologies<br>• May exclude emerging or innovative methodologies not yet on the approved list<br>• Creates an ongoing administrative burden to review and update the list periodically<br>• Could limit market development if initial list is too restrictive or conservative<br>• Requires expertise to assess technical methodology quality and evolving best practices |

48 The timing of updates to approved carbon crediting standards should be market-driven rather than following a fixed schedule. The framework should authorize the primary authority to monitor market developments on an ongoing basis and initiate appropriate legal processes (such as notice and comment rulemaking) to add to or amend the list when warranted. However, policy stability promotes market confidence and investment certainty. Updates should focus on capturing meaningful advancements and ensuring continual improvement in methodology quality, rather than reflecting rapidly changing political priorities or frequent policy shifts.

**Example legal text**

**Section III. Mitigation Activity Design and Development**

. . .

**B. Approved carbon crediting standards and methodologies**

1. The Administrative Authority shall utilize the following criteria to evaluate carbon crediting standards and methodologies for approval to ensure they deliver Internationally Transferred Mitigation Outcome (ITMOs) that represent emission reductions or removals (ERRs) that [insert list of eligibility criteria]:

   **{Indicative eligibility criteria (not exhaustive)}**[49]

   a. Are additional;
   b. Are based on a realistic and credible baseline;
   c. Are quantified, monitored, reported, and verified;
   d. Have a clear and transparent chain of custody;
   e. Represent permanent emission reductions;[50]
   f. Assess and mitigate against potential increase in emissions elsewhere;
   g. Avoid double counting; and
   h. Do no net harm.

2. The following carbon crediting standards and methodologies shall be deemed to meet the criteria and approved ("approved carbon crediting standards"), including any subsequent amendments thereto: [insert list of approved carbon crediting standards].[51]

   **{Indicative list of carbon crediting standards (not exhaustive)}**

   a. Methodologies approved under the Paris Agreement Crediting Mechanism (PACM)[52]
   b. Methodologies deemed eligible under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
   c. Methodologies approved under the Integrity Council for the Voluntary Carbon Market (ICVCM) Core Carbon Principles (CCPs)

49 This indicative list is based on the CORSIA Emissions Unit Eligibility Criteria with minor edits (ICAO 2019).

50 See **Appendix A.1** for additional details on the issues of permanence and addressing reversals.

51 This list would include carbon crediting standards and, if applicable, selected methodologies that the country determines are appropriate for their circumstances and meet the defined criteria (for example, applies to technologies or activities that the country wants to encourage, has high environmental integrity, and promotes sustainable development). The indicative list provided includes examples of international and independent carbon crediting standards, but domestically developed methodologies could be added here as well.

52 A country including the PACM as an approved carbon crediting standard should monitor evolving requirements from the PACM Supervisory Body. For instance, ongoing discussions on nonpermanence and durability requirements may impact the eligibility of nature-based mitigation activities under the PACM.

d. Verified Carbon Standard (VCS)

e. Gold Standard

f. Architecture for REDD+ Transactions The REDD+ Environmental Excellence Standard (ART TREES).

3. The Administrative Authority shall maintain the list of approved carbon crediting standards and may add additional approved standards through [regulations] [guidance].

*Source:* Original for this publication.

## 3.3. Aligning Mitigation Activities at Multiple Levels

### Overview

Carbon crediting can occur simultaneously at different levels within the same geographic area, potentially creating overlaps between project- and jurisdictional-level (e.g., subnational and national) activities. Without proper coordination, these overlaps can result in serious accounting problems that affect the integrity of carbon markets, including the following types of double counting:

- **Double crediting:** The same ERRs counted for credits at multiple levels
- **Double claiming:** Multiple parties claiming the same environmental benefits
- **Double payment:** Double compensation for the same carbon credits.

Aligning mitigation activities at multiple levels is relevant for both NBS and other types of solutions (see **Box 3.7** for a country example). In the context of Reducing Emissions from Deforestation and Forest Degradation (REDD+), for example, individual projects and broader jurisdictional programs may operate within the same geographic area, raising concerns about double counting. To address potential conflicts and maximize benefits, many REDD+ countries use a process called "nesting" (**Box 3.6**). Nesting refers to the coordinated implementation of mitigation activities at multiple accounting and governance levels within a country (Granziera et al. 2021). This process involves harmonizing key elements, including baselines to ensure coherent carbon accounting and MRV, safeguards, and benefit-sharing arrangements.

When implemented effectively, nesting allows the country to capture the advantages of both approaches: leveraging local expertise and community engagement from project-level activities while benefiting from the broader policy impact and accounting scale of jurisdictional programs (Ward et al. 2024). See **Appendix A.5** for additional details regarding nesting in the context of NBS.

In a non-NBS context, coal transition methodologies face similar coordination challenges. Jurisdictional coal transition efforts, such as those under the Kinetic Coalition,[53] must reconcile accounting, credit ownership, and benefit distribution with individual coal plant operators.

When designing a nesting approach, a country should consider several key elements, including the following:

- Degree of centralization (see **Box 3.6** for a detailed comparison of approaches)
- Role of nonstate actors, including the private sector, NGOs, and communities
- Types of carbon finance to pursue (for example, carbon markets versus nonmarket results-based payments)
- Benefit-sharing arrangements (**Appendix A.4** covers benefit sharing for NBS) (World Bank 2021c).

### Box 3.6 Nesting Approaches

Following are the three main approaches for nesting:

- **Decentralized nesting:** Project-level baselines are calculated within the jurisdictional baseline. Each project receives an allocated portion of the jurisdictional baseline, ensuring that the sum of all project baselines equals (but does not exceed) that total. This may lead to smaller baselines or expected volumes of credits for the individual projects. Implications for accounting and crediting include the following:
  - Jurisdictional programs subtract project activities from their crediting calculations using nested baselines.
  - Credits are generated at both jurisdictional and project levels.

A key characteristic of this nesting model is that projects retain the ability to directly generate and receive carbon credits.

- **Centralized nesting:** All project activities within the jurisdiction use the jurisdictional baseline and are fully embedded under the jurisdictional program. Implications for accounting and crediting include the following:

53 See https://www.kinetic-coalition.org/our-approach/.

- No subtractions are required since crediting occurs only at the jurisdictional level.
- Projects contribute to jurisdictional outcomes and receive rewards through benefit-sharing mechanisms. Rewards may include credits, financial payments, or other benefits distributed by the jurisdiction.

- **Hybrid approach:** This method combines elements of both approaches within the same jurisdiction. Implications for accounting and crediting include the following:

  - Some activities continue under project methodologies using nested baselines (similar to the decentralized model). A jurisdictional program subtracts these projects from crediting calculations. Credits are generated at both the jurisdictional and project levels.
  - Other projects are fully embedded under the jurisdictional program (similar to the centralized model). Crediting occurs at the jurisdictional level only, and rewards are distributed through a benefit-sharing arrangement.

Each of these approaches is valid, but its appropriateness depends on national contexts.

## Box 3.7 Country Spotlight: Aligning Mitigation Activities at Multiple Levels

**KENYA**



**Title:** Guidelines on REDD+ Nesting in Kenya (Guidelines)[a]

**Legal instrument:** Kenya's Cabinet Secretary for Environment, Climate Change and Forestry launched the Reducing Emissions from Deforestation and Forest Degradation (REDD+) Nesting Guidelines in tandem with the REDD+ Registry in July 2025. The Guidelines articulate how project-level REDD+ activities can align with national accounting metrics to minimize the risk of double counting. The Cabinet Secretary's authority to issue such

operational guidelines is established in Kenya's Climate Change (Carbon Markets) Regulations 2024,[b] which were issued under the Climate Change (Amendment) Act, 2023.[c]

**Relevant legal framework option:** Require mitigation activities occurring at multiple levels to be aligned (see **Table 3.5**).

**Description:** Kenya's Guidelines provide a framework to integrate emission reductions or removals (ERRs) from REDD+ activities across multiple levels to prevent double counting. The Guidelines define procedures for aligning baselines, methodologies, and monitoring, reporting, and verification (MRV) protocols across projects and jurisdictions, promoting transparency, accuracy, and data consistency. Kenya's decentralized approach allows crediting at the project, subnational, and national levels. Mitigation activities must meet eligibility criteria, including using an eligible methodology (for example, Verra's Jurisdictional and Nested REDD+ program, Architecture for REDD+ Transactions The REDD+ Environmental Excellence Standard – ART TREES), identifying stakeholders, and undergoing a REDD+ safeguard assessment. All REDD+ project proponents must submit a nesting application to the REDD+ Coordination Unit through the Kenya REDD+ Registry, which was released alongside the Guidelines to enable transparent tracking of REDD+ carbon credits.

a. Republic of Kenya 2025.
b. See Legal Notice 84 of 2024: https://new.kenyalaw.org/akn/ke/act/ln/2024/84/eng@2024-06-07#part_III__sec_13.
c. See Climate Change (Amendment) Act, 2023 (Act No. 9 of 2023): https://new.kenyalaw.org/akn/ke/act/2016/11/eng@2023-09-15.

### Legal Framework Options

Countries are at various stages of developing nesting approaches, but few operational nesting frameworks currently exist. This creates both challenges and opportunities for legal framework design. The carbon market legal framework should acknowledge the need to align mitigation activities at multiple levels while maintaining sufficient flexibility to allow continued implementation of relevant activities. The framework should accommodate a "pathway to nesting" approach, allowing current activities to continue while transitioning toward full compliance with nesting once national guidance is established. This would address questions about prioritizing activities (such as pre-existing versus jurisdictional) when the new law is developed and implemented. It would also provide options for recognizing pre-existing commitments made under existing initiatives.

Nesting guidance[54] may vary significantly by sector, potentially requiring

- Delegated authority to appropriate ministries for developing sector-specific guidance;
- Sector-specific regulations administered by relevant government departments; and
- Flexible legal structures that can accommodate diverse sectoral approaches.

Detailed nesting guidance will most likely exist outside the primary carbon market legal framework due to the technical nature of the process. **Table 3.5** provides example legal text for incorporating requirements to align multilevel mitigation activities within a carbon market legal framework. The legal framework should establish the principle of nesting while allowing detailed implementation guidance to be developed through secondary instruments, ensuring both legal certainty and operational flexibility as nesting evolves.

**Table 3.5** Legal Framework Option for Aligning Mitigation Activities at Multiple Levels

| OPTION: Require mitigation activities occurring at multiple levels to be aligned. | |
|---|---|
| **Advantages** | • Prevents double counting of carbon credits across different scales and jurisdictions<br>• Creates a coherent national accounting framework that supports Nationally Determined Contribution (NDC) tracking and reporting<br>• Provides a clear pathway for nesting existing projects into broader jurisdictional programs |
| **Disadvantages** | • Requires significant technical expertise and institutional capacity to develop alignment frameworks<br>• May create complex administrative processes that delay project approvals and implementation<br>• Could discourage investment during transition periods due to regulatory uncertainty unless a "pathway to nesting" is clearly detailed<br>• Risks stalling current project-level activities while jurisdictional approaches are being developed, unless there is accommodation for a transition |

54 The term "guidance" refers to the type of content needed to address nesting processes, though the form it takes will depend on the legal instrument used - regulations if the framework is established by statute, or guidance if it is established by regulations.

| | |
|---|---|
| **Example legal text** | **Section III. Mitigation Activity Design and Development**<br>. . .<br>**C. Aligning mitigation activities at multiple levels**<br>1. Activities occurring at multiple levels (for example, project level, jurisdictional level, subnational level, and/or national level) must be aligned with respect to baselines,[55] accounting, crediting, and finance flows. The Administrative Authority shall develop [regulations][guidance][56] on how to align activities occurring at multiple levels.<br>2. During the transition period, while a jurisdictional approach is being developed, activities at the project and subnational level shall be allowed to continue as long as they are otherwise in compliance with applicable requirements. The Administrative Authority shall consider existing project and subnational activities when developing the jurisdictional approach, as well as the pathway and timeline for nesting such projects into the jurisdictional approach once the [guidelines] [regulations] are in place. |

*Source:* Original for this publication.

## 3.4. Social and Environmental Integrity Requirements

### Overview

Supply-side integrity requirements govern mitigation activities and project proponents that generate carbon credits, ensuring that these high-integrity actions deliver positive environmental and social outcomes while avoiding harm to communities and ecosystems. Environmental integrity, including additionality, permanence, and accurate quantification, is universally expected across all carbon markets and carbon crediting standards. Social integrity, such as meaningful stakeholder engagement and benefit-sharing arrangements, is similarly expected in any activity that impacts Indigenous Peoples (IPs) and local communities (LCs). Today's carbon market has evolved beyond avoiding negative impacts. Buyers increasingly expect mitigation activities to create measurable positive environmental outcomes and, where applicable, social cobenefits for communities (World Bank et al. 2025).

55 Aligning baselines with national frameworks does not mean simply dividing the national baseline evenly across all areas of a country. Baseline allocation requires technical analysis tailored to local conditions and deforestation patterns. For instance, allocating baseline emissions according to deforestation risk levels better reflects the real-world challenges faced by mitigation activities in high-risk areas. An even distribution approach would create significant distortions: low-risk or stable forest areas would be allocated more credits than their actual conservation efforts merit, while high-risk areas - where forest protection requires greater effort and investment - would receive too few. This misalignment would undermine both the environmental integrity of the system and the economic incentives needed to protect the most threatened forests.

56 If the framework is developed by statute, then this reference would be to regulations. If the framework is developed by regulations, then this reference would be guidance.

For a country participating in international compliance markets, such as Article 6, these expectations are reinforced by formal obligations under the Article 6.2 guidance, which requires a country to report in its biennial transparency reports (BTRs) how its cooperative approaches ensure environmental integrity; minimize negative environmental, economic, and social impacts; and respect human rights obligations.[57] **Box 3.7** shows how Cambodia promotes social and environmental integrity.

This chapter examines three fundamental elements of supply-side integrity: sustainable development contributions, environmental and social safeguards, and free, prior, and informed consent (FPIC).

Additional supply-side integrity elements, including conservative baseline setting, robust GHG accounting, and enhanced MRV (see **Chapter 4**), should also inform the selection of approved carbon crediting standards. **Appendix A** provides specific guidance on safeguards and benefit sharing for NBS.

### Sustainable development

There is a broad consensus that mitigation activities should deliver measurable sustainable development benefits in addition to ERRs. This expectation is embedded across major international frameworks and carbon crediting standards. For example, the ICVCM's CCPs mandate sustainable development benefits, CORSIA requires credits to demonstrate sustainable development contributions for eligibility, and carbon rating agencies increasingly evaluate mitigation activities based on their alignment with the United Nations (UN) Sustainable Development Goals (SDGs). When selecting approved carbon crediting standards and relevant methodologies, a country can prioritize those that already include sustainable development criteria, such as Gold Standard (2025b) or the PACM, or that encourage the use of add-on standards, like Verra's Sustainable Development Verified Impact Standard[58] or the Climate, Community, and Biodiversity Standards.[59] These leverage existing legal frameworks without requiring additional country oversight.

Countries like Zambia require mitigation activities to demonstrate contributions to national SDG priorities, while Uganda assesses these actions against specific sustainable development criteria during the approval process.[60] When designing

57 Specifically, a country must demonstrate how its approach reflects the Paris Agreement's recognition that climate action should respect and promote human rights, including the rights of IPs and LCs, migrants, children, persons with disabilities, and people in vulnerable situations, as well as gender equality and intergenerational equity. Additionally, cooperative approaches must be consistent with and contribute to the country's sustainable development objectives (UNFCCC 2021).

58 See Sustainable Development Verified Impact Standard: https://verra.org/programs/sd-verified-impact-standard/.

59 See Climate, Community, and Biodiversity Standards: https://verra.org/programs/ccbs/.

60 See paragraphs 2 and 35–37 in the National Climate Change (Climate Change Mechanisms) Regulations, 2025: https://www.nema.go.ug/en/wp-content/uploads/2025/05/The-National-Climate-Change-Climate-Change-Mechanisms-Regulations-2025.pdf.

these requirements, a country should balance meaningful sustainable development outcomes with minimizing administrative burdens on government institutions that may lack specialized carbon market expertise.

### Safeguards

Environmental and social safeguards ensure that mitigation activities minimize, and where possible, avoid negative impacts. These safeguards typically require meaningful stakeholder engagement from design to implementation, ensuring affected communities' input and participation, providing accessible information about risks and impacts, and establishing mechanisms to address community concerns. Safeguards also encompass protections for human rights, IPs' and LCs' rights, biodiversity conservation, and equitable benefit-sharing arrangements to ensure mitigation activities contribute to sustainable development rather than causing harm (Gold Standard 2022).

Safeguards can be established and enforced through complementary frameworks: international processes (for example, REDD+ Cancun Safeguards), national frameworks, and carbon crediting standards.[61] Although individual carbon finance transactions may require safeguards - especially when mitigation activities are financed by international financial institutions with their own protocols - [62]a country should establish comprehensive safeguard standards within its carbon market framework, rather than relying solely on transaction-specific conditions. Mitigation activities may need to satisfy multiple safeguard frameworks simultaneously, creating layered protection that can strengthen overall environmental and social outcomes while ensuring compliance with different stakeholder requirements. However, this can increase implementation complexity and require additional time and resources.

### Free, prior, and informed consent

FPIC is a fundamental right of IPs to give or withhold consent for any action affecting their lands, territories, resources, or rights (UN 2007). It enables IPs to determine whether and under what conditions mitigation activities may proceed, including through participation in design, implementation, monitoring, and evaluation, in order to ensure their rights are respected and protected, consistent with UN Declaration on the Rights of Indigenous Peoples (UNDRIP) articles 3, 19, and 32. FPIC should be

61 Verra's VCS maintains program-level safeguard requirements for all mitigation activities to prevent negative environmental or community impacts. ART TREES requires participants to demonstrate implementation of REDD+ actions consistent with the Cancun Safeguards. The carbon crediting standard provides detailed guidance by dividing the safeguards into specific themes and indicators to enable transparent reporting and third-party verification (ART 2021; Verra 2025).

62 For example, mitigation activities supported by World Bank trust funds such as TCAF and Ci-Dev must implement activities in compliance with the World Bank Environmental and Social Framework, which includes 10 environmental and social standards covering areas such as stakeholder engagement, labor conditions, biodiversity conservation, and IPs' rights.

understood as an ongoing process rather than a one-time consultation, requiring sustained engagement and reaffirmation of consent where there are material changes to the scope, impacts, or context of the mitigation activities.

FPIC requirements are established through the following complementary frameworks:

- **International legal instruments:** FPIC principles derive from international legal instruments, most notably the UNDRIP, which requires it for any mitigation activity affecting Indigenous lands, territories, or resources, particularly those involving development, utilization, or exploitation of natural resources.
- **National frameworks:** A country may establish FPIC requirements based on national Indigenous rights legislation, constitutional provisions, and institutional capacity for implementation.
- **Carbon crediting standards:** International and independent carbon crediting standards incorporate FPIC requirements into their mitigation activity approval and monitoring processes, with specific guidance on implementation and verification.

Specific transaction terms may also include FPIC requirements. For example, international financial institutions and development organizations often have their own FPIC frameworks that mitigation activities must comply with when receiving funding or technical support. The World Bank's Environmental and Social Framework requires borrowers to engage with stakeholders in a manner proportionate to the risks and impacts on affected communities and to obtain FPIC from affected IPs under specific circumstances outlined in Environmental and Social Standard 7 (World Bank 2017b).

FPIC applies beyond NBS or activities occurring directly on Indigenous lands. The Accountability Framework Initiative specifies that FPIC should be secured before commencing any activity that may affect IPs' rights, lands, resources, territories, livelihoods, or food security, regardless of the mitigation activity location (AFi 2019).

While FPIC is a core safeguard principle, a country must assess various factors when deciding whether to formalize it as an explicit legal requirement in its domestic carbon market frameworks. The decision depends on factors including existing national Indigenous rights legislation, constitutional provisions, the presence and formal recognition of IPs and LCs, and institutional capacity for implementation and enforcement. A country with robust existing Indigenous rights frameworks may find that reliance on established carbon crediting standards provides sufficient protection, while another may determine that specific national FPIC requirements are necessary to fill gaps or strengthen protections. A country may benefit from a phased approach that begins with standards-based requirements and evolves toward more comprehensive national frameworks as institutional capacity develops.

### Box 3.8 Country Spotlight: Promoting Social and Environmental Integrity



**CAMBODIA**

**Title:** Operations Manual for the Implementation of Article 6 of the Paris Agreement on Climate Change in Cambodia, 2024 (Operations Manual)[a]

**Legal instrument:** The Operations Manual was developed by the Ministry of Environment and approved for launch by the Prime Minister. It establishes the institutional framework for Article 6 participation, including responsibilities, processes, and fees.

**Relevant legal framework option:** Require supply-side integrity through adherence to approved carbon crediting standards, with an option to include additional requirements (see **Table 3.6**).

**Description:** The Operations Manual defines eight eligibility criteria for mitigation activities seeking Article 6 authorization. Beyond requiring adherence to the environmental and social integrity requirements of an eligible carbon crediting standard, it establishes additional sustainable development criteria across three categories: social enhancement of income and quality of life, technology transfer, and economic benefits. Each criterion provides clear assessment metrics. Cambodia's Operations Manual demonstrates how a country can adapt its carbon market framework to address specialized sustainable development priorities.

a. Ministry of Environment, Cambodia 2024.

## Legal Framework Options

**Table 3.6** outlines a recommended option that addresses sustainable development outcomes, environmental and social safeguards, and FPIC. This option requires compliance with integrity elements embedded in the methodologies of approved carbon crediting standards, while providing a country with the flexibility to establish additional requirements tailored to its specific context, if desired. By referencing established international and independent carbon crediting standards, a country creates legally enforceable obligations with clear penalties for noncompliance,

extending enforcement mechanisms beyond what standards organizations themselves can provide.[63] See **Chapter 7.1** for options related to framework compliance and enforcement.

**Table 3.6** Legal Framework Option for Promoting Social and Environmental Integrity

| **OPTION: Require supply-side integrity through adherence to approved carbon crediting standards, with an option to include additional requirements.**[64] | |
|---|---|
| **Advantages** | • Protects community rights and ecosystems while supporting national development priorities<br>• Reduces legal, reputational, and operational risks for the country, buyers, and project proponents while building market confidence<br>• Supports long-term mitigation activity sustainability and community buy-in through stakeholder engagement<br>• May attract values-aligned investors and enhance the credibility of the national carbon market |
| **Disadvantages** | • Requirements beyond approved carbon crediting standards (if applicable) may create costs or administrative burdens on project proponents and the country.<br>• Consultation and assessment processes can be time-intensive and may delay mitigation activity implementation.<br>• Ongoing consent requirements under free, prior, and informed consent (FPIC) may create long-term mitigation activity uncertainties. |
| **Example legal text** | **Section III. Mitigation Activity Design and Development**<br>. . .<br>**D. Social and environmental integrity requirements**<br>1. A project proponent shall comply with sustainable development, environmental integrity, social safeguards, and FPIC requirements mandated by the approved carbon crediting standard and methodology.<br>2. The Administrative Authority may establish additional requirements for project proponents by developing relevant [regulations][guidance]. |

*Source:* Original for this publication.

63 Whether formal agreements between a country and carbon crediting standards bodies are required depends on the level of integration and cooperation intended. If a country simply mandates compliance with an existing carbon crediting standard's methodologies, no agreement may be necessary. However, ongoing coordination, such as information sharing, registry interoperability, or cooperative oversight, typically requires a separate agreement (such as a memorandum of understanding).

64 If a country utilizes a list of approved carbon crediting standards and methodologies, elements to ensure sustainable development for the activity generating credits are generally required by the methodology.

## 3.5. Integrity Requirements for the Use of Carbon Credits

### Overview

Demand-side integrity regulates a buyer's purchase and use of carbon credits to promote genuine climate action and appropriate claims. The objective is to continue the supply-side integrity applied throughout the value chain, with the ultimate goal of creating a coherent market system that recognizes consistency and clarity in claims, accounting treatment, and uses across the system. However, there is a limit to what each supplying country can achieve in terms of demand-side integrity governance.

The range of demand-side integrity interventions could include the following:

- **Regulating claims made domestically:** Claims made by buyers are governed by the laws of their jurisdiction, including those related to greenwashing and consumer protections. Countries are increasingly focused on the carbon credit claims of regulated entities within their jurisdictions, and market initiatives have emerged to provide guidance on appropriate credit usage and claims practices. For example, the Voluntary Carbon Markets Integrity Initiative (VCMI) has developed guidance specifying the types of claims companies can make to support high-integrity use (VCMI 2025).[65] The Coalition to Grow Carbon Markets' Shared Principles define pillars for credible corporate carbon use and create international government alignment on the role of carbon credits in corporate decarbonization efforts (Coalition to Grow Carbon Markets 2025). To date, regulation of domestic claims has primarily been addressed under general advertising rules and consumer protection laws, rather than through a country's carbon market framework.
- **Regulating claims made internationally:** A country may wish to regulate claims related to domestic activities made by international buyers. However, extending claim regulation to international buyers of credits sourced from a country poses significant enforcement and extraterritorial jurisdiction challenges. While a country may have reputational concerns about how its credits are used internationally, it has limited legal mechanisms to govern claims made by foreign entities in other jurisdictions.

65 In addition, the Science-based Targets initiative has developed the Corporate Net-Zero Standard to guide companies on setting net-zero targets. As of December 2025, the standard is undergoing major revisions, including further consideration of the role of carbon credits in corporate strategies. See https://sciencebasedtargets.org/net-zero.

- **Project proponent disclosure to buyers of nonauthorized carbon credits:** A country's primary demand-side integrity concern for nonauthorized carbon credits is ensuring buyers understand that these credits contribute to the host country's NDC, meaning both the buyer and the host country do not count the same underlying ERRs toward their mitigation goals. A country can address this through its legal framework by requiring project proponents to disclose this dual claim to buyers in transaction documents (see **Table 3.7**). This approach is more practical than attempting to directly regulate international buyers, over whom the country has limited jurisdiction.
- **Country approval of buyers of nonauthorized carbon credits:** Regulating approval of buyers outside of a country's jurisdiction presents similar extraterritorial challenges as overseeing international claims. Buyer approval requirements would allow a country to vet and approve buyers before credit sales. However, buyers are not always known at the onset of a mitigation activity, and initially identified buyers may change before the credits are sold. If a country requires buyers to be approved, criteria will need to be developed to ensure equitable treatment and avoid deterring investment. The administrative burden of reviewing potentially numerous international buyers may also outweigh oversight benefits.
- **Country approval of buyers of authorized carbon credits:** Oversight is easier for these credits due to their authorization requirements. For example, the authorization process under Article 6 requires countries to issue LoAs to project proponents, creating natural checkpoints where a country can require disclosure of intended buyers and their planned credit uses, if known. The LoAs can specify permitted use cases for the ITMOs, such as authorizing transfers for use toward the achievement of an acquiring country's NDC or other international mitigation purpose (OIMP). Additionally, the corresponding adjustment process transfers ITMOs, including the accounting and claim rights to the underlying ERRs, to the buyer. This authorization and the corresponding adjustment framework reduce concerns about double counting. Information about ITMO buyers is a key element of Article 6.2 authorization, and buyer identification requirements are addressed in the authorization section of this Legal Toolkit (see **Chapter 6.2**).

The key demand-side integrity intervention for a country's carbon market legal framework is project proponent disclosure to buyers of nonauthorized carbon credits.

### Legal Framework Options

**Table 3.7** presents one option for promoting integrity requirements for the use of carbon credits.

**Table 3.7** Legal Framework Option for Promoting Integrity Requirements for the Use of Carbon Credits

| **OPTION: Require project proponent to provide appropriate claim-related disclosure to initial buyers purchasing nonauthorized carbon credits.** | |
|---|---|
| **Advantages** | • Reduces the risk of inappropriate buyer claims that could damage country reputation<br>• Supports informed decision-making by buyers about credit purchases and use<br>• Helps align credit use with international best practices and guidelines |
| **Disadvantages** | • Applies to project proponents rather than buyers who would be making the claims<br>• Involves some administrative burden on project proponents and the country<br>• Could reduce market appeal if disclosure requirements are perceived as overly restrictive |
| **Example legal text** | **Section III. Mitigation Activity Design and Development**<br>. . .<br>**E. Integrity requirements for the use of carbon credits**<br>1. A project proponent shall provide an attestation confirming that it will disclose to the initial buyers of its voluntary carbon market (VCM) carbon credits without authorization that the country may count the emission reductions or removals (ERRs) underpinning these credits toward its Nationally Determined Contribution (NDC) achievement. |

*Source:* Original for this publication.

## 3.6. Mitigation Activity Validation

### Overview

Validation is an independent evaluation of mitigation activity documentation to ensure compliance with carbon crediting standards and methodologies. This quality assurance step occurs before the implementation and verification of the mitigation activity. Some carbon crediting standards require validation, while others are optional (World Bank 2021b). See **Box 3.9** for an example from Bolivia.

The primary aim of validation is to assess whether a proposed mitigation activity is likely to deliver its estimated mitigation results. This evaluation process serves multiple functions, including the following:

- **Technical assessment:** Evaluating the mitigation activity methodology, baseline calculations, and monitoring procedures

- **Compliance review:** Ensuring adherence to carbon crediting standard requirements
- **Additionality verification:** Confirming that ERRs would not occur without the mitigation activity
- **Sustainable development review:** Assessing contributions to broader development objectives (when applicable).

Successful validation typically concludes with the registration of mitigation activities under the relevant carbon crediting standard, officially recognizing them as eligible to generate carbon credits upon verification of actual performance.

### Box 3.9 Country Spotlight: Addressing Mitigation Activity Validation

**BOLIVIA**



**Title:** Regulation for the National Mandatory Registry of Programs and/or Projects (Reglamento de Funcionamiento del Registro Nacional Obligatorio de Programas y/o Proyectos (RENAPP)) (Regulation)[a]

**Legal instrument:** In 2024, the President issued Supreme Decree No. 5264 (Decreto Supremo No. 5264) (Decree) to establish climate finance management guidelines for meeting the country's NDC.[b] The Decree named the Ministry of Environment and Water as the responsible entity for the registry it established to track emission reductions or removals (ERRs) and prevent double counting. The ministry developed the Regulation in 2025 to establish RENAPP management procedures.

**Relevant legal framework option:** Require mitigation activities to be validated and for validation and verification bodies (VVBs) to comply with requirements set by approved carbon crediting standards (see **Table 3.8**).

**Description:** The Regulation mandates requirements for VVBs and mitigation activity validation. The country requires eligible carbon crediting standards to have robust validation and verification processes, including VVB accreditation processes with publicly listed accreditations. All mitigation activities must

undergo validation by an independent VVB to evaluate compliance with eligible carbon crediting standard requirements, assumptions, methods, and Reducing Emissions from Deforestation and Forest Degradation (REDD+) safeguards where applicable. The VVBs must be registered with eligible carbon crediting standards, and the country must maintain a public list of eligible VVBs.

a. See Regulation for the National Mandatory Registry of Programs and/or Projects: https://climate-laws.org/document/regulation-for-the-national-mandatory-registry-of-programs-and-or-projects-reglamento-de-funcionamiento-del-registro-nacional-obligatorio-de-programas-y-o-proyectos-renapp_c144.
b. See Decreto Supremo No. 5264. http://gacetaoficialdebolivia.gob.bo/normas/verGratis_gob_212338_Overview.indd/280512.

### Legal Framework Options

Carbon crediting standards maintain lists of approved VVBs qualified to conduct validation and verification processes for specific activity types (see **Chapter 4** for a discussion on verification). These bodies must meet accreditation requirements and demonstrate technical competence (GGGI 2023c). Given the complexity of validation functions and the specialized expertise required, a country may find it more practical to rely on existing international accreditation bodies and established carbon crediting standards with proven accreditation requirements. However, many countries aim to build domestic VVB capacity over time to expand local knowledge and experience in the carbon market.

A country developing its own carbon crediting standards may consider requiring domestic VVB accreditation to ensure local regulatory oversight, build national technical capacity, maintain quality control over validation processes, and facilitate communication and monitoring. However, this approach requires significant institutional investment and the development of expertise.

**Table 3.8** provides example language to require validation of mitigation activities for credit generation and to ensure VVB compliance with relevant carbon crediting standards. The language also allows a country to establish additional national requirements where appropriate. This approach ensures that validation processes maintain integrity while providing flexibility for different types of carbon market participation.

**Table 3.8** Legal Framework Option for Addressing Mitigation Activity Validation

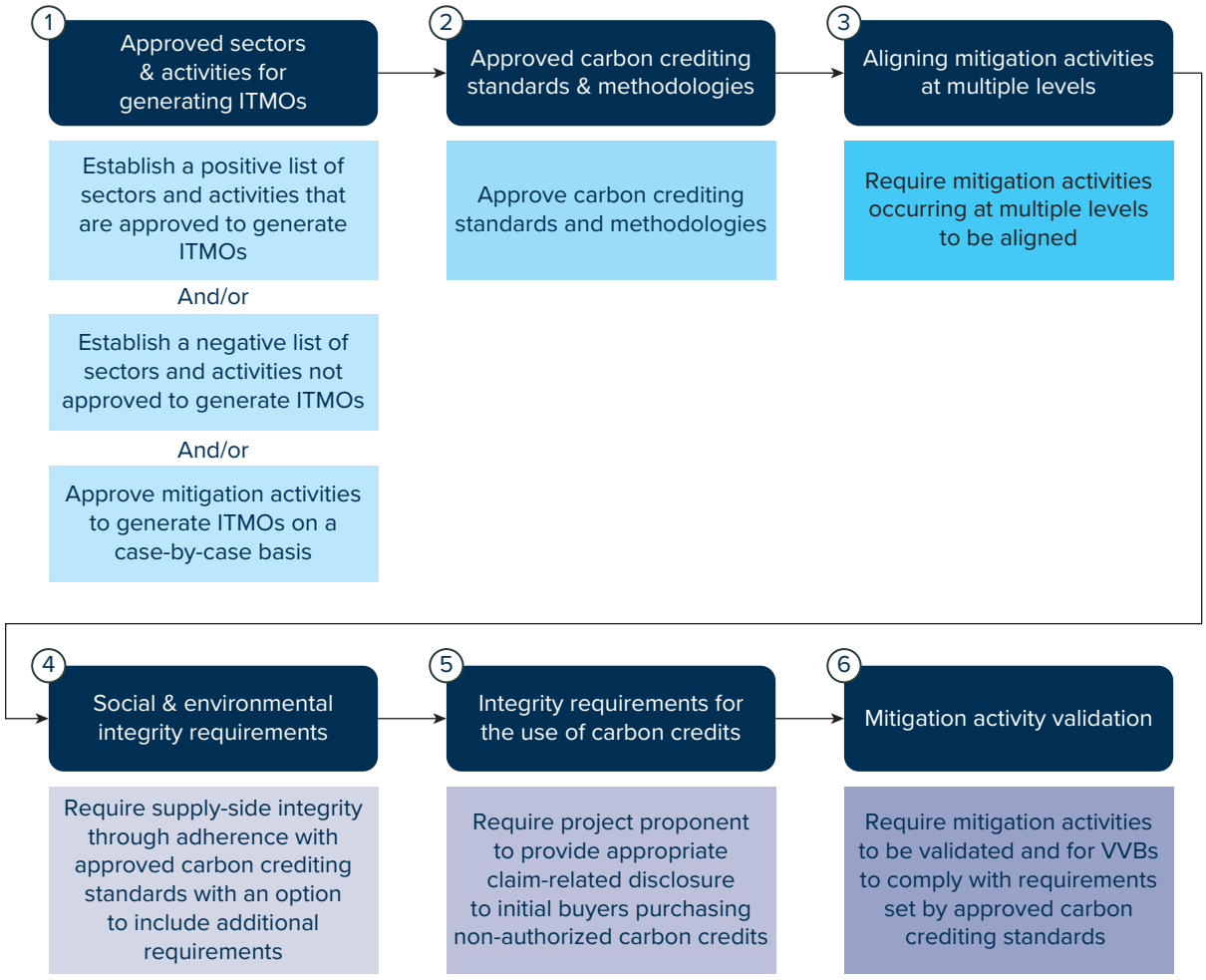
| OPTION: Require mitigation activities to be validated and for VVBs to comply with requirements set by approved carbon crediting standards. | |
|---|---|
| **Advantages** | • Ensures independent third-party assessment of mitigation activity design and ERR claims before implementation<br>• Leverages established international expertise and accreditation systems for validation and verification bodies (VVBs)<br>• Reduces the country's direct technical review burden by relying on qualified independent VVBs |
| **Disadvantages** | • May create capacity constraints if insufficient qualified VVBs are available in the country or region, or create dependency on international validation infrastructure that may not reflect local contexts or priorities<br>• Could limit country oversight if validation requirements are entirely delegated to external carbon crediting standards |
| **Example legal text** | **Section III. Mitigation Activity Design and Development**<br>. . .<br>**F. Mitigation activity validation**<br>1. A project proponent shall engage an independent VVB to conduct validation of the activity as required under the approved carbon crediting standard.<br>2. VVBs shall comply with accreditation and other requirements mandated by the approved carbon crediting standard.<br>3. The Administrative Authority may require additional requirements on VVBs by developing relevant [regulations][guidance].[66] |

*Source:* Original for this publication.

**Figure 3.1** shows a decision tree for establishing a legal framework for the design and development of mitigation activities.

66 A country may have additional requirements for validators and verifiers that could be set forth in guidance. For instance, requiring local presence could facilitate the country's ability to enforce against a validator or verifier.

**Figure 3.1** Decision Tree for Developing a Legal Framework for Mitigation Activity Design and Development




*Source:* Original for this publication.
Note: ITMOs = Internationally Transferred Mitigation Outcome; VVBs = validation and verification bodies.

## 3.7. Key Takeaways

- A country may wish to define specific sectors and activities that are approved to generate ITMOs to manage NDC implications and direct international carbon finance toward strategic priorities. However, it may want to avoid sectoral or activity limitations for nonauthorized carbon credits to maintain flexibility for a broader range of initiatives under the VCM.

- A country should exercise caution when defining approved sectors and activities by NDC conditionality status, as this approach can create market uncertainty if the NDC does not clearly separate unconditional and conditional elements by sector. It may also exclude opportunities to drive investment into unconditional NDC sectors that can support additional mitigation toward NDC achievement.
- A country should strongly consider adopting existing international or independent carbon crediting standards and relevant methodologies rather than developing domestic alternatives, as they offer lower costs, faster implementation, and broader market acceptance. Established standards provide proven technical frameworks with international buyer familiarity, lower implementation costs, and faster market entry, while domestically developed methodologies require substantial time, resources, and specialized expertise that many countries lack, and may attract less international demand.
- A country should periodically update approved sectors and carbon crediting standards through secondary instruments like regulations or guidance, enabling adaptability to evolving technologies and market conditions without requiring legislative amendments.
- Decisions related to approved carbon crediting standards will impact legal framework provisions related to supply-side integrity, credit issuance, and registries.
- High-integrity carbon markets require proven additionality, credible baselines, rigorous monitoring and verification, permanent ERRs, and robust environmental and social safeguards. When incorporating supply-side integrity requirements, a country should leverage existing international and independent carbon crediting standards as the foundation for legally enforceable obligations while ensuring coherence across all framework elements.



# 4 MONITORING, REPORTING, AND VERIFICATION

This chapter outlines the legal options for countries to require MRV for mitigation activities while supporting compliance with Paris Agreement reporting obligations. It describes how countries can incorporate MRV requirements for mitigation activities into their legal frameworks to strengthen oversight and facilitate national-level reporting requirements. Specifically, this chapter covers the role of carbon crediting standards and methodologies in defining MRV requirements, third-party verification processes, ongoing monitoring and reporting obligations, and additional MRV considerations for activities with nonpermanence risks.

**CARBON MARKET LEGAL FRAMEWORK OUTLINE**

**Section I. Purpose and Definitions**
A. Purpose
B. Definitions

**Section II. Legal Instruments and Institutions**
A. Responsible authorities and governance functions

**Section III. Mitigation Activity Design and Development**
A. Approved sectors and activities for generating ITMOS
B. Approved carbon crediting standards and methodologies
C. Aligning mitigation activities at multiple levels
D. Social and environmental integrity requirements
E. Integrity requirements for the use of carbon credits
F. Mitigation activity validation

**Section IV. Monitoring, Reporting, and Verification**
A. Mitigation activity MRV

**Section V. Carbon Rights, Credit Issuance, and Registry Procedures**
A. Legal nature and available rights in emission reductions or removals
B. Legal nature and available rights in carbon credits
C. Carbon credit issuance
D. Registry procedures

**Section VI. Carbon Credit Transactions**
A. Procedures for nonauthorized carbon credits
B. Procedures for ITMO authorization
C. Procedures for A6.4ERS
D. Levies and fees
E. Allocation of revenue

**Section VII. Enforcement and Dispute Resolution**
A. Enforcement authority and powers
B. Dispute resolution

**Section VIII. Appendixes**

Robust MRV requirements ensure that project proponents accurately calculate and achieve the stated ERRs from mitigation activities.[67] MRV requirements should be included in a legal framework to support the integrity of the market.

To date, third-party carbon crediting standards bodies have led to the development of MRV requirements that are incorporated into methodologies used to calculate GHG reductions and volumes underpinning ERRs. For a country that allows third-party methodologies to be used by project proponents, the framework may simply state that project proponents must abide by those MRV requirements. Incorporating these requirements into the legal framework enables enforcement authority and allows the country to more easily collect information needed to adhere to Paris Agreement reporting requirements. This helps ensure that information regarding validated mitigation activities is reported appropriately from the project level to the national level, thereby maintaining environmental and social integrity. Robust and transparent reporting structures also provide a foundation for transparency that builds market confidence and participation.

## 4.1. Mitigation Activity MRV

### Overview

At the mitigation activity level, MRV involves collecting data and independently evaluating activity and implementation documents to ensure adherence to project design and accurate ERR reporting. The objective of MRV is to calculate and evaluate the performance of mitigation activities and ensure that they comply with the agreed monitoring plans and carbon crediting standard requirements (GGGI 2023c).

Mitigation activities must follow ongoing MRV processes during the operational period to be eligible for credits (see **Chapter 3.2**). The routine MRV process begins at the start of implementation, following successful validation. Each step is repeated throughout the mitigation activity life cycle, depending on the carbon crediting standard and related methodology requirements, as well as how frequently the project proponent wishes to be issued credits. Each component of this cyclical MRV process serves a unique function, as follows (World Bank 2021b):

- **Monitoring:** The project proponent measures and calculates ERRs generated by the mitigation activity, adhering to monitoring plan requirements under the relevant carbon crediting standard and methodology, as required by the legal framework. This may involve direct measurements or predictive monitoring using models or default factors, depending on the available resources and methodology requirements (GGGI 2023c).

67 Country-level MRV obligations under the UNFCCC and Paris Agreement (including related to Article 6) are addressed in **Appendix C** of this Legal Toolkit.

- **Reporting:** The project proponent prepares monitoring reports and other documentation describing implementation as required by the relevant carbon crediting standard, methodology, and legal framework. Each monitoring report covers a specified monitoring period that must align with the previous and subsequent periods.
- **Verification:** An approved VVB evaluates the monitoring reports and other documentation to confirm that the mitigation activity has achieved the reported ERRs in compliance with the relevant carbon crediting methodology. Once ERRs are verified by the VVB and approved by the relevant carbon crediting standards body (see **Chapter 3.2**), the project proponent may request the issuance of carbon credits up to the quantity of verified ERRs. The MRV process is repeated throughout the mitigation activity life cycle for consistent monitoring and periodic carbon credit issuance.

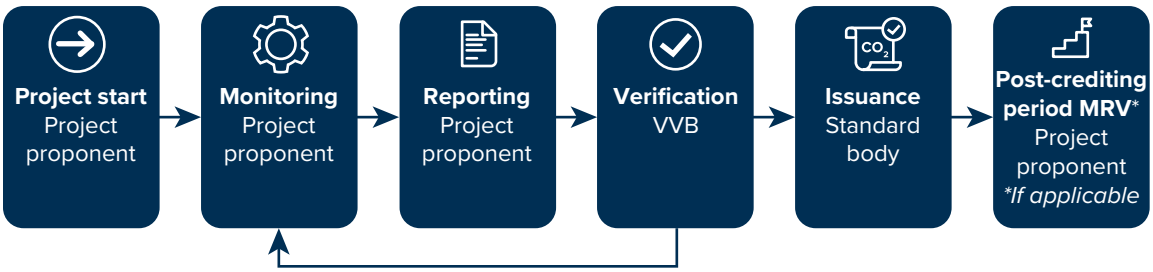
MRV requirements vary by sector, activity type, and methodology. When a country chooses approved carbon crediting standards (see **Chapter 3.2**), it automatically adopts the required sector-specific MRV approaches, including digital MRV technologies where applicable, while retaining flexibility to add requirements that reflect its national contexts and priorities. There are also benefits to establishing a national MRV framework, such as increasing institutional capacity, facilitating compliance with emerging international supply chain requirements, and enabling the future adoption of sectoral or economy-wide climate policies, such as carbon pricing.

In addition to the ongoing MRV processes required for regular carbon credit issuance, mitigation activities that face nonpermanence risks (see **Appendix A.2**) may be requirements beyond the typical mitigation activity operation period (see **Box 4.1** for an example from Mozambique). Carbon crediting standards and methodologies can require project proponents to monitor ERRs even beyond the mitigation activity crediting period.[68] If ERRs are reversed (for example, through deforestation or wildfires), the project proponent must comply with relevant carbon crediting standards and methodologies to compensate for the reversal event - for example, by using the buffer pool (see **Appendix A.2** for additional information on addressing the risk of reversals). If the project proponent fails to submit contiguous monitoring reports for verification throughout the mitigation activity period (**Figure 4.1**), the carbon crediting standards body may presume that ERRs have been reversed and cancel credits according to its requirements.[69]

68 For example, Verra requires carbon stock permanence to be monitored for a minimum of 40 years for NBS projects with nonpermanence risk. Such mitigation activities are required to prepare a nonpermanence risk report, and a portion of the overall ERRs is retained in a pooled buffer account accordingly (Verra 2024).

69 MRV technologies are rapidly advancing, including digital MRV, distributed ledger technology, and artificial intelligence. A country should monitor these developments as it considers options for designing and approving MRV activities within its jurisdiction.

**Figure 4.1** MRV Process Throughout the Mitigation Activity Life Cycle




*Source:* Original for this publication.

*Note:* MRV = monitoring, reporting, and verification; VVB = validation and verification body.

## Box 4.1 Country Spotlight: Mitigation Activity–Level MRV

### MOZAMBIQUE



**Title:** Decree N. 23/2018: Regulations for Programs and Projects Related to REDD+ (Regulamento para Programas e Projectos Inerentes à REDD+) (Regulations)[a]

**Legal instrument:** The Regulations were established as a decree by the Council of Ministers to regulate the implementation of Reducing Emissions from Deforestation and Forest Degradation (REDD+) projects and programs. The Regulations define REDD+ rules, promote conservation and sustainable ecosystems management, ensure emission reduction or removal (ERR) transparency, and define the rules for generating and transacting ERR titles and certificates. The country's authority to adopt regulatory measures for environment management and sustainable development is enshrined in Mozambique's Law N. 20/97.[b]

**Relevant legal framework option:** Require project proponents to comply with the methodological monitoring, reporting, and verification (MRV) requirements of approved carbon crediting standards; report any suspensions, investigations, or reversal events; and meet additional country-specific requirements as needed for national-level Paris Agreement reporting or other objectives (see **Table 4.1**).

**Description:** The Regulations specify that all ERRs resulting from REDD+ mitigation activities that are intended for trading must be registered with the Ministry of Finance. As part of the registration process, all mitigation activities

are required to undergo validation and MRV according to the relevant approved carbon crediting standard. The project proponent is required to submit the resulting MRV reports to the National Fund for Sustainable Development (FNDS), which is responsible for managing REDD+ resources. The Ministry of Finance registers the ERRs upon FNDS's successful evaluation of the reports.

a. Regulations for Programs and Projects Related to Emission Reduction from Deforestation and Forest Degradation, Conservation, and Enhancement of Carbon Stocks (REDD+): https://www.fnds.gov.mz/index.php/en/documents/legislation/decreto-redd.
b. Law N. 20/97 of October 1, 1997: https://faolex.fao.org/docs/pdf/moz15370E.pdf.

## Legal Framework Options

A country must enforce strong MRV standards to ensure that carbon credits represent real and permanent ERRs. This enables oversight of ERRs by incorporating MRV provisions into their carbon market legal frameworks, thereby supporting national-level reporting and building investor and buyer confidence in credit quality.[70]

### Monitoring and reporting

If a country has approved specific carbon crediting standards, it can leverage the MRV requirements already included within those methodologies (see **Chapter 3.2**).[71] By requiring project proponents to abide by existing MRV requirements, a country establishes oversight and enforcement authority without defining additional MRV specifications in the legal framework.

A country can strengthen its mitigation activity oversight by requiring project proponents to report any developments or communications between the proponent and the relevant carbon crediting standards body. This ensures the country stays informed about its mitigation activity status and can respond quickly to issues that may affect mitigation activity integrity. Required reporting should include routine submissions and critical updates. Routine reporting involves resubmitting regular information, such as monitoring reports or ERR calculations. Critical updates should be reported promptly when mitigation activity credibility is jeopardized or questioned, including in the following scenarios:

70 While government authority over mitigation activity–level MRV is beneficial for the reasons stated, countries should exercise caution to avoid creating divergent, onerous, or conflicting obligations on private project proponents. Such regulation would have the opposite effect of undermining market confidence, reducing the attraction of private sector investment under the carbon market framework.

71 If a country develops its own carbon crediting methodologies, it must design MRV processes for mitigation activities. These MRV requirements would be defined in the domestic mechanism and methodologies described in **Chapter 3.2**. As such, it is not included as an option within this section.

- Reversal events of ERRs
- Suspensions of the mitigation activity or the project proponent's registry account by the carbon crediting standard
- Credit cancellation
- Investigations and any final decisions affecting the registry account, mitigation activity, or project proponent.

Requiring project proponents to report reversal events or imposing disciplinary action strengthens country oversight and carbon market integrity. Such reports provide visibility into potential issues and enable appropriate responses to infractions, though they may not automatically trigger enforcement action by the country.

A country may require project proponents to submit additional information to support country priorities. This could include data needed for reporting on national objectives not addressed by approved carbon crediting standards, making it easier to incorporate activity-level data into national policy reporting (see **Appendix C**).[72] However, the country should ensure that additional requirements do not impose excessive administrative burden on mitigation activities and itself. A country may require project proponents to submit information beyond what they already prepare for approved carbon crediting standards, but only when necessary for national-level monitoring and reporting needs.[73]

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72 For example, Kenya requires project proponents to submit annual progress reports following a specified template. In addition to technical information on carbon credit generation, the template also requires proponents to provide information on the volume of carbon credit sales, disputes arising from the implementation of the mitigation activity, and the impact of the activity, including on Kenya's NDC. See the Climate Change (Carbon Markets) Regulations Legal Notice 84 of 2024: https://new.kenyalaw.org/akn/ke/act/ln/2024/84/eng@2024-06-07/source.

73 Each country will need to consider how both data protection and data monetization regimes interact with the data generated and collected as part of its carbon market framework. Regarding data protection, there is a tension between robust data collection through MRV (whether digital or analog) reporting requirements - which provides greater precision on carbon accounting for transactions and NDC reporting - and privacy rights under data protection frameworks like the EU General Data Protection Regulation. Regardless of whether a country is bound by international data regulations (such as the aforementioned General Data Protection Regulation) or standards (such as ISO 31700), a prudent approach will apply "privacy-by-design" principles such as aggregating data at appropriate geographic or sectoral levels, employing differential privacy protections, establishing clear legal bases for data processing under public interest provisions, and creating independent oversight mechanisms that balance climate imperatives with data protection. Incorporating global best practices around data processing - especially aggregating and anonymizing data used for national and international reporting purposes - will minimize administrative burdens on, and better protect the sensitive or proprietary data of, project proponents while enabling the country to accurately maintain its national carbon inventory. Regarding data monetization, a country should consider the degree to which it encourages private entities operating within the data landscape to possess exclusively and transfer for value various data generated as part of carbon market activities. The greater the amount of data required to be shared with the government and subject to public availability, the greater the overall transparency and trust in the mitigation outcomes associated with market activity. At the same time, such publicly available data reduces data monetization opportunities for project proponents and intermediaries. Either way, a country should recognize that data itself can be valued and valuable to actors in the carbon markets and apply a thoughtful approach to regulating it.

### Verification

VVB requirements for verification should align with validation decisions (see **Chapter 3.6**) and the selection of approved carbon crediting standards (see **Chapter 3.2**). National frameworks often specify comprehensive VVB requirements to cover both validation and verification steps. For this reason, additional policy language is not provided on VVB verification requirements in **Table 4.1** as validation requirements are covered in **Chapter 3.6.**

A country has three options for VVB requirements: if leveraging approved carbon crediting standards, recognize the VVBs accredited under those standards; if developing domestic mechanisms and methodologies, set bespoke VVB requirements to meet specific priorities and needs; or if including additional requirements, recognize VVBs accredited under approved carbon crediting standards. The country should consider domestic and regional VVB availability, accreditation difficulty, cost implications for project proponents, and previous validation requirements when selecting its approach.[74]

Many carbon crediting standards permit project proponents to hire international VVBs, especially where in-country capacity is insufficient to meet demand. However, a country should consider opportunities to build domestic VVB capacity to support market growth.

74 When evaluating these three options, countries should consider whether their carbon market frameworks address consequences (including legal liability) for verification failures that could impact the real or perceived integrity of the activities or credits generated under the framework. Most international and independent carbon crediting standards have their own mechanisms in place to help mitigate this risk and protect credit quality, such as VVB accreditation and rotation requirements. Countries could incorporate similar requirements to the extent they elect to develop bespoke VVB requirements. Countries may also elect to impose additional requirements, such as statutory liability or regulatory penalties for fraudulent reporting, negligent misstatements, or failure to disclose conflicts of interest. Alternatively, they may elect to require VVBs to provide specific assurances in verification reports or to maintain professional liability insurance policies. However, imposing additional requirements (which, in many cases, create barriers to entry) could further restrict the supply of qualified VVBs. Each country should weigh the risk of verification failures against the risk of verification backlogs due to insufficient personnel.

**Table 4.1** Legal Framework Options for Monitoring, Reporting, and Verification

| **OPTIONS: Require project proponents to comply with the methodological MRV requirements of approved carbon crediting standards;[75] report any suspensions, investigations, or reversal events; and meet additional country-specific requirements as needed for national-level Paris Agreement reporting or other objectives.** | |
|---|---|
| **Advantages** | • Leverages existing internationally recognized monitoring, reporting, and verification (MRV) protocols and technical expertise from established carbon crediting standards, reducing development costs and time<br>• Ensures consistency with global best practices and facilitates international recognition and acceptance of credits in global markets<br>• Reduces administrative burden on countries by relying on the established MRV infrastructure of carbon crediting standards bodies<br>• Provides the country with information about mitigation activity problems that could affect credit quality, market reputation, or environmental integrity, and creates transparency that allows for country intervention when issues arise<br>• Provides flexibility to add country-specific requirements for national inventory reporting, Nationally Determined Contribution (NDC) tracking, or other domestic policy objectives |
| **Disadvantages** | • May create gaps in national oversight if approved carbon crediting standards do not align perfectly with domestic policy priorities or reporting needs<br>• Could result in complex compliance requirements if additional national requirements conflict with or duplicate approved carbon crediting standard obligations<br>• Limits country control over MRV evolution since changes to approved carbon crediting standards may not reflect national priorities or technical capacity<br>• Could expose project proponents to reputational harm if investigations are reported before conclusions are reached or if suspensions are later resolved favorably<br>• Requires government capacity to evaluate and respond to reported issues, which may strain resources if many mitigation activities experience minor investigations or temporary suspensions |

75 If a country utilizes a list of approved carbon crediting standards - whether domestic, international, and/or independent - MRV for the activity generating credits is generally required by the methodology.

| | |
|---|---|
| **Example legal text** | **Section IV. Monitoring, Reporting, and Verification**<br>**A. Mitigation activity MRV**<br>1. A project proponent shall comply with MRV requirements mandated by the approved carbon crediting standard and relevant methodology.[76]<br>2. A project proponent shall submit all information and materials related to compliance with MRV requirements to the Administrative Authority and shall update such information within [30] days of material change.<br>3. A project proponent shall report to the Administrative Authority within [30] days: any cancellation or revocation of issued carbon credits and any investigations or disciplinary action against the project proponent or involving the mitigation activity.<br>4. The Administrative Authority may require the project proponents to meet additional monitoring, reporting and verification requirements by developing relevant [regulations][guidance]. |

*Source:* Original for this publication.

## 4.2. Key Takeaways

- A country's MRV requirements for mitigation activities will be informed by the methodologies under its approved carbon crediting standards. A country that recognizes international and independent carbon crediting standards could rely primarily on existing MRV processes set forth in the methodologies rather than developing additional ones, which could be onerous and administratively challenging.
- Requiring project proponents to follow the MRV processes of approved carbon crediting standards in the framework would help ensure national enforcement and oversight of mitigation activity MRV. A country could allow for the development of additional MRV processes if necessary for specific national purposes (for example, reporting related to meeting national sustainable development criteria).
- Requirements for VVB eligibility should align with previous decisions on approved carbon crediting standards and validation requirements.

76 This refers to the selected carbon crediting standard and methodology communicated by the project proponent as part of the application processes under Section VII (for example, procedures for mitigation activities generating nonauthorized carbon credits, ITMO authorization, and PACM approval and authorization). If a country chooses option 1 for procedures for nonauthorized carbon credits (information submission), the methodology would be designated in the public information submitted by the project proponent. If a country chooses option 2 (endorsement of mitigation activities generating nonauthorized carbon credits), the methodology would be designated in the Letter of Endorsement (LoE). If a project proponent is seeking authorization, the methodology would be designated in the LoA.



# 5 CARBON RIGHTS, CREDIT ISSUANCE, AND REGISTRY PROCEDURES

This chapter provides high-level legal options for describing and assigning legal rights to ERRs and defining the processes by which they can provide the basis for standardized, tradeable units - that is, carbon credits.[77] It also discusses the importance of securing relevant legal rights to the underlying ERRs in order to generate and trade carbon credits.

This chapter also covers carbon credit issuance, registry functions, and registry interoperability across jurisdictions and markets (that is, VCM and international compliance markets, including Article 6). See **Box 5.1** for definitions of these and other key terms.

**CARBON MARKET LEGAL FRAMEWORK OUTLINE**

**Section I. Purpose and Definitions**
A. Purpose
B. Definitions

**Section II. Legal Instruments and Institutions**
A. Responsible authorities and governance functions

**Section III. Mitigation Activity Design and Development**
A. Approved sectors and activities for generating ITMOS
B. Approved carbon crediting standards and methodologies
C. Aligning mitigation activities at multiple levels
D. Social and environmental integrity requirements
E. Integrity requirements for the use of carbon credits
F. Mitigation activity validation

**Section IV. Monitoring, Reporting, and Verification**
A. Mitigation activity MRV

**Section V. Carbon Rights, Credit Issuance, and Registry Procedures**
A. Legal nature and available rights in emission reductions or removals
B. Legal nature and available rights in carbon credits
C. Carbon credit issuance
D. Registry procedures

**Section VI. Carbon Credit Transactions**
A. Procedures for nonauthorized carbon credits
B. Procedures for ITMO authorization
C. Procedures for A6.4ERS
D. Levies and fees
E. Allocation of revenue

**Section VII. Enforcement and Dispute Resolution**
A. Enforcement authority and powers
B. Dispute resolution

**Section VIII. Appendixes**

77 See **box 3.1** for a reminder of the distinction between these two concepts used throughout this Legal Toolkit.

A legal framework that provides clarity regarding ownership of ERRs and the resulting carbon credits promotes credibility, prevents disputes, and fosters investor confidence.[78] These concepts also influence regulatory and policy decisions regarding carbon credit issuance and registry functionality. For specific information related to NBS, see **Appendix A.**

### Box 5.1 Definitional Clarification: Issuance, Transfer, Retirement, Cancellation, and Registry

In the context of creating and trading carbon assets, it is important to distinguish each stage of the carbon crediting process:

- **Issuance:** Issuance is the process by which a carbon crediting standard confirms that an independently verified emission reduction or removal (ERR) meets its requirements, and an associated registry creates a credit with a unique identifier (for example, serial number). While ERRs from mitigation activities may be quantified prior to issuance, no carbon credit (as a fungible asset embodying the ERR) exists until it is issued on a registry.
- **Transfer:** Transfer is the process by which carbon credits are electronically moved from one registry account to another in accordance with contractual obligations.
- **Retirement:** Retirement is the process by which carbon credits are permanently removed from a registry for the purposes of making a claim, either as part of a voluntary reporting framework, like the Science Based Targets initiative, or a mandatory reporting obligation, like the European Union (EU) Corporate Sustainability Reporting Directive, in which the owner of the carbon credit attributes the ERRs underpinning the carbon credit to progress toward its own emissions mitigation goals.
- **Cancellation**: Cancellation is the process by which carbon credits are permanently removed from a registry for purposes other than retirement by the credit owner, as described above (for example, in the event a project is issued more credits than it should have been and a portion of those credits need to be rescinded to ensure the volume of credits a project generates aligns with the verified climate benefit). When a carbon credit is canceled, any proprietary rights to it cease to exist.

78 There is an active effort underway by UNIDROIT to provide guidance on the legal nature and private law aspects of verified carbon credits. The working group has issued draft principles, one of which notes that rights to carbon credits are based in property law and may be subject to proprietary rights (UNIDROIT 2025).

- **Registry:** A registry is an electronic platform that hosts data related to the creation, transfer, use, and cancellation of a carbon credit to enable transparent tracing across its life cycle. The functionality of a registry system can vary, with some serving as data repositories while others may include trading functions.

As used in this Legal Toolkit, these terms are intended to have the meanings above related to carbon crediting, rather than other standard definitions that may be ascribed to them.

## 5.1. Legal Nature and Available Rights in Emission Reductions or Removals

**Overview**

Carbon markets function by transferring defined units (that is, carbon credits) for value from sellers to buyers. These carbon credits derive their value from the ERRs that underpin them, which represent the climate benefit (that is, reduction or removal of GHGs) embodied by the units. In a carbon credit transaction, the seller represents to the buyer that it has the rights to the carbon credits being sold, along with the rights to the underlying ERRs, and the legal authority to transfer those rights to the buyer. Because carbon credits have these essential characteristics, as they can be owned exclusively and transferred by the owner to a buyer, they are considered by law to be property in most jurisdictions, forming the basis for carbon credit transactions and underpinning the functioning of carbon markets.

The legal nature of ERRs, and the available rights thereto, is therefore also foundational to functioning carbon markets. The legal nature of ERRs is highly dependent upon domestic legal frameworks; thus, practices vary across jurisdictions and should be informed by domestic law. Where domestic law - national or subnational - does not explicitly define and assign ERR rights (for example, via legislative or executive instruments creating payment for ecosystem services or jurisdictional REDD+ frameworks), their treatment under the law may vary depending on the type of mitigation activity giving rise to the ERRs. For example, for technology-based ERRs like renewable energy production, clean cooking, or carbon capture and storage, the entity operating the technology to create them is generally considered the owner of the rights to them. Alternatively, for land-based ERRs such as afforestation, REDD+, or climate-smart agriculture, the owner of the land on which they are achieved is generally considered the owner of those resulting rights.

In defining the creation and assignment of rights to ERRs within a carbon market framework, a country should align with existing legal principles and traditions related to property rights, along with ownership, tenure, and control of such property. For instance, in Peru, where the constitution states that natural resources, both renewable and nonrenewable, are the patrimony of the state (where "natural resources" have been held to include carbon sequestration), rights to ERRs will originate with the state.[79]

**Box 5.2** provides a high-level overview of how existing principles may be assessed under different legal regimes.

### Box 5.2 Pathways to Creating and Recognizing Legal Rights to ERRs

- **Constitutional law:** As noted in **Chapter 2.1**, some countries directly create environmental rights in certain types of property via their constitutions.[a] Where such rights exist, they provide a foundation for recognizing rights to the emission reductions or removals (ERRs) underpinning tradable carbon credits. Even where express environmental rights are not referenced in a country's constitution, any defined rights to property - either public or private property, depending on how a country intends to assign carbon rights - should inform and serve as the basis for more specific rulemaking related to ERR rights.
- **Civil law:** In countries based predominantly on civil law systems, comprehensive legal codes and statutes detail major areas of law. In the event a country does not have codes or statutes specific to carbon rights and markets, it likely has ones governing property rights, and potentially other environmental rights.[b] Under civil law systems, the rules governing how property rights are created, demonstrated, and transferred may be applied to determine appropriate ERR rights holders.
- **Common law:** In countries based predominantly on common law systems, the relevant legal principles are more likely to be based on accrued judicial precedent. While there may be some governing law (via legislative or executive instruments), the law's application is informed by judicial decisions that have interpreted such law, which may vary across different subnational jurisdictions. Under common law systems, lawmakers must account for the jurisprudence applicable to the creation, demonstration, and transfer of property rights across all relevant jurisdictions.

79 See the Political Constitution of Peru, Ch. II (The Environment and the National Resources), Art. 66 (1993): https://www.congreso.gob.pe/Docs/constitucion/constitucion/index.html#p=1.

In addition to the national law discussed, subnational law often plays a role in creating ERR rights. As noted in **Chapter 2.1**, laws governing property rights are often implemented by local governments.[c] ERR rights associated with nature-based solution (NBS) activities, which are often more reliant upon ownership, use, and access rights to land, may be particularly sensitive to local law. Most jurisdictions distinguish, at the very least, between public and private land. However, there are often additional ownership categories - such as communal land holdings and traditional or Indigenous land holdings - along with many partial ownership categories, for example, leasehold, usufruct, easement, joint, or beneficial interests.[d] The carbon market framework should consider existing methods of ascribing ownership to land that is used for an ERR activity to avoid uncompensated appropriation of rights arising from land ownership (that is, rights in the resulting ERRs).

a. See **Chapter 2.1** for a detailed discussion on available frameworks, including the legal instruments countries use to enshrine rights to natural resources and environmental benefits.
b. Peru, which has a comprehensive code governing carbon markets, indicates that the owner of a mitigation activity, service, or project that is the source of quantified ERRs, or who holds a formal agreement with the relevant rights holder, shall be deemed to be the owner of the ERRs achieved via activity in such activity or project, as well as any economic benefit resulting therefrom (Decreto Supremo N.° [XXX]-2022-MINAM, Annexo: Disposiciones para el funcionamiento del RENAMI, available at https://www.gob.pe/institucion/minam/normas-legales/3308574-156-2022-minam.) Cambodia reserves all rights to ERRs for the government but specifies in its Article 6 implementation manual a mechanism by which the country may confer ownership to qualifying project participants (Royal Government of Cambodia 2024).
c. Before establishing new or novel national law regarding ERR rights, a country should understand the full spectrum of local rules - for example, local ordinances that define real property rights and boundaries, convey property deeds or titles, or local procedures for granting permits or access rights - including through engagement with local legal authorities.
d. While each of these terms may have slightly varying definitions in each country's legal context, in general: a "leasehold" is a property interest created by a lease between a landlord and a tenant; "usufruct" is the right to use and benefit from a property that belongs to another person; an "easement" is a nonpossessory property interest that can either grant the holder permission to use the property for a specific purpose (for example, building a pathway over the land) or prevent others besides the holder from doing specific things, such as developing the land; "joint interests" are property rights held in common by two or more persons; and "beneficial interests" are rights to benefit from the use or income from a property without holding title to the property (see Legal Information Institute, Cornell Law School: https://www.law.cornell.edu/wex).

Clearly establishing ownership of the rights to the ERRs generated by specific mitigation activities and determining who has the authority to own and transfer these ERRs (and, consequently, the associated carbon credits) is a fundamental requirement for developing a country's carbon market legal framework. Thus, the framework should be as specific as possible regarding how ERR rights are created and transferred and who holds them. For instance, a country sends the clearest policy signal and creates the greatest legal certainty when it describes in a carbon market–specific law the nature of available rights to ERRs (for example, the right to derive economic and noneconomic benefits from the mitigation

activities generating the ERRs) and expressly states how such rights may be held and transferred (for example, ERR rights may be held individually and may be transferred to different parties over time).[80] However, creating new laws governing carbon markets expressly to define ERR rights may not be necessary, particularly if similar laws or norms are already in place that a country can apply to the carbon market context.[81]

Ensuring that ERR rights holders can demonstrate their ownership rights and authority to transfer said rights to a buyer is essential for functioning carbon markets. To the extent the original holder of the ERR rights is not the project proponent (for example, perhaps the ERR rights are held in the first instance by IPs or LCs or by other private property holders), the rights holder(s) must agree to transfer the ERR rights to the project proponent before any carbon credits can be issued to the project proponent or sold to buyers. When determining who may hold ERR rights, a country may have to consider various and sometimes competing interests, including legal certainty, efficiency, and equity. Some countries take the approach of centralizing ERR rights in a national or subnational government.[82] This approach could, in some cases, improve transactional efficiency by providing the market with a single contracting entity with significant available volumes of ERRs. However, it may also deter some transaction counterparties that may not be willing or equipped to take on the legal or political risk of contracting directly with a governmental entity. Furthermore, this approach creates the risk of extrajudicial appropriation and unjust enrichment - if the government fails to account for appropriate benefit sharing - thereby creating domestic legal and international reputational risk.

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80 A country should also consider how best to memorialize the transfer of ERR rights. It is common for jurisdictions to memorialize land tenure rights in a legal instrument, such as a deed, title, or license, which is registered with the relevant government agency, whether a local recorder of deeds or a national property register. To provide consistency and reduce confusion, a country could align its processes for tracking ERR rights with existing processes for tracking other property rights (for example, where relevant, by creating a registrable right to ERRs that is memorialized and updated in a property register).

81 Costa Rica's program operates effectively through its existing framework whereby landowners can receive direct payments for the environmental services provided by their lands upon adopting sustainable land-use and forest-management techniques and is funded, in part, by carbon credit sales. See Costa Rica Forestry Law Nº. 7575, Payment of Environmental Services: https://www.fonafifo.go.cr/en/servicios/pago-de-servicios-ambientales/##pilares.

82 Taking a centralized approach to ERR rights ownership may still allow for private sector participation in carbon markets via governmental assignment of ERR rights through regulatory mechanisms such as licensing or permitting. To the extent ERR rights are centrally held by governmental entities, a country could codify such regulatory mechanisms to enable the country to transfer its rights to private parties. For example, in Cambodia, the national government has sovereign rights to ERRs, but it confers them to project proponents in instances where they are seeking authorization for the mitigation activities to generate ITMOs (Royal Government of Cambodia 2024). Similarly, in Mozambique, the national government is the legal owner and titleholder of ERRs in the first instance. However, in the context of REDD+, the Ministry of Finance has the authority to manage the rights to ERRs through the issuance, transfer, and withdrawal of titles and certificates. Private project proponents for REDD+ activities can apply for a license that, if granted by the government, entitles the license holder to use rights to the ERR certificates as well as to usufruct rights to commercial carbon credits based on the ERR certificates (Regulations for Programs and Projects Related to Emission Reduction from Deforestation and Forest Degradation, Conservation, and Enhancement of Carbon Stocks (REDD+): https://www.fnds.gov.mz/index.php/en/documents/legislation/decreto-redd).

Other countries, often with stronger private property protections, take the approach of extending ERR rights to the relevant entity that owns the land or operates the technology giving rise to the ERRs, which can help to ensure greater direct engagement from the communities most affected by the mitigation activities and afford them stronger legal claims to equitable benefit sharing.[83] However, in circumstances involving smallholders or more complex private ownership structures, achieving scaled investment and impact could require independently contracting with large numbers of private property owners, which could increase administrative burden and transaction costs (ADB 2025). A country may also take a hybrid approach to ownership of ERR rights (see **Box 5.4** for an example). For further discussion on additional aspects of ERR rights to be considered in the case of jurisdictional crediting approaches, see **Box 5.3**.

### Box 5.3 Additional Considerations for Jurisdictional Approaches

The way a country defines emission reduction or removal (ERR) rights may also impact the scale of mitigation activities. As many countries transition to and begin implementing jurisdictional-scale mitigation programs, their carbon market frameworks must address how all existing legal ERR rights holders are accommodated.

Where land and natural resource ownership is traditionally centralized, a carbon market framework vesting both ERR rights and carbon credit issuance in the national government may be appropriate. In such cases, the existing legal tradition creates an historical governance pattern and legal foundation for pursuing jurisdictional-scale programs.

Where there is traditionally stronger individual and community land ownership, the existing legal context supports assigning or extending ERR rights to the individual property owners associated with the mitigation activities. Such decentralized allocation of ERR rights makes project-scale activities available to a greater number of private entities and encourages transactions with individual ERR rights holders.

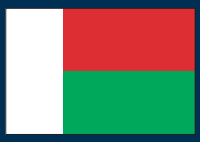
83 Brazil is a country with recognition of individual ownership of ERR rights. Its recent law establishing the Brazilian System of GHG Emissions Trade creates an asset (the Certificate of Verified Reduction or Removal of Emissions), which represents the effective reduction of emissions or removal of GHG emissions, and which can be obtained and held by private project proponents that have a concessionaire, legitimate ownership, or usufruct right to the land. See Federative Republic of Brazil Law N. 15.042 of 11 December 2024: https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/lei/l15042.htm.

Where private ERR ownership is recognized, centralizing carbon credit transaction authority in the national government to accommodate jurisdictional-scale crediting requires additional consideration. While it could enable more efficient scaling for carbon market engagement at the jurisdictional level, it could also result in conflicts with ERR rights holders if they are negatively impacted.

Where there is no tradition of centralized resource ownership encouraging jurisdictional approaches, it will be critical to require robust stakeholder consultation, along with mechanisms to memorialize ERR rights transfers from, and benefit sharing to, affected property owners and relevant stakeholders. These countries are also more likely to benefit from comprehensive "nesting" rules that enable existing private sector project-scale mitigation activities to contribute to larger jurisdictional-scale programs.[a]

a. A nesting framework should accommodate contractual arrangements for existing project-level mitigation activities, while establishing clear hierarchies for carbon rights allocation and transfer within the larger jurisdictional program. There are many resources available on nesting policies and frameworks, such as World Bank 2021c.

## Box 5.4 Country Spotlight: Recognizing, Owning, Holding, and Transferring ERR Rights



### MADAGASCAR

**Title:** Decree No. 2025-626 Concerning the Regulation of Access to the Forest Carbon Market (Décret n° 2025-626 relatif à la régulation de l'accès au marché du carbone forestier) (Decree)[a]

**Legal instrument:** The Decree was established by the Minister of the Environment and Sustainable Development to regulate access to the forest carbon market. The Decree defines emission reduction or removal (ERR) ownership and describes the procedures and conditions for implementing forestry-based carbon projects, covering Reducing Emissions from Deforestation and Forest Degradation (REDD+), forest conservation, sustainable forest management, afforestation and restoration, and agroforestry. The minister's authority to design and implement environmental policies is conferred via Decree No. 2022-482.[b]

**Relevant legal framework option:** Define the nature and rights available in ERRs created via mitigation activities explicitly (see **Table 5.1**).

**Description:** The Decree clarifies who holds the right to generate ERRs based on the activity type and ownership classification of the land upon which the activity occurs. The country holds the rights to ERRs for all REDD+ activities in all forest types. For other eligible activities, the project proponent holds the rights to ERRs generated on private land and by afforestation or reforestation activities on state land meeting defined criteria. The Decree also confers property rights to ERRs, specifying that the legal title to certified ERRs is assignable and transferable via contract, contingent upon compliance with all relevant Decree provisions.

a. See Decree No. 2025-626: https://www.environnement.mg/wp-content/uploads/2025/06/DRMCF-portant-sur-le-Decret-2025-626-relatif-a-la-regulation-de-l-acces-au-marche-du-carbone-forestier.pdf.
b. See Decree No. 2022-482: https://cnlegis.gov.mg/uploads/D2022-482-VF.pdf.

### Legal Framework Options

In determining how to define and assign ERR rights, a country should consider how to legally recognize, demonstrate ownership of, and demonstrate holding and transfer of ERR rights. Expressly defining available ERR rights within the carbon market framework (that is, as new law) provides clarity to market participants and may mitigate potential confusion, litigation, and reputational damage. Regarding the ownership, holding, and transfer of ERR rights, the carbon market framework should reflect a country's existing legal tradition (for example, whether property rights are typically centralized in a governmental authority or there is a strong tradition of private property rights) and its determination of the optimal balance between certainty, efficiency, and equity. The carbon market framework should also align with the legal tradition of the jurisdiction as applied to the anticipated mitigation activities (for example, whether ERR rights run with ownership or use rights for technology-based mitigation activities and real property rights for land-based mitigation activities).[84] If a country does not appropriately ground its assignment of ERR rights in existing law and legal tradition, then it risks exposure to claims of expropriation, which erodes confidence in carbon market activity in the country.

84 Another emerging approach is policy crediting, whereby a country mobilizes finance for jurisdictional or sectoral scale interventions by deploying results-based payments for verified ERRs generated through policy compliance. Under a policy crediting approach, the implementing country may assign ERR rights either to itself or to regulated entities responsible for the mitigation results achieved via policy implementation. Considerations for policy crediting are outside the scope of this Legal Toolkit since they relate predominantly to policy schemes for results-based climate finance and compliance carbon markets. However, policy crediting may be a relevant pathway to ITMO creation, so it may be a useful complement to a country's carbon market framework in some instances (World Bank 2025a).

If a country does not expressly define ERR rights in its carbon market framework, then it risks market confusion about the ability to own and transfer the fundamental asset that enables carbon markets to function. **Table 5.1** presents potential advantages, disadvantages, and example legal text for defining ERR rights in a carbon market framework.[85]

**Table 5.1** Legal Framework Option for Recognizing, Owning, Holding, and Transferring ERR Rights

| OPTION: Define the nature and rights available in ERRs created via mitigation activities explicitly.[86] | |
|---|---|
| **Advantages** | • Provides legal certainty for market participants by establishing clear rules associated with recognizing, owning, holding, and transferring emission reductions or removals (ERRs), thereby reducing disputes and encouraging investment in mitigation activities<br>• Creates opportunities for alignment with existing legal frameworks by enabling lawmakers to deliberately integrate ERR rights with established legal concepts, thereby providing predictable assignment of rights and avoiding conflicts with constitutional protections<br>• Facilitates efficient carbon credit transactions by enabling buyers and sellers to transfer ERR rights with confidence, reducing transaction costs and accelerating market development and scaling<br>• Encourages international cooperation and harmonization of carbon credit recognition and ownership structures in order to streamline cross-border transactions and meet international reporting standards |
| **Disadvantages** | • Requires resolution of complex legal analysis, which may involve resolving competing claims across constitutional law, Indigenous Peoples' (IP) rights, and disparate land tenure systems, which may delay implementation<br>• Risks creating unintended distributional consequences by concentrating benefits among certain parties while excluding other impacted stakeholders, including those with informal traditional or possessory rights<br>• Fixes recognition, assignment, and use rights, which (while providing clarity and predictability) may also lead to disputes if not precisely drafted and consistently interpreted by implementing bodies, courts, and market participants |

85 Countries with previously defined ERR rights via legislative or executive instruments (for example, to enable participation in the World Bank's FCPF or ISFL programs) may benefit from reviewing and updating them. Policies related to ERR rights should be reviewed periodically, given the rapid evolution of carbon markets, to remedy any unintended consequences that might arise (for example, exclusion from new markets or transaction structures based on incompatible definitions or assignment of rights).

86 If a country does not expressly define how ERR rights are recognized within its legal framework, including the existing law and jurisprudence in which such rights are based, then they will be inferred from disparate legal authority and/or guidance.

| Example legal text | **Section V. Carbon Rights, Credit Issuance, and Registry Procedures**<br>**A. Legal nature and available rights in emission reductions or removals**<br>1. The original owner of ERRs, including the [unlimited] right to derive economic and noneconomic benefit from such ERRs, shall be [insert determination after thorough analysis of existing law; for example, the national government or the legal owner of the mitigation activity that is the source of the ERRs].[87]<br>2. The Administrative Authority shall develop [regulations][guidance] prescribing the requirements for demonstrating ownership of ERRs. Such [regulations] [guidance] shall be determined and implemented in accordance with [insert relevant existing law, for example, constitutional principles, contract law principles, or reference to a specific statute or code]. |
|---|---|

*Source:* Original for this publication.

## 5.2. Legal Nature and Available Rights in Carbon Credits

### Overview

To date, much of the carbon market terminology has not been clearly or consistently defined across jurisdictions. For the purposes of this Legal Toolkit, a carbon credit means a standardized, tradable unit that represents the economic and environmental value derived from implementing verified ERRs, with one carbon credit representing one ton of ERRs, measured in $CO_2$ equivalent terms (that is, 1 carbon credit = 1 $tCO_2eq$). These assets are generally assumed to be the quantified and serialized representation of the reduction or removal from the atmosphere of a volume of $CO_2$ equivalent, as certified by a carbon crediting standard and recorded in a registry or database. In the context of a country's carbon market legal framework discussed in this Legal Toolkit, such assets may include verified carbon credits traded in the VCM or generated under international compliance markets, including Article 6 (that is, ITMOs under Article 6.2 and credits issued via PACM under Article 6.4).[88]

87 The analysis of existing law and legal tradition may lead to different determinations regarding technology-based and land-based ERRs. For instance, a national government may be the original owner of ERRs achieved through carbon sequestration or REDD+ activities, while a private project proponent that is the legal owner of land or technology that gives rise to the ERRs may be the original owner of ERRs achieved through any other mitigation activity. If such a distinction exists, a country should memorialize all relevant pathways to recognizing ERR rights. See **Box 4.1** (Mozambique) and **Box 5.4** (Madagascar) for more details on options for defining ERR rights.

88 There is a distinction between carbon credits that are authorized and correspondingly adjusted under Article 6 (authorized carbon credits) and those that are not authorized for international transfer (nonauthorized carbon credits). Both types of carbon credits represent instruments over which a proprietary interest can be held. Nonauthorized carbon credits come with the understanding that the country may claim the ERRs associated with that carbon credit for purposes of reporting under its NDC; whereas authorized carbon credits embody the ERRs without such governmental claim. The market for trading each type of carbon credit is still evolving its consensus positions around pricing differences and claim implications, noting that this distinction is likely to impact both to some degree.

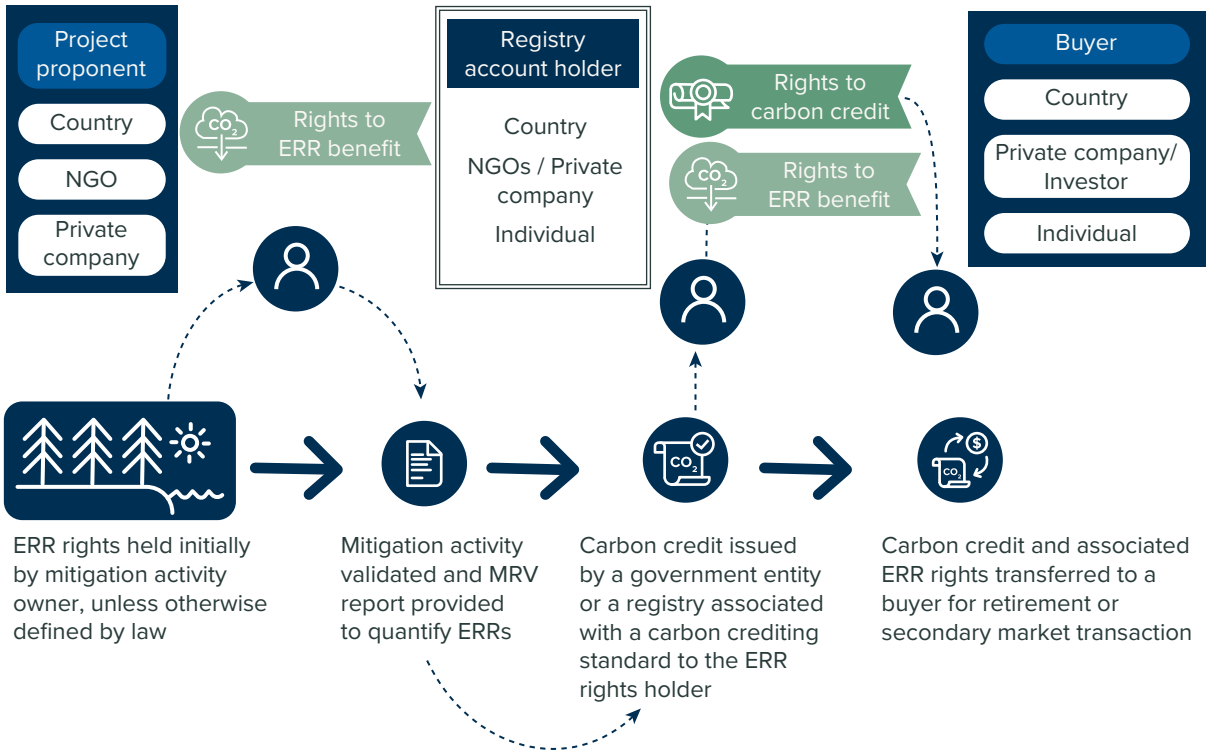
Unlike ERR rights, which generally originate with the mitigation activity owner - either the operator of the technology or owner of the land through which they are achieved - carbon credits are only created when they are issued and recorded in a registry account. Thus, the rights to carbon credits are generally considered to originate with the registered holder of the account in which they are created.[89] Because the rights to ERRs and carbon credits are demonstrated by different ownership interests (that is, ownership or use rights to the technology or land versus ownership of a registry account), carbon crediting standards and credit issuers require the project proponent to demonstrate that it has the legal rights to the underlying ERRs. For instance, in the case of technology-based mitigation activities, the ERR rights holder may be asked to demonstrate its ownership and control over the mitigation activity responsible for the ERRs, which may be verified through contracts or other official documentation (Puro.earth 2024). In the case of land-based mitigation activities, the ERR rights holder may be asked to show its title to the land on which the mitigation activity occurs, which may be verified via a formal search conducted in the relevant property registry or by contractual arrangements with the landholder of record (FCPF 2018). This practice is intended to prevent double issuance for the same emission mitigation activity, that is, multiple credits being created for the same ton of ERR.

**Figure 5.1** shows a simplified representation of a carbon project cycle through which a mitigation activity results in ERRs, which may then be used as the basis for creating carbon credits.[90] This representation demonstrates where along the process the rights to ERRs and to carbon credits are generally recognized and assigned and how they are subsequently transferred.

89 There are custodial and principal-agent relationships that could be exceptions to this general rule.

90 See **Appendix B** for a more detailed description of the actors and sequencing involved in carbon credit transactions.

**Figure 5.1** Representative Process for Generating Carbon Credits




The ability to hold and transfer rights to ERRs depends on applicable national legal frameworks and traditions.

*Source:* Original for this publication.

*Note:* ERR = emission reduction or removal; MRV = monitoring, reporting, and verification; NGO = nongovernmental organization.

The current market consensus is that carbon credits should be treated as property,[91] with a country either implicitly or explicitly applying the legal attributes of property and its respective property law to them. Granting these attributes to carbon credits has important market benefits, particularly in respect of the clarity they provide regarding ownership and ability to transfer credits, which are extremely significant to private-sector project proponents and investors (World Bank et al. 2025). Where carbon credits are governed by property law, they are typically assumed to have the following characteristics:

- Rights to carbon credits are created and demonstrated in accordance with applicable domestic property law.
- Rights are proprietary - that is, they are enforceable against any buyer that violates them (for example, by taking a carbon credit from the rightful holder).
- Rights holders can transfer their rights to any buyer. In the event of a rights holder's death, carbon credits would be transferred by the applicable laws of succession.

91 This consensus applies in the context of carbon credits, which derive from activities creating ERRs (UNIDROIT, 2025). In some contexts, emission allowances issued under country ETS are treated as limited permits to emit or other administrative instruments.

- Rights holders can grant a security right over carbon credits, meaning they can be used as collateral. A security right may be made effective, *inter alia*,[92] by a secured creditor becoming the registered holder of the carbon credits pursuant to an agreement between the grantor and creditor.
- If a rights holder becomes insolvent, carbon credits will form part of their estate, available for distribution to the holder's creditors.

Within each country's legal system, carbon credits may be characterized as different types of property, as the specific regulatory classification remains the purview of domestic law (that is, national and subnational property law, commercial codes, and sector-specific regulations). One common approach is to treat carbon credits as intangible assets.[93] While other approaches currently exist,[94] many market actors expect carbon credits to be treated as intangible assets capable of physical settlement (that is, akin to commodities). The property treatment of carbon credits is particularly important for private-sector project proponents and investors, who seek clear rules for carbon credit ownership and title, credit transferability and tradability, and the enforceability of contracts governing carbon market transactions. They also seek comfort regarding the stability of the regulations governing these matters. Specifying in this level of detail how carbon credits will be treated by a country's legal system helps market actors to understand what other legal requirements may be relevant and applicable to owning or transferring carbon credits[95] and what rights they may have in the context of resolving carbon market disputes.[96] In instances where additional legal requirements are applicable, a country may establish further guidance or interpretation (for example, commodity law and regulation) in the context of a carbon markets use case.

92 Other means of creating and perfecting security interests available under domestic secured transaction laws may also be applied.

93 In the United States, carbon credits have been treated as "general intangibles" under the Uniform Commercial Code and nonfinancial commodities by the Commodity Futures Trading Commission (when subject to physical transfer). Similarly, in Côte d'Ivoire, under its legal framework for REDD+ activities, carbon credits are defined as "intangible property" - that is, movable incorporeal assets (UNIDROIT 2025).

94 For instance, Australian Carbon Credit Units and Safeguard Mechanism Credits have been considered financial products under Australian law. Argentina, representing a relative minority view, has indicated that units issued under the CDM of the Kyoto Protocol are comparable to securities under its domestic law (UNCITRAL and UNIDROIT 2024). Other jurisdictions may treat carbon credits as contractual rights or as tradable licenses or permits. When carbon credits are defined as a bundle of contractual rights, their legal status and enforceability derive from the terms of privately negotiated contracts and therefore they would not have legal standing outside of the specific contracts (ISDA, 2021). Another alternative has been to classify carbon credits as tradable licenses or permits granted by the authorities to allow the holder to emit a specified amount of GHGs This classification is typically used in compliance cap-and-trade systems. Even if it may be appealing to regulators because they have the ability to unilaterally modify, suspend or revoke licenses, it creates uncertainty for market participants.

95 Other legal requirements under public or private law that may be applicable include: specific accounting treatment; limitations on holding or trading; foreign ownership limitations; transfer pricing, levies, or fees; solvency and bankruptcy regulations; or other specialized reporting requirements.

96 See **Chapter 7** for a detailed discussion on "Enforcement and Dispute Resolution."

## Box 5.5 Country Spotlight: Defining the Legal Nature of Carbon Credits

**BRAZIL**



**Title:** Law No. 15,042 of December 11, 2024: Establishes the Brazilian Greenhouse Gas Emissions Trading System (SBCE) (Lei No. 15,042 de 11 de dezembro de 2024: Institui o Sistema Brasileiro de Comércio de Emissões de Gases de Efeito Estufa – SBCE) (Law)[a]

**Legal instrument:** The Law was decreed by Congress and sanctioned by the President to establish the SBCE. The Law provides the basis for the country's emissions trading system (ETS) and international carbon trading through the voluntary carbon market (VCM) and Article 6. It also amended the 2012 Forest Code, the 1976 Securities and Exchange Commission Law, and the 1973 Public Records Law to align with the new requirements under the Law.

**Relevant legal framework option:** Define the legal nature of, and rights available in, carbon credits explicitly (see **Table 5.2**).

**Description:** The Law recognizes two distinct legal instruments for trading in the SBCE: emission allowances (called Cotas Brasileira de Emissões, or CBEs) and (2) Verified Emission Reduction Certificates (called Certificados de Redução ou Remoção Verificada de Emissões, or CRVEs). CBEs are legislative instruments distributed by the SBCE to regulated facilities or sources and are treated as fungible, tradable assets representing the right to emit one ton of carbon dioxide equivalent ($tCO_2e$). CRVEs are converted from carbon credits for use in the SBCE and treated as fungible, tradable assets. Carbon credits themselves are defined as "tradable, autonomous asset[s], . . . represent[ing] the verified retention, emission reduction, or removal of 1 $tCO_2e$, generated by public or private projects or programs using national or international methodologies with measurement, reporting, and verification criteria, external to the SBCE." However, forest preservation and reforestation credits (excluding those from jurisdictional programs, provided all legal limitations are respected) are separately defined as frutos civis (civil fruits), which describes income from property separate from the property itself. As such, these credits are considered secondary assets or benefits (which may be transferred or separated from the main property) under Brazilian property law.

The Law acknowledges that carbon credits may be initially offered on the VCM by the credit rights holder. However, if the credits originate from a methodology accredited by the SBCE, conduct appropriate MRV in accordance with the methodology, and are registered in the SBCE Central Registry, they are then considered CRVEs.[b] Further, the Law expressly requires that carbon credits generated in Brazil used for international transfer of mitigation outcomes (MOs), and subject to prior authorization by the designated national authority (DNA), shall be registered as CRVEs. Both CBEs and CRVEs are considered securities, subject to Brazil's Securities Commission Law, when traded in the financial and capital markets; however, to the extent the instruments are otherwise used for private placement outside the financial and capital markets, they are not subject to Securities Commission regulations.

The Law also takes a detailed approach to determining original ownership of carbon credits. In general, original ownership is considered to belong to "the generator of the carbon credit or CRVE project," but there are also many specific circumstances that the Law addresses, including the following: the union's, federal district's, states', and municipalities' original ownership of credits generated on their respective public lands and conservation units, provided there is no overlap with third-party ownership or usufruct; original ownership by Indigenous communities of credits generated on their respective Indigenous lands, as described in Article 231 of the Federal Constitution; original ownership by traditional communities of credits generated in sustainable-use conservation units, pursuant to Law No. 9,985, of July 18, 2000; and original ownership by other usufruct holders of credits generated on other public domain properties, provided the usufruct is not held by the public entity that owns the property. The Law also includes rules specific to jurisdictional carbon credit programs under the market-based REDD+ (Reducing Emissions from Deforestation and Forest Degradation) approach - for example, requiring that property under concession, legitimate third-party ownership, or usufruct be immediately excluded in order to confer original ownership of credits they generate to the proposing federal, state, or district executive branch.

a. See Law No. 15,042 of December 11, 2024 (Lei No. 15,042 de 11 de dezembro de 2024): https://www.in.gov.br/en/web/dou/-/lei-n-15.042-de-11-de-dezembro-de-2024-601124199.

b. Once carbon credits have been converted to CRVEs, if they are ultimately used for voluntary GHG emissions offsetting by individuals or legal entities, they must be canceled in the SBCE Central Registry.

### Legal Framework Options

A clear definition of the legal nature of and rights available in carbon credits provides greater clarity to the market and may help avoid disputes over carbon credit transactions. Clarity regarding the nature of and rights to carbon credits strengthens social safeguards, consultations, and IP engagement. A country should strive to take a consistent view on the legal nature of carbon credits[97] to enable broader consistencies across the market, which would help to encourage greater investment from international participants.

If a country does not clearly define the legal nature of carbon credits in its legal framework, market participants and other institutions will be left to form their own interpretations. In this case, the legal nature of carbon credits may be inferred from judicial or legal interpretation of a country's existing law (for example, legislative or executive instruments governing property, commodities, securities, or other financial instruments). Such a laissez-faire approach may lead to inconsistent treatment of the same asset across carbon market participants in different sectors, perceived invalidity of the carbon credits - particularly among international investors and market actors, and general confusion in the market.

As discussed in **Box 2.3**, effectively defining and regulating carbon credits will likely require coordination across a variety of governance authorities. This may include financial regulators and other institutions less familiar with carbon assets and markets. A country's legal framework should include mechanisms to efficiently manage communication and enforcement coordination across these varied entities to ensure a coherent approach to carbon markets.[98]

**Table 5.2** provides a high-level overview of potential advantages, disadvantages, and example legal text for explicitly defining the legal nature of carbon credits in the carbon market framework.

97 There are efforts by UNIDROIT and the IOSCO to develop guidelines for regulators on the legal nature and regulatory treatment of carbon credits, respectively, which aim to support international consensus.

98 See **Chapter 2.3.** for a detailed discussion on "Responsible Authorities & Governance Functions."

**Table 5.2** Legal Framework Option for Defining the Legal Nature of Carbon Credits

| OPTION: Define the legal nature of, and rights available in, carbon credits explicitly[99] | |
|---|---|
| **Advantages** | • Provides legal certainty for all market participants by clearly defining the asset class to which carbon credits belong, enabling appropriate application of existing legal frameworks<br>• Facilitates contract enforcement and dispute resolution by giving courts and arbitrators clear statutory guidance on which legal principles govern carbon credit transactions and ownership transfers<br>• Enables proper regulatory oversight by clarifying which government agencies have jurisdiction over carbon credit issuance, trading, and compliance based on the credits' legal classification |
| **Disadvantages** | • Requires careful analysis of multiple legal frameworks to determine appropriate classification since categorizing credits as property, financial instruments, or another asset type triggers different regulatory requirements and levy implications<br>• Risks limiting market flexibility if statutory classification proves incompatible with emerging trading mechanisms or international market linkages that assume different legal characterizations<br>• Risks unintended consequences for existing transactions if classification differs from how market participants have historically treated carbon credits under contract law or customary practice |
| **Example legal text** | **Section V. Carbon Rights, Credit Issuance, and Registry Procedures**<br>. . .<br>**B. Legal nature and available rights in carbon credits**<br>1. A carbon credit shall be deemed an intangible asset capable of physical settlement and subject to [[the relevant existing laws governing property and contracts] [if existing domestic law precludes such treatment, insert determination after analysis under domestic law (for example, contract right, financial instrument, or good)]].<br>2. The Administrative Authority shall develop [regulations][guidance] further elaborating the implications of the determination in paragraph 1 above, including in relation to any registering, reporting, asserting proprietary rights over, and transferring of carbon credits. |

*Source:* Original for this publication.

99 To provide the greatest clarity and further enhance investor confidence, a country should consider further defining the tax and accountancy treatment of carbon credits. See **Chapter 6.3.** for further details about addressing levies and fees for carbon credit transactions. For additional discussion on clarifying the legal status of carbon credits, see World Bank et al. 2025.

## 5.3. Carbon Credit Issuance

### Overview

The creation of tradable carbon credits involves distinct steps performed by different market actors: A VVB confirms that ERRs have been achieved according to approved carbon crediting standards and methodologies, with such confirmation memorialized in a verification report.[100] The carbon crediting standards body or government authority reviews the verification report and approves the quantity of ERRs eligible for crediting.[101] Registry operators issue serialized carbon credits representing the verified and approved ERRs, creating unitized assets capable of proprietary ownership.[102] Carbon credit issuance - the final step of recording verified ERRs as serialized units on a registry - provides the basis for managing double counting and double claiming through unique identification and tracking of each credit throughout its life cycle. A country should establish a clear governance framework defining the roles, responsibilities, and authority of each actor in this process. Following are the two primary issuance options (World Bank 2022):

- **Issuance by the domestic government:** The country functions as the issuer of carbon credits directly to the project proponent. The credits could be issued by the country (that is, a government agency) on a government-run (that is, national) registry or, for ITMOs under Article 6.2, through the international registry managed by the UNFCCC secretariat, which provides registry services for countries that request that function.[103]

100 See **Chapter 4.1** for further detail on "Mitigation Activity MRV," including responsibilities of VVBs.

101 If a government authority takes on the obligation of reviewing a verification report and approving eligible ERRs for crediting, the country must consider what liability it is also accepting for the accuracy of such reports and approved volumes. To protect itself from liability while also protecting project proponents and investors, the country may elect to impose statutory liability or regulatory penalties on the VVBs for any fraudulent reporting, negligent misstatements, or failure to disclose conflicts of interest that result in undercrediting or overcrediting. Alternatively, the country may elect to require VVBs to provide specific assurances in verification reports that protect the government authority from ultimate liability.

102 When using the term "registry" in this chapter and otherwise in the context of carbon credit issuance, it shall refer to a transactional registry. See **Chapter 5.4** for a more detailed discussion of the different functions that registries may have.

103 As specified in paragraph 50 of Decision 4/CMA.6, the UNFCCC secretariat provides registry services "through which a Party may issue MOs as units" for countries that request this service. This pathway is only applicable for ITMOs under Article 6.2, not for credits under domestic methodologies used for domestic or voluntary purposes. A country choosing this option must ensure its legal frameworks establish clear authority for the issuance function and align domestic procedures with the technical and operational requirements of the Article 6.2 international registry system (UNFCCC 2024b).

- **Issuance by a registry associated with an international or independent carbon crediting standard:** The country recognizes international or independent carbon crediting standards bodies and associated registries managed by nongovernment or international entities (for example, Gold Standard, the PACM, and Verra) or international financial institutions like the World Bank's Carbon Assets Tracking System (CATS)[104] as qualified to issue carbon credits under its domestic carbon market framework. The carbon crediting standards body would instruct the associated registry regarding the number of credits to issue, and the credits are further transferred and tracked on the registry.

A country can also adopt a hybrid approach by allowing issuance both domestically and by the registries associated with the approved carbon crediting standards, which would require establishing both credit issuance pathways. See **Box 5.6** for an example from Thailand.

Allowing issuance by a registry associated with an approved carbon crediting standard does not exempt a country from the responsibility of establishing its own systems for tracking international transfers of domestically generated carbon credits (discussed further in **Chapter 5.4**). A country may need to establish agreements with the approved carbon crediting standards body and/or associated registries to facilitate this tracking process. Some countries use bilateral recognition agreements to formally recognize carbon credits from registries associated with approved carbon crediting standards, allowing them to be valid within their own carbon market frameworks, provided those carbon credits have met national approval requirements. For example, a mutual recognition agreement exists between Gold Standard and Indonesia (Gold Standard 2025a).

Issuance decisions must align with previous decisions made regarding approved carbon crediting standards (see **Chapter 3.2**). A country can only issue credits under methodologies it has developed or recognized, and registries associated with approved carbon crediting standards can only issue credits under their applicable methodologies. Issuance decisions are further dependent on registry capabilities, which are described in **Chapter 5.4**. **Table 5.3** provides an overview of the opportunities and challenges associated with these options.

104 CATS is a transactional registry that supports the issuance and transaction of carbon credits generated under World Bank programs, including the FCPF, ISFL, TCAF, and Ci-Dev. CATS enables a country to issue and track carbon credits without developing its own domestic registry infrastructure, while maintaining the ability to transfer credits to other registries for broader market access through cancelation and reissuance procedures. See https://cats.worldbank.org/?tab=AboutCATS.

**Table 5.3** Overview of Available Approaches for Carbon Credit Issuance

| Approach 1: Issuance by the domestic Government | Approach 2: Issuance by a registry associated with an international OR Independent carbon crediting standard |
|---|---|
| **Carbon credits issued directly by a country in accordance with approved domestic carbon crediting methodologies** | **Carbon credits issued through a registry associated with an international or independent carbon crediting standard (for example, CATS, Gold Standard, the PACM, and Verra)** |
| Affords country control and visibility of credits, including carbon credits authorized for international transfer under Article 6.2 | Leverages established global expertise, creating efficiency while reducing government administrative burden, with major registries adding labels to denote authorized carbon credits |
| Requires national-level capabilities to develop national transaction registry and technical processes required to issue credits (see **Chapter 5.4**) | Requires relinquishing some control over the crediting process (for example, the country must rely on crediting methodologies already approved under the carbon crediting standard), while still needing national-level capabilities to track international trade (see **Chapter 5.4**) |
| Requires direct management of the full crediting life cycle, which can be time and resource intensive | Faster to implement and less administrative cost to the country[105] |
| Allows for use of domestic methodologies that may not be available from international and independent carbon crediting standards; however, these domestically issued carbon credits may not be acceptable for international buyers and transactions | Benefits from international buyer familiarity and acceptance, particularly in compliance markets, of carbon credits issued by registries associated with international or independent carbon crediting standards |

*Source:* Original for this publication.

*Note:* CATS = Carbon Assets Tracking System; PACM = Paris Agreement Crediting Mechanism.

105 PACM participation will require the country to name a DNA.

### Box 5.6 Country Spotlight: Carbon Credit Issuance

**THAILAND**



**Title:** International Carbon Credit Guidelines( ) (Guidelines)[a]

**Legal instrument:** The Guidelines were developed by the National Committee on Climate Change Policy and approved by Thailand's Cabinet to support carbon credit trading under Article 6. The Guidelines supersede the Carbon Credit Management Guidelines and Mechanism from 2022. The basis for the Guidelines derives from the 2007 Regulations of the Prime Minister on Implementation of Climate Change, the 2018 Regulations of the Office of the Prime Minister on Implementation on Climate Change (No. 5), and the 2024 Regulations of the Office of the Prime Minister on Implementation on Climate Change (No. 7).

**Relevant legal framework option:** Option 1: Recognize registries associated with approved carbon crediting standards to issue carbon credits; and Option 2: Establish the governmental body issuance process (see **Table 5.4**).

**Description:** The Guidelines outline the procedures for internationally transferring carbon credits. They specify that carbon credits will be issued by the eligible carbon crediting standards body under which the mitigation activity is registered. The carbon crediting standards body may be the Thailand Greenhouse Gas Management Organization (TGO), the Paris Agreement Crediting Mechanism (PACM), or an international or independent carbon crediting standards body. Regardless of the carbon crediting standard used, international transfers must be recorded in the TGO registry once the director-general approves the international transfer.

a. See Thailand's international carbon credit guideline: https://www.dcce.go.th/article6/policies/.

## Legal Framework Options

A legal framework should define carbon crediting standards and associated registries under which carbon credits can be issued. The selected issuance approach should reflect decisions on approved carbon crediting standards identified in **Chapter 3.2** (Michaelowa et al. 2023). See **Table 5.4** for options for carbon credit issuance, outlining the responsibilities and processes that must be defined for issuance. The options presented are not mutually exclusive.

**Table 5.4** Legal Framework Options for Carbon Credit Issuance

| OPTION 1: Recognize registries associated with approved carbon crediting standards to issue carbon credits. | |
|---|---|
| **Advantages** | • Reduces government administrative burden by delegating issuance processes to entities with existing expertise, infrastructure, and operational procedures<br>• Can be implemented more quickly and less expensively since the country is outsourcing issuance functions<br>• Provides immediate buyer confidence through globally recognized carbon crediting standards and established transactional registry systems familiar to international buyers |
| **Disadvantages** | • Results in loss of control over issuance functions and creates dependency on external entities for carbon market functions<br>• Requires coordination between approved carbon crediting standards body, its associated registry, and the country<br>• Limited to methodologies recognized by the international or independent carbon crediting standards body |
| **Example legal text** | **Section V. Carbon Rights, Credit Issuance, and Registry Procedures**<br>. . .<br>**C. Carbon credit issuance**<br>1. A project proponent may submit a request for issuance of carbon credits to the registry associated with the approved carbon crediting standard, consistent with the relevant carbon crediting standards body's requirements.<br>2. The Administrative Authority shall: have the authority to enter into an agreement with the approved carbon crediting standards body and associated registry to ensure information regarding project proponents and mitigation activities is shared with the country to support oversight and reporting under the Paris Agreement; or rely on the information provided by project proponents under the monitoring, reporting, and verification (MRV) requirements set forth herein. |
| **OPTION 2: Establish the governmental body issuance process.** | |
| **Advantages** | • Provides maximum country control and oversight on carbon credit issuance, including the ability to utilize domestic methodologies that may not be otherwise available in the market<br>• Enables direct revenue generation through issuance fees<br>• Builds domestic institutional capacity in carbon market operations, creating long-term expertise and reducing dependency on external entities |
| **Disadvantages** | • Requires significant institutional investment in developing technical expertise, operational systems, and ongoing capacity for complex carbon market functions<br>• May face buyer skepticism about government-issued credits, particularly regarding independence and technical rigor compared to established international and independent carbon crediting standards<br>• Creates substantial administrative burden on government agencies and increases implementation timelines and costs due to the need to develop domestic methodologies, registry systems, and quality assurance processes |

| | |
|---|---|
| **Example legal text** | **Section V. Carbon Rights, Credit Issuance, and Registry Procedures**<br>. . .<br>**C. Carbon credit issuance**<br>1. The [insert government entity] shall be approved to issue carbon credits to project proponents.<br>2. The Administrative Authority shall develop the necessary process to issue carbon credits by developing relevant [regulations][guidance]. |

*Source:* Original for this publication.

## 5.4. Registry Procedures

### Overview

A registry is an electronic platform that hosts data related to the creation, transfer, use, and cancellation of a carbon credit to enable transparent tracing across its life cycle. A registry performs one or all of the following functions: maintains secure account records, issues carbon credits, and facilitates transfer of carbon credits between market participants. International and independent carbon crediting standards each have separate registries associated with the carbon credits they generate. There is also increasing market demand for "meta-registries" that streamline and aggregate data from different registries in a single platform.

### Registry functions

Through the use of unique serial numbers attached to each unit, registries can track the issuance, holding, transfer, and retirement of each carbon credit, which is integral to preventing double counting and double claiming. This information can also be shared between registries to ensure that credits are not issued, used, or claimed inappropriately across multiple markets. Registries also support reporting requirements under Article 6, as they store the information needed to track authorizations and transfers that may impact NDC achievement (World Bank et al. 2025).

A country has two main types of registries it may use: tracking or transactional. Each type serves different purposes and requires different technical capabilities. A single registry may perform both of these functions depending on its design and the country's needs. See **Table 5.5** for further information on each registry type and **Box 5.7** for how Côte d'Ivoire designed its national registries.

**Table 5.5** Scope of Registry by Functionality

| Functionality | Scope |
|---|---|
| **Tracking** | Mirror and display the status of carbon credits (that is, by providing a snapshot of issuance, transfer, use, retirement, and cancellation data), rather than directly effectuating such actions. Can reflect information from national registries, the Article 6.2 international registry, the Paris Agreement Crediting Mechanism (PACM), or other international or independent registries. Supports the United Nations Framework Convention on Climate Change (UNFCCC) reporting requirements. |
| **Transactional** | Create carbon credits, each with unique serial numbers, and record transfer, use, retirement, and cancellation, including all required credit and mitigation activity identification information (for example, project proponent, methodology, mitigation activity type, credit quantifications, vintage, and validation and verification documentation). Can facilitate transactions by effectuating transfers between account holders within registry or across registries.[106] |

*Source:* Original for this publication.

Tracking registries serve a monitoring function without conducting transactions. They use a "pull-and-view" process to monitor issuance and transaction data from other registries (Michaelowa et al. 2023). Such tracking registries are used to aggregate data about carbon credits held in multiple different transactional registries, *inter alia*, to help track international transfers of credits generated domestically. Tracking registries do not require the technical infrastructure or processes to issue credits, but they must have the functionalities needed to track and account for carbon credits traded internationally to support accounting and reporting on corresponding adjustments.[107]

Transactional registries are the most sophisticated systems. They must have the technical capabilities to issue a carbon credit, assign it a unique serial number, and facilitate carbon credit transfers between parties. Transactional registries require robust security measures and reliable processes to ensure transaction integrity, as well as comprehensive procedures for opening accounts, including identity verification and know-your-customer (KYC) requirements, which can add administrative complexity.

The electronic registries themselves are often built and maintained by third-party technology providers. A country that establishes its own carbon crediting standards and directly issues carbon credits may also hire outside technology experts to build and maintain its registry. A key consideration when engaging a third-party

106 Transactional registries in the VCM have historically relied on over-the-counter purchase agreements to memorialize carbon credit transactions. The data generated in the transactional registry is, therefore, limited to details demonstrating the transfer of a volume of credits from one account owner to another. These registries have historically not included mechanisms to enable payment between account holders (as opposed to carbon trading exchanges).

107 This will likely require the entity responsible for the tracking registry to put linking or other recognition agreements in place with third-party transactional registries to facilitate data sharing.

technology provider is determining what rights they will have with respect to the data hosted on the registry. It will be important when negotiating contracts for registry services to ensure that a country maintains requisite access and use rights to data related to its national carbon inventory and reporting obligations; retains some level of enforcement powers to ensure data associated with its natural resources, businesses, and citizens is processed by third parties in accordance with applicable law; and does not forfeit, without compensation, its ability to monetize data related to ERRs and carbon credits to the extent allowed under domestic law.[108] In order to ensure the bankability of carbon credit–generating projects, registries should allow security interests to be perfected by formally registering liens on specific serial numbers since this is generally required by commercial lenders to a project.

**Registry interconnection**

Both tracking and transactional registries are dependent on linkages between registries (Michaelowa et al. 2023). These linkages support transparency and registry interoperability, and can either focus on data sharing or enable carbon credit transfers, depending each registry's functions and needs. National registries without issuance and transaction capabilities may set up tracking registries that replicate third-party data on issuances and credit status within their own systems.

Registry interconnection requires a regulatory framework that defines disclosure obligations, specifies what information must be shared, and clarify institutional roles. A country should establish rules governing which entities are responsible for reporting carbon credit data (for example, registry operators, carbon crediting standards bodies, project proponents, or government authorities) and determine what information must be disclosed to support market transparency and prevent double counting. This includes defining requirements for cross-border data sharing to support Article 6 reporting obligations and international market participation.

In addition to linking registries, a country can utilize metadata repositories that house open-source information on carbon credits (Michaelowa et al. 2023). The Climate Action Data Trust (CAD Trust) is an example of this type of database. Developed by the International Emissions Trading Association, World Bank, and Government of Singapore, the CAD Trust employs blockchain technology to track information on the issuance and use of each credit.[109] Although such data repositories provide accessible records of credit status and transactions, a country must still establish legal requirements for when and how registry operators and market participants must report information to these systems.

108 For instance, where allowed under domestic data protection and processing law, there may be inherent value in the ability to aggregate and create derivative products from national emissions data (for example, assessments of ERR viability across geographies and demographics or more precise pricing predictions).

109 See https://climateactiondata.org/about/.

### Articles 6.2 and 6.4 registry requirements

A country intending to participate in Article 6.2 of the Paris Agreement should ensure that its registry approach supports Article 6 reporting requirements. To participate in Article 6.2 transactions, a country is required to have, or have access to, a registry that is able to track each carbon credit through its unique serial number (UNFCCC 2021a).

A country has several registry options to meet these requirements. It may opt to use the Article 6.2 international registry for issuance and/or tracking purposes; however, this only applies to ITMOs, not carbon credits used toward domestic or voluntary purposes. The UNFCCC developed this international registry specifically for countries that do not have or do not have access to a registry that can perform all of the required tracking functions (UNFCCC 2021a). Beyond tracking, the international registry can also issue carbon credits for countries that need the issuance services to participate in cooperative approaches (UNFCCC 2024b).

The Article 6 registry infrastructure also includes the PACM registry, which operationalizes Article 6.4 and can issue, transfer, and cancel A6.4ERs (UNFCCC 2022). The Article 6.2 international registry and the PACM registry will be connected and interoperable (UNFCCC 2021), and national registries are also able to connect to the PACM registry, enabling tracking and transfer of carbon credits between the registries (UNFCCC 2024c). This interconnected approach ensures that a country can choose the registry configuration that best fits its technical capacity and policy objectives while maintaining compliance with Article 6 requirements. Under the PACM, the country must approve the opening of holding accounts in the PACM registry for entities it has authorized to participate in Article 6.4 activities (UNFCCC 2022).

### Box 5.7 Country Spotlight: Designing Technical Functions of National Registries



**CÔTE D'IVOIRE**

**Title:** Operational Procedures Manual for Participation in Carbon Market and Non-market Mechanisms in Côte d'Ivoire (Manuel des Procédures Opérationnelles de Participation aux Mécanismes de Marché et Non-Marché Carbone en Côte D'ivoire) (Manual)[a]

**Legal instrument:** The Manual was developed by the Ministry of Environment, Sustainable Development and Ecological Transition, which details the rules and procedures for operationalizing mitigation activities within Côte d'Ivoire, including under the voluntary carbon market (VCM) and Article 6.2. Presidential Decree 2024-658 of August 1, 2024 mandates the Carbon Market Office (CMO) within the Ministry to manage the implementation of carbon market mechanisms in accordance with the Manual.[b] The Decree further assigns the Technical Secretariat of the CMO the responsibility for establishing and managing the national carbon registry.

**Relevant legal framework option:** Option 2, with additions: Use a nontransactional national registry for credits intended to be used in the VCM and mirror information from registries associated with approved carbon crediting standards; directly manage the authorization, issuance, and transfer of Internationally Transferred Mitigation Outcomes (ITMOs); and assign broad monitoring and approval authority for carbon credit transactions to the national government (see **Table 5.6**).

**Description:** Côte d'Ivoire established a comprehensive National Carbon Registry administered by the Technical Secretariat to meet Article 6.2 requirements.[c] The National Carbon Registry facilitates tracking of carbon credit transactions on the VCM as well as ITMO transactions. With respect to VCM transactions, the CMO reviews project information submitted by project proponents and validation and verification bodies (VVBs) to independent carbon crediting standards. Credits are issued by registries associated with independent carbon crediting standards, but the CMO must approve those issuances before the project proponent can sell them. With respect to ITMO transactions, the National Carbon Registry functions include recording opening registry accounts for authorized entities, authorization, issuance, first transfer, cancellation - including for overall mitigation in global emissions (OMGE) and use for Nationally Determined Contribution (NDC) achievement. The Manual also specifies that the CMO may approve the use of other registries, including those provided by independent carbon crediting standards, the Article 6.2 international registry, or infrastructure provided by multilateral and bilateral partners engaged in cooperative approaches.

a. MINEDDTE 2024.

b. See Decree N. 2024-658 of August 1, 2024: https://environnement.gouv.ci/wp-content/uploads/2015/08/DECRET-N%C2%B0-2024-658-DU-01-AOUT-2024-PORTANT-CREATION-ATTRIBUTIONS-ORGANISATION-ET-FONCTIONNEMENT-DU-BUREAU-DU-MARCHE-CARBONE-EN-CI.pdf.

c. See the National Carbon Registry: https://registre-carbone-national.environnement.gouv.ci/.

### Legal Framework Options

A country has two primary options for how to approach national registry design, each with different technical and resource requirements (see **Box 5.7**). The first approach involves leveraging the functionality of one or more transactional registries associated with an approved carbon crediting standard that handles all registry functions. The second involves creating a tracking-only national registry that recognizes and mirrors transactions processed through registries associated with international and independent carbon crediting standards. A country may also adopt combinations of these approaches to balance control with practical implementation constraints. For example, it may utilize the registries associated with approved carbon crediting standards while developing a tracking-only registry to mirror relevant third-party transaction data for national accounting purposes. This hybrid approach creates flexibility to add functionality to the national tracking registry over time to support limited issuance and transaction features for domestically developed methodologies.

Under the first approach, when a country chooses to outsource transactional registry functionality to a registry associated with an approved carbon crediting standard (option 1 in **Table 5.6**), it should identify minimum eligibility criteria to ensure that they meet national needs and policy objectives. **Box 5.8** provides indicative eligibility criteria that a country may consider when selecting these registries, covering functions from data tracking to security protocols. Under the second approach, a country may choose the tracking-only option when technical, capacity, or funding constraints make building a resource-intensive transactional registry impractical (option 2 in **Table 5.6**). Decisions on registries should follow from a country's chosen approach to approved carbon crediting standards (for example, recognition of domestic carbon crediting standards and/or international and independent carbon crediting standards).

A third, alternative option would be to create a fully functional, national transactional registry to exclusively support domestically developed carbon crediting standards and methodologies. Taking this approach is not currently considered practicable for most countries, as it requires significant time, resources, and capacity, and results in a system of mitigation activities and credits that are unfamiliar to the broader international market. Thus, it requires significant domestic investment for uncertain returns and may only be realistic for a country with a sufficiently large domestic market.[110]

110 Under any of these options, a country may ultimately engage with a third-party technology provider to develop and maintain the digital registry infrastructure. Whether a country works through an approved carbon crediting standard or directly with such a technology provider, it will need to ensure that it maintains relevant oversight and enforcement powers to ensure that its applicable data protection and processing laws are upheld regarding its natural resources, businesses, and citizens, including assessing any penalties for improper data processing on the part of any third-party technology provider.

### Box 5.8 Indicative Eligibility Criteria for Selecting a Transactional Registry

A country may choose to approve one or more registries associated with international or independent carbon crediting standards in its carbon market framework to track issuances, transfers, cancellations, and retirements of carbon credits. In doing so, it should consider specifying minimum eligibility criteria, such as the ability to

- Create an analytical ledger that tracks the listing, registration, suspension, and cancellation of emission mitigation activities and carbon credits as well as other instruments resulting from such activities;
- Make a relevant set or subset of data - for example, all carbon credit data or data describing mitigation activity registration, credit generation, retirement, and reversals publicly available;
- Assign and display labels associated with carbon credits that meet certain criteria or align with specific regulations, protocols, and frameworks (for example, Article 6 of the Paris Agreement);
- Require and/or support robust screening and know-your-customer (KYC) processes;
- Require compliance with anti-money laundering and antibribery and corruption provisions;
- Perform regular data integrity analyses to identify potential inconsistencies, including suspected double counting or double claiming of emission reductions or removals (ERRs);
- Share pertinent credit data with a national nontransactional registry, including willingness to enter into relevant agreements and grant relevant permissions, where applicable;
- Maintain security systems and procedures designed to prevent unauthorized access to, misuse of, damage to, or disruption to its registry services;
- Have relevant capabilities that enable it to comply with applicable domestic data protection and processing laws, and acknowledge associated penalties for breach of such laws; and
- Make reasonable representations regarding security, functionality, availability, and technical integrity.

Regardless of which registry approach a country selects, it has international obligations under Article 6 to, at minimum, track all carbon credits that are authorized and internationally transferred to ensure proper accounting of all ITMOs and their impact on NDC targets. **Table 5.6** provides further details about how national registries may be designed within a country's carbon market framework to meet these recommended functions while accommodating different technical and institutional capacities. **Figure 5.2** shows a decision tree for developing a legal framework for carbon rights, credit issuance, and registry procedures.

**Table 5.6** Legal Framework Options for Designing Technical Functions of National Registries

| OPTION 1: Outsource transactional functions to a registry(ies) associated with an approved carbon crediting standard(s). | |
|---|---|
| **Advantages** | • Leverages established market infrastructure and technical expertise without requiring country to develop complex transactional systems, security protocols, and know-your-customer (KYC) procedures<br>• Reduces initial government administrative burden and costs compared to building domestic registry capacity<br>• Provides immediate market access and buyer familiarity through established registries that international buyers already use and trust<br>• Enables faster implementation by utilizing existing operational systems rather than developing new domestic transactional capabilities |
| **Disadvantages** | • Reduces country control and oversight over registry functions<br>• Creates dependency on external registry operators for carbon market infrastructure<br>• May limit a country's right to the registry data or preclude the government's potential monetization of national carbon market data if not addressed in the contractual terms |
| **Example legal text** | **Section V. Carbon Rights, Credit Issuance, and Registry Procedures**<br>. . .<br>**D. Registry procedures**<br>1. Approved registries shall be used by project proponents to track issuances, transfers, cancellations, and retirements of carbon credits.<br>2. The Administrative Authority shall consider the following criteria to evaluate registries: [insert list of eligibility criteria].<br>**{Indicative eligibility criteria provided in box 5.8 (not exhaustive)}**<br>3. The registries associated with the following carbon crediting standards shall be deemed to meet the criteria:[111] [insert list of approved carbon crediting standards]. |

111 Depending on the carbon crediting standards approved, designated registries may subcontract with specialized third-party registry operators (for example, APX and S&P). However, for purposes of assigning responsibility for providing registry functions, a country would typically look to the standard body rather than its contracted service provider.

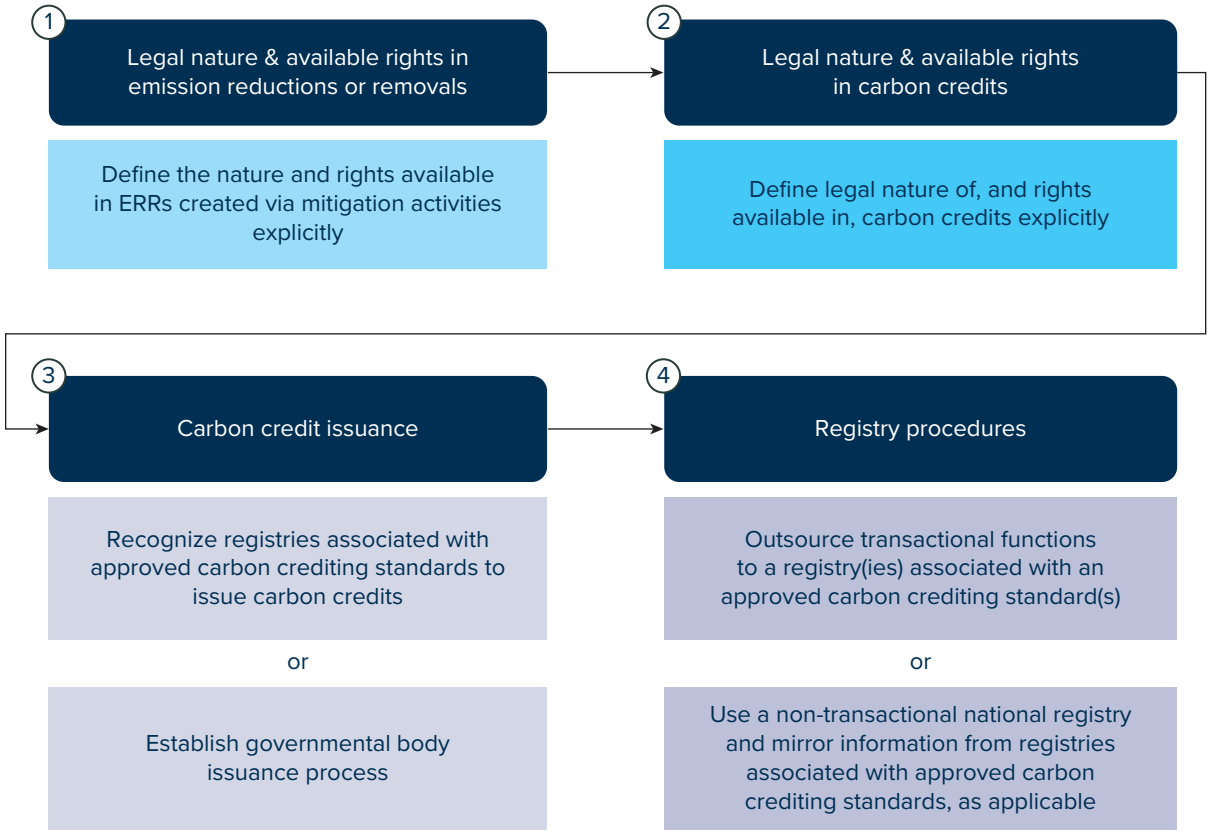
| | |
|---|---|
| | **{Indicative list (not exhaustive)}**<br>a. Verified Carbon Standard (VCS)<br>b. Gold Standard<br>c. Architecture for REDD+ Transactions The REDD+ Environmental Excellence Standard (ART TREES)<br>d. Paris Agreement Crediting Mechanism (PACM)<br>e. Article 6.2 international registry<br>4. The Administrative Authority shall maintain a list of approved registries and may include additional registries through [regulations][guidance]. |
| **OPTION 2: Use a nontransactional national registry and mirror information from registries associated with approved carbon crediting standards, as applicable.[112]** | |
| **Advantages** | • Maintains country visibility and control over all carbon credit activities while still leveraging third-party market infrastructure for transactions<br>• Enables comprehensive national tracking and reporting for Nationally Determined Contributions (NDC) accounting and corresponding adjustments without building full transactional capabilities |
| **Disadvantages** | • Requires technical integration and interoperability agreements with multiple third-party registries, creating ongoing coordination requirements<br>• May result in data synchronization issues between national and third-party registries, potentially creating accounting discrepancies or delays<br>• Still requires significant government capacity to develop and maintain nontransactional national registry infrastructure and manage multiple bilateral agreements with registry operators |
| **Example legal text** | **Section V. Carbon Rights, Credit Issuance, and Registry Procedures**<br>. . .<br>**D. Registry procedures**<br>1. The Administrative Authority may enter into an agreement with each registry associated with an approved carbon crediting standard. The agreement shall govern interaction between the third-party registry and the national registry, including the mirroring of information from the third-party registry on the national registry and interoperability between the two registries.[113]<br>2. A national registry shall reflect issuances, transfers, cancellations, and retirements of carbon credits that occur on the registry.<br>3. All data hosted on the national registry shall be subject to and processed in accordance with [applicable domestic data protection and processing law]. |

*Source:* Original for this publication.

112 Mirroring third-party registry information in the national registry is a way to track third-party credits for domestic purposes, while using the market infrastructure for issuance established under international and independent carbon crediting standards. For domestic methodologies included in the carbon market framework, there is no third-party registry to mirror; therefore, the national registry will also need the appropriate functionality to support domestic methodologies.

113 If the country implements an endorsement process for mitigation activities generating nonauthorized carbon credits (as described in **Chapter 6.1**), project proponents would need to obtain country approval before generating and being issued credits on a third-party registry subject to the recognition agreement between the national registry and third-party registry(ies).

**Figure 5.2** Decision Tree for Developing a Legal Framework for Section V: Carbon Rights, Credit Issuance, and Registry Procedures




*Source:* Original for this publication.

## 5.5. Key Takeaways

- Rules established to recognize ownership of ERR rights must be informed by national context and be consistent with local legal doctrine and tradition.
- Carbon credits are a relatively new legal instrument characterized and regulated differently in different jurisdictions. A country can provide clarity to market participants by expressly defining in its carbon market framework the regulatory treatment to be applied to carbon credits, grounded in domestic law.

- A country must decide who issues carbon credits: a domestic government entity, registries associated with approved international or independent carbon crediting standards bodies, or both. This choice has implementation implications. Domestic issuance provides maximum control and enables locally tailored methodologies; however, it requires significant resources to build and maintain technical systems, and the resulting outcomes may not be as attractive to the international buyers who seek established carbon crediting standards. Recognizing international or independent carbon crediting standards reduces administrative burden and implementation time by leveraging established infrastructure, though it limits methodologies to those already approved by the carbon crediting standards and requires coordination for tracking transfers.
- Registries support the issuance, tracking, and transfer of carbon credits, in turn helping a country track ITMOs and monitor its NDC achievement. Decisions on registries should follow from a country's chosen approach to approved carbon crediting standards. A country's decision to domestically develop a tracking or transactional registry will depend on its carbon market capabilities and the resources it can dedicate to registry functionality; nevertheless, all countries at least must have, or have access to, a tracking registry to effectively participate in Article 6.2 cooperative approaches.





# 6 CARBON CREDIT TRANSACTIONS

This chapter examines key policy decisions around the treatment of nonauthorized carbon credits, ITMO authorization, mitigation activities under the PACM, revenue allocation, and levy structures. The options balance the need for regulatory oversight with the practical requirements of market participants who seek predictable, efficient processes that support investment decisions. **Appendix B** provides an overview of relevant carbon market actors and detailed visual representations of transaction flows across different market contexts, illustrating how carbon credits move between actors under various market scenarios.

**CARBON MARKET LEGAL FRAMEWORK OUTLINE**

**Section I. Purpose and Definitions**
A. Purpose
B. Definitions

**Section II. Legal Instruments and Institutions**
A. Responsible authorities and governance functions

**Section III. Mitigation Activity Design and Development**
A. Approved sectors and activities for generating ITMOS
B. Approved carbon crediting standards and methodologies
C. Aligning mitigation activities at multiple levels
D. Social and environmental integrity requirements
E. Integrity requirements for the use of carbon credits
F. Mitigation activity validation

**Section IV. Monitoring, Reporting, and Verification**
A. Mitigation activity MRV

**Section V. Carbon Rights, Credit Issuance, and Registry Procedures**
A. Legal nature and available rights in emission reductions or removals
B. Legal nature and available rights in carbon credits
C. Carbon credit issuance
D. Registry procedures

**Section VI. Carbon Credit Transactions**
A. Procedures for nonauthorized carbon credits
B. Procedures for ITMO authorization
C. Procedures for A6.4ERS
D. Levies and fees
E. Allocation of revenue

**Section VII. Enforcement and Dispute Resolution**
A. Enforcement authority and powers
B. Dispute resolution

**Section VIII. Appendixes**

Clear transaction procedures reduce uncertainty for project proponents and buyers, facilitate transparent reporting under UNFCCC obligations, and enable a country to enforce carbon crediting standards consistently. Well-designed procedures can help build market confidence and promote the alignment of carbon market activities with national climate goals and international commitments.

## 6.1. Procedures for Nonauthorized Carbon Credits

### Overview

While a country is not obligated to establish oversight mechanisms for nonauthorized mitigation activities, it may wish to track them within its jurisdiction to facilitate UNFCCC reporting obligations.

Implementing a process to track and/or review mitigation activities generating nonauthorized carbon credits can promote the following:

- **Quality assurance:** Ensures consistent application of carbon crediting standards and environmental integrity requirements across all mitigation activities, maintaining high-quality carbon credits regardless of intended market use
- **National alignment:** Verifies that all mitigation activities contribute meaningfully to national climate goals and sustainable development priorities, preventing conflicts with NDC implementation
- **Application of safeguards:** Confirms that appropriate stakeholder engagement and benefit-sharing arrangements are established before mitigation activity implementation begins
- **Accurate reporting:** Enables transparent and precise reporting of domestic mitigation results for NDC achievement and ITMOs under UNFCCC Article 6 and Article 13 requirements
- **Regulatory enforcement:** Provides a mechanism to enforce the national framework and address potential misconduct or noncompliance.

However, any processes for mitigation activities generating nonauthorized carbon credits must balance desired transparency against administrative burden, as unclear or slow processes for the VCM can hinder market development. **Box 6.1** provides an overview of Ghana's procedures.

**Box 6.1 Country Spotlight: Procedures for Generating Nonauthorized Carbon Credits**



**GHANA**

**Title:** Framework on International Carbon Markets and Non-Market Approaches (2022) (Framework)[a]

**Legal instrument:** The Framework is grounded in the Environmental Protection Act (EPA) of 1994 and the amended EPA of 2025 (further elaborated in **Box 2.4**).

**Relevant legal framework option:** Option 1: Require project proponents to provide notification to the government for mitigation activities generating nonauthorized carbon credits (see **Table 6.1**).

**Description:** Ghana's Framework establishes two distinct processes: one for mitigation activities not seeking authorization and another for activities seeking authorization for international transfer under Article 6.2. Schedule 5 describes the required processes for activities not seeking authorization or corresponding adjustments. These activities must apply for formal recognition from the Carbon Market Office (CMO) for the country to recognize them and associated carbon credits. The CMO can then grant a Letter of Endorsement (LoE) and list the project on the Ghana Carbon Registry. The LoE indicates that the CMO recognizes the mitigation activity and its connection to the Nationally Determined Contribution (NDC) without committing Ghana to apply a corresponding adjustment. The Framework includes these processes to support Ghana's greenhouse gas (GHG) emissions accounting. While these activities are not required to obtain a Letter of Authorization (LoA), they can begin the LoA processes at any time. The Framework provides templates of the Request for Formal Recognition and the LoE.

a. Ghana Carbon Market Office 2022.

### Legal Framework Options

**Table 6.1** presents options for treating mitigation activities generating nonauthorized carbon credits under the carbon market framework.

If a country chooses to pursue an approval process for mitigation activities generating nonauthorized carbon credits, approval or rejection decisions should be easily understood by project proponents. This requires clear, objective criteria for what the country expects from mitigation activities at each development and implementation stage. Transparent decision-making criteria reduce uncertainty, minimize appeals, and build confidence in the regulatory system while ensuring consistent application of national carbon crediting standards.

**Table 6.1** Legal Framework Options for Defining Procedures for Mitigation Activities Generating Nonauthorized Carbon Credits

| OPTION 1: Require project proponents to provide notification to the government for mitigation activities generating nonauthorized carbon credits. | |
|---|---|
| **Advantages** | • Provides country visibility into carbon market activities within its jurisdiction, supporting national tracking and reporting efforts<br>• Reduces administrative burden compared to formal review and endorsement<br>• Enables country to identify potential issues or conflicts early while allowing mitigation activities to proceed without approval delays |
| **Disadvantages** | • Country receives information but, without an endorsement process, it may be harder to manage problematic mitigation activities, potentially allowing projects that conflict with national priorities<br>• Notification without review may not ensure adequate implementation of supply-side integrity requirements<br>• Requires government capacity to receive, organize, and track submitted information even without conducting formal reviews |
| **Example legal text** | **VII. Carbon Credit Transactions**<br>**A. Procedures for nonauthorized carbon credits**<br>1. A project proponent of a mitigation activity generating nonauthorized carbon credits must submit information as required by the Administrative Authority prior to commencing implementation.<br>2. A project proponent of an existing mitigation activity generating nonauthorized carbon credits shall have [24] months to submit the required information.<br>3. The following information shall be submitted to the Administrative Authority in the form provided in Schedule [X]: [insert information].[114]<br>**{Indicative types of information (not exhaustive)}**<br>a. Information on the project proponent (for example, name, entity, jurisdiction, and account representative)<br>b. Sector and activity type<br>c. [Approved][115] carbon crediting standard and methodology being utilized<br>d. Issuing body and registry<br>e. Project design document and other materials submitted to the standard body<br>f. Confirmation of voluntary use of carbon credits and not seeking authorization.<br>4. The Administrative Authority shall have the authority to develop [regulations] [guidance] further prescribing the requirements for this notification process for mitigation activities generating nonauthorized carbon credits, including criteria to evaluate applications. |

114 To support consistency and transparency, a country can provide standardized application templates with specific fields and required documentation. These templates may be incorporated into the legal framework as schedules or published separately as operational guidance, with the latter approach allowing easier updates based on implementation experience.

115 "Approved" should be retained in the legal text when approved carbon crediting standards apply to all mitigation activities. It should be omitted when the standards only apply to ITMOs. See **Chapter 3.2**.

| OPTION 2: Require government review and endorsement for mitigation activities generating nonauthorized carbon credits. | |
|---|---|
| **Advantages** | • Government review and endorsement ensure that all mitigation activities meet national carbon crediting standards and supply-side integrity requirements, reducing the risk of low-quality or harmful projects<br>• Centralized review and endorsement create a complete national record of all carbon market activities, supporting policy planning and international reporting |
| **Disadvantages** | • Reviewing all mitigation activities requires additional government capacity and resources<br>• If insufficiently staffed, centralized review and endorsement process may become slow or inconsistent, potentially undermining market confidence and mitigation activity viability |
| **Example legal text** | **VII. Carbon Credit Transactions**<br>**A. Procedures for nonauthorized carbon credits**<br>1. A project proponent of a mitigation activity generating nonauthorized carbon credits must submit information as required by the Administrative Authority and be endorsed by the Administrative Authority prior to commencing implementation.<br>2. A project proponent of an existing mitigation activity generating nonauthorized carbon credits shall have [24] months to submit the required information for government endorsement.[116]<br>3. The following information shall be submitted to the Administrative Authority in the form provided in Schedule [X]: [insert information].<br>**{Indicative types of information (not exhaustive)}**<br>a. Information on the project proponent (for example, name, entity, jurisdiction, and account representative)<br>b. Sector and activity type<br>c. [Approved] carbon crediting standard and methodology being utilized<br>d. Issuing body and registry<br>e. Alignment with Nationally Determined Contribution (NDC)<br>f. Demonstration of sustainable development, safeguards, and free, prior, and informed consent (FPIC)<br>g. Benefit-sharing arrangement (for nature-based solutions – NBS) or revenue-allocation arrangement (for all other mitigation activities)<br>h. Demonstration of carbon rights ownership<br>i. Confirmation of voluntary use of carbon credits and not seeking authorization<br>j. Identification of accredited third-party validation and verification body (VVB)<br>k. Monitoring, reporting, and verification (MRV) plan. |

116 A country that has existing mitigation activities should consider whether and how to incorporate them into the endorsement process. It may consider whether to allow existing carbon projects to continue through their crediting periods or if other adjustments are needed.

| | |
|---|---|
| | 4. The Administrative Authority shall review the request for endorsement and approve the request within [30] days unless the submission is incomplete or there is evidence of fraud, violation of applicable law, or manifest error.<br>5. Upon approval, the Administrative Authority shall provide a Letter of Endorsement (LoE) in the form provided in Schedule [X] to the project proponent. Upon receipt of the LoE, the project proponent may commence its mitigation activity. Existing mitigation activities may continue throughout the process.<br>6. If the Administrative Authority determines the request is incomplete due to insufficient information, the project proponent has the right to resubmit.<br>7. If the Administrative Authority rejects the request, it shall provide the basis for rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].[117]<br>8. The Administrative Authority shall have the authority to develop [regulations] [guidance] further prescribing the requirements for this endorsement process for mitigation activities generating nonauthorized carbon credits, including criteria to evaluate applications. |
| **OPTION 3: Provide for lack of formal government oversight of mitigation activities generating nonauthorized carbon credits.** | |
| **Advantages** | • Reduces bureaucracy and potential process delays, allowing mitigation activities to move quickly from planning to implementation<br>• Focuses government resources on the review of authorization requests under Articles 6.2 and 6.4 only<br>• May encourage voluntary carbon market (VCM) activities if the market sees less government bureaucracy as advantageous |
| **Disadvantages** | • Reduces ability to ensure mitigation activities generating nonauthorized carbon credits meet national carbon crediting standards<br>• Country may lack comprehensive data on all carbon market activities within its jurisdiction, hampering policy planning and international reporting<br>• Country must proactively monitor multiple registries to track national mitigation activities, creating an administrative burden, unless utilizing a data aggregation resource such as the Climate Action Data (CAD) Trust<br>• No country review may result in inadequate implementation of environmental and social protections, benefit-sharing arrangements, FPIC, and demand-side integrity requirements |
| **Example legal text** | **Section VII. Carbon Credit Transactions**<br>**A. Procedures for nonauthorized carbon credits**<br>1. A project proponent of a mitigation activity generating nonauthorized carbon credits does not require formal approval or acknowledgment by the Administrative Authority prior to commencing a mitigation activity. |

*Source:* Original for this publication.

117 The appeals process should be aligned with the framework section on disputes and grievance redress. See **Chapter 7.2** for additional information.

## 6.2. Procedures for ITMO Authorization

### Overview

Authorization is the formal process by which a country permits carbon credits to be transferred internationally and used by another country or entity toward their national climate commitments. Under Article 6, there are three components of authorization: authorization of the cooperative approach, authorization of ITMOs, and authorization of entities (UNFCCC 2024b). When a country authorizes a carbon credit, it becomes an ITMO, and the country agrees to apply a corresponding adjustment - meaning it cannot count that ERR toward its own NDC. This ensures ITMOs are only used once toward a mitigation obligation (World Bank 2020b).

Authorization must follow specific procedures established under the UNFCCC guidance, including requirements for the content and format of the authorization decision. The carbon market framework should clarify information requirements, decision-making criteria, processing timelines, and procedures for challenging decisions. Without structured authorization processes, a country risks UNFCCC noncompliance, transfer validity conflicts, and diminished trust in international cooperative mechanisms. Structured processes enable a country to understand requested transfer volumes, intended buyers, proposed uses, and impacts.[118] The "Country Guidance for Navigating Carbon Markets" resource developed by the World Bank and partners, discusses country considerations for deciding when and at what volume to authorize ITMOs (World Bank et al. 2025). See **Box 6.2** for an overview of these consideration points and **Box 6.3** for Uganda's procedures for ITMO authorization.

#### Box 6.2 Country Decision-Making Considerations for ITMO Authorization

Decisions on whether and when to authorize carbon credits for international transfer depend on country-specific circumstances and policy objectives, including Nationally Determined Contribution (NDC) implementation requirements, mitigation costs, and opportunity costs (World Bank 2023). Granting and withholding authorization each present their own advantages:[a]

118 As of June 2025, the A6IP found that of 90 countries that were assessed as part of an annual status report, 72 have Article 6 authorization and/or tracking arrangements in place. See Implementation Status of Article 6.2 Guidance: https://a6partnership.org/a6-implementation-status/current-status-of-article-6-2-implementation.

| Advantages of granting authorization: | Advantages of not granting authorization: |
|---|---|
| • Increased market demand and higher credit prices, enabling more expensive or technically challenging mitigation activities<br>• Enhanced international reputation for supporting both domestic and global climate action | • Reduced risk to NDC achievement and lower opportunity costs<br>• Faster investment from voluntary carbon market (VCM) sales compared to Internationally Transferred Mitigation Outcome (ITMO) transactions[b] |

A country may hesitate to authorize credits early in their NDC implementation cycle due to uncertainty about achievement pathways and costs. However, early authorization can provide competitive advantages, allowing a country with ambitious NDCs to establish itself as a preferred ITMO supplier, strengthening its market position. Conversely, significant delays in granting authorization can make carbon credit–generating projects unviable.

A country should evaluate current and projected NDC implementation progress to minimize the overselling risk, which could jeopardize NDC achievement. Risk reduction strategies include the following:

- Strategically defining approved sectors and activities (see **Chapter 3.1**)
- Establishing an NDC buffer reserve by setting aside a portion of authorized carbon credits to support NDC achievement (see **Chapter 6.4**).

A country with an ambitious NDC, clear implementation strategies, and reliable cost data is well positioned to make informed authorization decisions (World Bank et al. 2025).

a. See Table 2.1 in World Bank et al. 2025.

b. While nonauthorized carbon credits may transact more quickly through the VCM by avoiding the authorization process, authorized carbon credits with corresponding adjustments will likely command price premiums.

## Box 6.3 Country Spotlight: Procedures for ITMO Authorization

### UGANDA



**Title:** The National Climate Change (Climate Change Mechanisms) Regulations (Regulations)[a]

**Legal instrument:** The Regulations supplement to the National Climate Change Act (Act), which provides the regulatory framework to monitor and adapt to climate change and establishes the institutional framework to manage climate change activities.[b] The regulations were issued by the Ministry of Water and Environment under its carbon market responsibilities outlined in sections 8, 9, 12, and 29 of the Act. The Regulations provide a framework for managing carbon markets in Uganda, including both Article 6 and the voluntary carbon market (VCM).

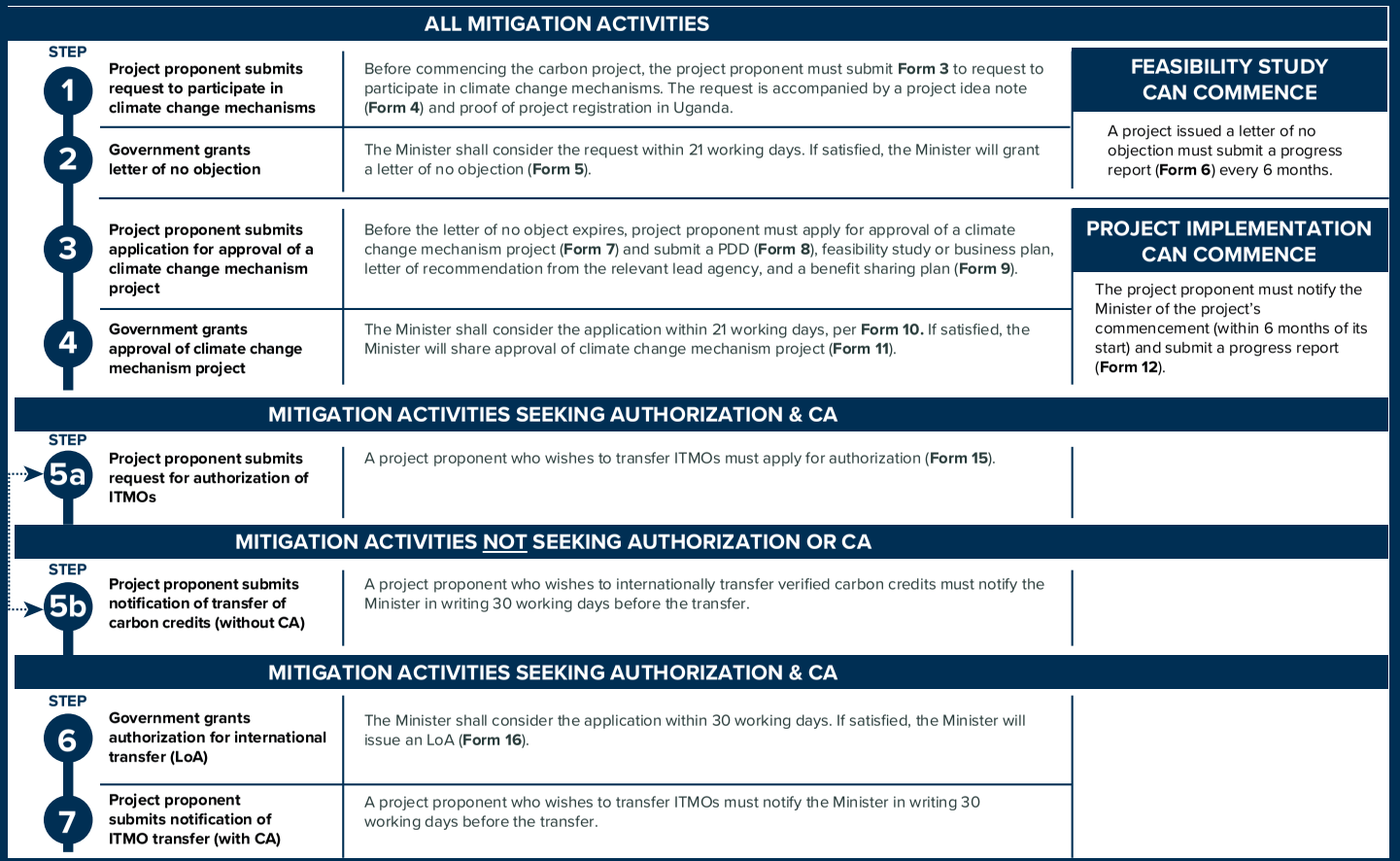
**Relevant legal framework option:** Option 1+: Implement a multistep process for Internationally Transferred Mitigation Outcome (ITMO) authorization (see **Table 6.2**).

**Description:** Uganda's Regulations establish a three-stage process for mitigation activity approval and authorization, with minister-level approvals at each stage, ensuring robust oversight from conception through carbon credit transfer. Throughout this process, project proponents must indicate their intended carbon credit use and whether they will request a corresponding adjustment for international transfers.

- **Stage 1:** Before conducting feasibility studies, project proponents must submit a "request to participate in a climate mechanism" to the Minister of Water and Environment. Upon satisfactory review, the minister issues a Letter of No Objection granting permission to proceed with feasibility studies. This initial approval promotes regulatory certainty for early-stage development while allowing the country to screen proposed activities for alignment with national priorities.
- **Stage 2:** Within the timeframe specified in the Letter of No Objection, project proponents may submit a comprehensive application for full mitigation activity approval, including detailed project design documents and benefit-sharing plans developed during the feasibility phase. If approved, the project receives formal approval and may commence implementation.
- **Stage 3:** After verification and carbon credit issuance, project proponents seeking to transfer credits internationally must submit a separate authorization request. Upon satisfactory review, the minister issues a Letter of Authorization (LoA) permitting the international transfer of the verified carbon credits with the required corresponding adjustment. This final stage is only applicable for mitigation activities seeking authorization.

**Figure B6.3.1** provides an overview of the three-step approval and authorization processes required under Uganda's Regulations.

**Figure B6.3.1** Carbon Project Approval and Authorization Procedures under the Uganda Climate Change Regulation




*Source:* Original for this publication.

*Note:* CA = corresponding adjustment; ITMO = Internationally Transferred Mitigation Outcome; LoA = Letter of Authorization; PDD = project design document.

a. See the National Climate Change (Climate Change Mechanisms) Regulations. https://mwe.go.ug/publications/laws_policies/the-national-climate-change-climate-change-mechanisms-regulations-2025.

b. See the National Climate Change Act, 2021. https://faolex.fao.org/docs/pdf/uga208305.pdf.

### Legal Framework Options

**Table 6.2** presents two options for ITMO authorization procedures. **Option 1** implements a two-step process in which the country issues a Letter of Support (LoS)[119] prior to mitigation activity implementation and an LoA is granted later in the implementation process. **Option 2** implements a one-step process in which the country issues an LoA prior to mitigation activity implementation based on anticipated ERR quantities. Under both options, existing mitigation activities may continue authorization throughout the process.

A country may choose to develop customized LoAs or adopt existing voluntary templates, such as those developed by the UNFCCC Secretariat,[120] or the template developed by the UNFCCC Secretariat, with a voluntary supplement developed by the World Bank Group to facilitate insurability and enforceability (World Bank 2025d). These template LoAs cover all three types of authorization. To ensure project proponents fully understand authorization terms, a country should consider including a template LoA as a schedule or appendix to their framework.

Any conditions for changes to or revocation of authorization must be expressly stated in the LoA. Changes to authorization (for example, changes to the authorized entities or intended use of the ITMOs) can provide valuable flexibility to all actors involved in the transaction. However, allowing for revocation of authorization can create market uncertainty for buyers, disincentivize investment in mitigation activities within the country, and significantly increase the cost of carbon market insurance products. If revocation is allowed, the specific conditions for revocation must be explicitly and clearly communicated in the LoA.[121] It is important that those conditions appropriately balance interest in the integrity of the transaction and the rights of the country with the need of project proponents for assurance that their authorization will remain in place under normal circumstances.

119 The LoS proposed as part of the two-step authorization process is the formal document through which a country grants initial approval for a mitigation activity to proceed with implementation prior to final authorization for international transfer under Article 6.2.

120 Voluntary standardized template for the authorization of the use of the ITMOs from a cooperative approach (Word) (v.01.0) available at: https://unfccc.int/documents/646071.

121 The content of a country authorization requires: "Where changes to the authorization may occur, [the content of the authorization must include] information on the circumstances in which such changes may occur and a description of the process for managing them in a way that avoids double counting" (UNFCCC 2024).

**Table 6.2** Legal Framework Options for Defining Procedures for ITMO Authorization

| | OPTION 1: Implement a two-step process for ITMO authorization |
|---|---|
| **Advantages** | • Enables country to track pipeline of activities seeking authorization, supporting planning for Nationally Determined Contribution (NDC) achievement and corresponding adjustment management<br>• Provides flexibility for project proponents to secure early approval while deferring final authorization decisions until actual emission reduction or removal (ERR) generation is known<br>• Reduces risk of over authorization by allowing country to evaluate actual verified ERRs and NDC implementation progress |
| **Disadvantages** | • Creates an additional administrative step requiring government resources to process two separate applications for each activity<br>• Creates uncertainty for project proponents and buyers who must wait for a second approval to secure authorization<br>• Increases transaction costs and timelines compared to single-step authorization, potentially affecting mitigation activity financing and buyer commitments |
| **Example legal text** | **Section VII. Carbon Credit Transactions**<br>. . .<br>**B. Procedures for Internationally Transferred Mitigation Outcome (ITMO) authorization**<br>1. A project proponent seeking authorization under Article 6 shall comply with the following two-step process of authorization:<br>*First Step of Authorization Process*<br>2. A project proponent shall submit the following information to the Administrative Authority in the form provided in Schedule [X]: [insert information].[122]<br>**{Indicative types of information (not exhaustive)}**<br>a. Information on the project proponent (for example, name, entity, jurisdiction, and account representative)<br>b. Approved sector and activity<br>c. Approved carbon crediting standard and methodology being utilized<br>d. Description of additionality<br>e. Issuing body and registry<br>f. Alignment with NDC<br>g. Demonstration of sustainable development, safeguards, and free, prior, and informed consent (FPIC) |

122 To support market transparency and consistency across all approval requests, the country could provide an application template as a schedule in the framework or as a resource through the authority's website.

h. Benefit-sharing arrangement (for nature-based solutions NBS) or revenue-allocation arrangement (for all other mitigation activities)

i. Demonstration of ERR ownership

j. Anticipated maximum quantity of carbon credits for which the project proponent intends to seek authorization at the Letter or Authorization (LoA) stage

k. Name of the acquiring Party or entity, if known, and other identifying information if known

l. Intended use of ITMOs

m. Evidence of payment of applicable fees.

3. The Administrative Authority shall review the request for support and provide a decision to the project proponent within [30] days.

4. If the Administrative Authority approves the request, it shall provide a Letter of Support (LoS) in the form provided in Schedule [X] to the project proponent with any conditions of approval. Upon receipt of the LoS, the project proponent may commence its mitigation activity in order to generate ITMOs. Existing mitigation activities seeking an LoS may continue throughout the process.

5. If the Administrative Authority determines the request is incomplete due to insufficient information, the project proponent has the right to resubmit.

6. If the Administrative Authority rejects the request, it shall provide the basis for rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].[123]

*Second Step of Authorization Process*

7. The project proponent shall achieve commercial operation within [24] months of receiving the LoS and submit evidence of the same to the Administrative Authority as part of its request for authorization.

8. The Administrative Authority shall review the request for authorization and ensure the mitigation activity remains compliant with all the applicable evaluation criteria, including achievement of commercial operation within such period, and provide a decision to the project proponent within [30] days.

9. If the Administrative Authority determines the mitigation activity complies with evaluation criteria, it shall provide an LoA in the form provided in Schedule [X] to the project proponent with the number of ITMOs authorized and any conditions of approval.[124]

123 The appeals process should be aligned with the framework section on disputes and grievance redress.

124 A single LoA may cover all three types of authorization to reduce the administrative burden of reviewing separate applications, issuing individual letters, and communicating authorizations to the UNFCCC at different times. Alternatively, a country could structure the two-step authorization process to authorize the cooperative approach and participating entities at the first stage, with authorization of the ITMOs occurring at the second stage.

| | |
|---|---|
| | 10. The project proponent shall notify the Administrative Authority within [30] days of the issuance of carbon credits subject to the LoA.<br>11. Authorization and corresponding adjustments shall be irrevocable unless otherwise specified in the LoA setting out the specific circumstances under which revocation is allowed.[125]<br>12. If the Administrative Authority determines the request is incomplete due to insufficient information, the project proponent has the right to resubmit.<br>13. If the Administrative Authority rejects the request, it shall provide the basis for rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].<br>14. "First transfer" shall be defined as follows: for a carbon credit authorized for use toward the achievement of an NDC, the first international transfer of the mitigation outcome (MO); or for a carbon credit authorized for use for other international mitigation purposes (OIMP), the [issuance] of the MO.[126]<br>15. The Administrative Authority shall apply a corresponding adjustment for all ITMOs upon first transfer.<br>16. The Administrative Authority shall have the authority to develop [regulations] [guidance] further prescribing criteria by which to evaluate authorization requests and other requirements for the authorization process. |
| **OPTION 2: Implement a one-step process for ITMO authorization.** | |
| **Advantages** | • Streamlines authorization by requiring only one application and decision, reducing administrative burden on country and transaction costs for project proponents<br>• Provides structured process with defined timelines, appeals mechanisms, and fee structures that create predictable market conditions |
| **Disadvantages** | • Country must make authorization decisions based on anticipated rather than verified ERR quantities, creating uncertainty about the actual levels of ITMOs authorized<br>• Authorizing the maximum quantity of ITMOs before actual volumes are known may cause the country to limit approval of additional authorization requests to avoid potential overselling risks<br>• Requires mechanisms to address material changes between authorization and actual carbon credit generation, adding administrative complexity |

125 It is worth noting that language permitting government-defined revocation conditions creates a country risk premium. Institutional investors and project finance lenders will price this risk heavily or walk away entirely.

126 A country may wish to align its definition of "first transfer" with its authorization timing, as MOs can only be first transferred if they have been authorized by the first transferring Party. If ITMOs are issued before authorization is granted, a country could define first transfer as occurring at authorization. If authorization is granted before issuance, a country could define it as occurring at issuance or use or cancellation. However, some market actors have expressed concern that waiting until use or cancellation could require extended tracking periods and create time lags in reporting (UNFCCC 2024).

| | |
|---|---|
| **Example legal text** | **Section VII. Carbon Credit Transactions**<br>. . .<br>**B. Procedures for ITMO authorization**<br>1. A project proponent shall submit the following information to the Administrative Authority in the form provided in Schedule [X]: [insert information].<br>**{Indicative types of information (not exhaustive)}**<br>a. Information on the project proponent (for example, name, entity, jurisdiction, and account representative)<br>b. Approved sector and activity<br>c. Approved carbon crediting standard and methodology being utilized<br>d. Description of additionality<br>e. Issuing body and registry<br>f. Alignment with NDC<br>g. Demonstration of sustainable development, safeguards, and FPIC<br>h. Benefit-sharing arrangement (for NBS) or revenue-allocation arrangement (for all other mitigation activities)<br>i. Demonstration of ERR ownership<br>j. Maximum quantity of carbon credits for which the project proponent is seeking authorization based on the project design document<br>k. Name of the acquiring Party or entity, if known, and other identifying information if known<br>l. Intended use of ITMOs<br>m. Evidence of payment of applicable fees.<br>2. The Administrative Authority shall review the request for authorization and provide a decision to the project proponent within [30] days.<br>3. If the Administrative Authority approves the request, it shall provide an LoA in the form provided in Schedule [X] to the project proponent with the maximum number of ITMOs authorized and any conditions of approval.[127]<br>4. If the Administrative Authority determines the request is incomplete due to insufficient information, the project proponent has the right to resubmit.<br>5. If the Administrative Authority rejects the request, it shall provide the basis for rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].<br>6. Authorization and corresponding adjustments shall be irrevocable unless otherwise specified in the LoA setting out the specific circumstances under which revocation is allowed.[125] |

127 Under the one-step process for authorization, the LoAs would be issued earlier in the project life cycle. Accordingly, the terms of the LoA should include a provision that allows the country to void or revoke the authorization if the project proponent does not achieve commercial operation within a specified period of time - for example, 24 months from receipt of the LoA, unless extended by the Administrative Authority. This ensures that the country's obligation to correspondingly adjust carbon credits pertains to viable projects and is not committed to activities that are not proceeding.

7. "First transfer" shall be defined as follows: for a carbon credit authorized for use toward the achievement of an NDC, the first international transfer of the MO; or for a carbon credit authorized for use for OIMP, the [issuance] of the MO.[126]
8. The project proponent shall notify the Administrative Authority within [30] days of the issuance of carbon credits subject to the LoA.
9. The Administrative Authority shall apply a corresponding adjustment for all ITMOs upon first transfer.
10. The Administrative Authority shall have the authority to develop [regulations] [guidance] further prescribing criteria by which to evaluate authorization requests and other requirements for the authorization process.

*Source:* Original for this publication.

## 6.3. Procedures for A6.4ERs

### Overview

Under the PACM, a country must approve mitigation activity registration requests, authorize participating entities, approve or authorize the use of A6.4ERs, and approve any material changes during mitigation activity implementation (UNFCCC 2025e). Clear procedures in the carbon market framework can help a country manage these obligations while providing market participants with the certainty needed for investment decisions (see **Box 6.4**).

Following verification and issuance, a country has the following three options for treating A6.4ERs:

- **Mitigation Contribution Units (MCUs):** The country approves issuance as MCUs but does not authorize the A6.4ERs for international transfer. No corresponding adjustment is applied. These MCUs will be counted toward the host country's NDC.
- **Authorized A6.4ERs:** The country authorizes all or part of the A6.4ERs for international transfer and use toward an acquiring country's NDC or OIMP. A corresponding adjustment is applied to the authorized quantity, and these carbon credits are considered ITMOs under Article 6.2.
- **Conditional approval as MCUs for potential future authorization:** The country approves the issuance of MCUs while explicitly noting that authorization may be granted at a later stage.

The PACM Supervisory Body (SB) has developed standardized templates to assist countries' participation in the mechanism, including forms for communicating fulfillment of its participation requirements and authorization of the use of A6.4ERs (UNFCCC 2025d; UNFCCC 2025b; UNFCCC 2025c). These templates streamline country communications and ensure alignment with international requirements.

### Box 6.4 Country Spotlight: Procedures for A6.4ERs

**MALAWI**



**Title:** Carbon Market Framework (Framework)[a]

**Legal instrument:** The Framework was developed by the Environmental Affairs Department of the Ministry of Natural Resources and Climate Change to align with Malawi's National Climate Change Management Policy and Nationally Determined Contribution (NDC). The Framework is grounded in provisions in the Constitution requiring the country to responsibly manage the environment and treat ratified international agreements - including the Paris Agreement - as legally binding. It outlines comprehensive guidelines for Malawi's carbon market engagement, including carbon credit generation, environmental integrity requirements, and authorization processes.

**Relevant legal framework option:** Define procedures for mitigation activities under the Paris Agreement Crediting Mechanism (PACM) (see **Table 6.3**).

**Relevance:** The Framework details the steps project proponents must follow to develop mitigation activities under Article 6.4 in Malawi, including obtaining ministry authorization. It reiterates that the country is responsible for authorizing Article 6.4 Emission Reduction (A6.4ERs) in accordance with the Article 6.4 rules, modalities, and procedures (RMPs). The Framework further specifies that the Ministry will evaluate the mitigation activities only upon positive validation by a validation and verification body (VVB), at which point it will provide the supervisory body (SB) with approval and authorization decisions. Approval and authorization are subject to all additional Article 6.4 requirements set by the Framework, such as approved activity types.

a. Government of Malawi 2025.

## Legal Framework Options

While MCUs and authorized A6.4ERs share similarities with nonauthorized credits and ITMOs, respectively, PACM activities require distinct procedural provisions. The specialized requirements under the Article 6.4 rules, modalities, and procedures (RMPs) - including unique templates, registration processes, and SB oversight - benefit from separate treatment under the carbon market legal framework.

**Table 6.3** Legal Framework Option for Defining Procedures for A6.4ERs

| OPTION: Define procedures for mitigation activities under PACM | |
|---|---|
| **Advantages** | • Establishes clear procedural requirements specifically tailored to Paris Agreement Crediting Mechanism (PACM) obligations, ensuring compliance with international rules<br>• Provides transparency for project proponents regarding registration approval, entity authorization, and Article 6.4 Emission Reduction (A6.4ER) authorization requirements |
| **Disadvantages** | • Requires administrative capacity to manage multiple approval stages throughout the PACM activity cycle<br>• May create market uncertainty if conditional approval pathways are not clearly communicated to prospective buyers |
| **Example legal text** | **Section VII. Carbon Credit Transactions**<br>. . .<br>**C. Procedures for A6.4ERs**<br>*Participation approval and registration for all mitigation activities under the PACM*<br>1. A project proponent seeking to register a mitigation activity under the PACM shall submit a PACM participation and registration request[128] to the designated national authority (DNA) in the form provided in Schedule [X]: [insert information].<br>2. The DNA shall review the request and provide a decision to the project proponent within [30] days.<br>3. If the DNA approves the request, it shall communicate the mitigation activity and PACM registry holding account approval to the Supervisory Body (SB) and the project proponent. Upon notification of the approval, the project proponent may commence its mitigation activity.<br>4. If the DNA determines the request is incomplete due to insufficient information, the project proponent has the right to resubmit.<br>5. If the DNA rejects the request, it shall provide the basis for rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].<br>*Approval Pathway for Mitigation Contribution Units (MCUs)*<br>6. Project proponents shall submit a request for approval of the use of A6.4ERs as mitigation contributions.<br>7. The following information shall be submitted to the DNA in the form provided in Schedule [X]:[129] [insert information]. |

128 Under the PACM, a country must approve mitigation activities and authorize the activity participants prior to registration (UNFCCC 2025e).

129 The DNA and Administrative Authority should ideally be the same entity to streamline decision-making. If these are separate entities, both will need to be involved in the approval and authorization of A6.4ERs to ensure consistency across authorization decisions and avoid conflicting requirements or outcomes.

**{Indicative types of information (not exhaustive)}**[130]

a. Mitigation activity title
b. Applied methodology(ies) and their version(s)
c. Sector(s), sectoral scope(s), and activity type(s) covered
d. Confirmation that the project proponent not seeking authorization
e. Whether it may seek authorization at a later stage.

8. After submission of the request, the DNA, in coordination with the Administrative Authority, shall review the request and provide a decision to the project proponent within [30] days.
9. If the DNA and Administrative Authority approve the request, it shall prepare the applicable PACM form[131] to reflect its decision, with copies submitted to the SB and shared with the project proponent.
10. If the DNA and Administrative Authority determine the request is incomplete due to insufficient information, the project proponent has the right to resubmit.
11. If the DNA and Administrative Authority reject the request, they shall provide the basis for its rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].

*Approval pathway for Authorized A6.4ERs*

12. Project proponents shall submit a request for approval of the use of A6.4ERs toward the achievement of NDCs and/or for other international mitigation purposes (OIMP).
13. The following information shall be submitted to the DNA in the form provided in Schedule [X]:[129] [insert information].

**{Indicative types of information (not exhaustive)}**[130]

a. Mitigation activity title
b. Applied methodology(ies) and their version(s)
c. Sector(s), sectoral scope(s), and activity type(s) covered
d. Activity participant(s)
e. Maximum quantity of carbon credits for which the project proponent is seeking authorization based on the project design document
f. Whether seeking authorization of the A6.4ERs and for what purpose
g. If seeking authorization, name of the other participating Party(ies) in the mitigation activity.

14. After submission of the request, the DNA, in coordination with the Administrative Authority, shall review the request and provide a decision to the project proponent within [30] days.

130 This list is informed by the details required in A6.4-FORM-GOV-002 (UNFCCC 2025b).

131 The applicable PACM forms currently include: A6.4-FORM-GOV-002 or A6.4-FORM-GOV-003; however, the PACM forms may be updated by the Supervisory Body from time to time.

15. If the DNA and Administrative Authority approve the request, the Administrative Authority shall provide a Letter of Approval (LoA) in the form provided in Schedule [X] to the project proponent with the number of Internationally Transferred Mitigation Outcomes (ITMOs) authorized and any conditions of approval.
16. If the DNA and Administrative Authority determine the request is incomplete due to insufficient information, the project proponent has the right to resubmit.
17. If the DNA and Administrative Authority reject the request, they shall provide the basis for its rejection in writing, and the project proponent shall have [30] days to appeal the decision through [insert process].
18. Authorization and corresponding adjustments shall be irrevocable unless otherwise specified in the LoA setting out the specific circumstances under which revocation is allowed.[125]
19. The DNA shall prepare the applicable PACM Form[131] to reflect its decision with copies submitted to the SB and shared with the project proponent.
20. "First transfer" shall be defined as follows: for a carbon credit authorized for use toward the achievement of an NDC, the first international transfer of the mitigation outcome (MO); or for a carbon credit authorized for use for OIMP, the [issuance] of the MO.
21. The project proponent shall notify the Administrative Authority within [30] days of the issuance of carbon credits subject to the LoA.
22. The Administrative Authority shall apply a corresponding adjustment for all ITMOs upon first transfer.
23. The Administrative Authority shall have the authority to develop [regulations] [guidance] further prescribing criteria by which to evaluate authorization requests and other requirements for the authorization process.

*Source:* Original for this publication.

## 6.4. Levies and Fees

### Overview

The carbon market legal framework should provide clarity on any levy and fee structures that the country may wish to establish to generate revenue for government operations, support domestic climate programs, and ensure appropriate cost recovery for regulatory oversight. A country has flexibility in designing its approach to the carbon market, with structures varying based on national priorities, administrative capacity, and market development objectives.[132]

132 If a country takes the approach of requiring no formal approval or acknowledgment by the government of mitigation activities generating nonauthorized carbon credits (that is, utilizes Option 3 in respect of Section VII.A of the framework), it will have no mechanism by which to assess or collect levies or fees on those mitigation activities. While this may reduce bureaucracy and attract international private sector finance, it also requires the country to forego a revenue collection opportunity.

The terms "levies" and "fees" encompass all financial obligations requiring proponents of mitigation activities to provide monetary payments or transfer carbon credits to government entities or other relevant stakeholders, including communities and beneficiaries. While benefit sharing in NBS activities is addressed separately in **Appendix A.4**, the concept of sharing revenue or carbon credits with communities extends beyond NBS mitigation activities to all carbon mitigation activities.

Existing carbon market frameworks show no standard classification system for distinguishing between fees and levies. This Legal Toolkit defines "fees" as compensation for fixed government costs, such as administrative expenses like staff costs for framework implementation. "Levies" refer to financial obligations established through policy decisions, such as charges on ITMOs to account for NDC opportunity costs and manage overselling risks. These may be structured as financial payments - either fixed amounts or revenue percentages - or as portions of carbon credits.

Types of levies and fees include the following:

- **Administrative fees:**[133] These cover review processes (if applicable), registry or listing costs, and administrative expenses related to ITMO transactions, including Article 6 reporting requirements. Authorization-related administrative fees should encompass costs for ITMO tracking, reporting under Article 6.2 guidance, as well as expenses for implementing corresponding adjustments.[134]
- **Authorization or corresponding adjustment levy:** While administrative costs for authorizing ITMOs and applying corresponding adjustments can be combined with other such fees, a country may establish separate strategic levies on ITMOs - either a monetary charge or as a portion of ITMOs - to reflect the opportunity cost of not using those ERRs toward its NDC.[135]

This represents the most common approach to levies and fees in carbon market frameworks, though additional options exist. **Box 6.5** highlights levy options a country may also have to consider.

133 Administrative fees can be bundled into a single fee rate or separated by fee use.

134 Climate Finance Innovators. 2024. Setting an Article 6 levy structure in Senegal - A practical guide to administrative fees and benefit-sharing levies under Article 6 of the Paris Agreement. https://climatefinanceinnovators.com/wp-content/uploads/2024/04/CFI_FeeStructureSenegal_ModalitiesAndRates_2024.pdf

135 To effectively reduce overselling risks and account for economic trade-offs of granting authorizations, any authorization or corresponding adjustment levies must be set at rates that generate enough revenue to cover potential NDC achievement shortfall. However, the rates cannot be so high that it discourages investors from participating in the country's carbon markets. Climate Finance Innovators. 2024. Setting an Article 6 levy structure in Senegal A practical guide to administrative fees and benefit-sharing levies under Article 6 of the Paris Agreement. https://climatefinanceinnovators.com/wp-content/uploads/2024/04/CFI_FeeStructureSenegal_ModalitiesAndRates_2024.pdf.

### Box 6.5 Optional Levies Targeting Global Benefits

A carbon market framework may optionally include additional fees related to global climate goals, including the following:

- **Share of proceeds (SOP) for adaptation:** SOP is a required fee under the Paris Agreement Crediting Mechanism (PACM), which is used to cover the PACM Supervisory Body's (SB) administrative expenses and support developing country adaptation needs through the Adaptation Fund.[a] SOP is strongly encouraged under Article 6.2 on a voluntary basis.
- **Overall mitigation in global emissions (OMGE):** OMGE is a required cancellation of issued Article 6.4ERs to support global climate ambition.[b] It is required under the PACM but strongly encouraged under Article 6.2.
- **Applying SOP and OMGE to all carbon market transactions** under the framework can demonstrate a country's commitment to greater mitigation and adaptation ambition. However, the additional optional fees must be balanced by the realities of project and investment costs to scale mitigation activities. If there are too many fees or levies taken out of the topline revenues of an activity, it may become too difficult to maintain its viability and will be less attractive as an investment.[c]

a. SOP includes a transfer of 5 percent of issued Article 6.4 Emission Reduction (A6.4ERs) to the Adaptation Fund, equaling 3 percent of the issuance fee under the PACM paid to the Adaptation Fund, and 5 percent of A6.4ERs as additional fees for SB administrative expenses. The requirements apply for both authorized A6.4ERs and mitigation contribution units (MCUs) (UNFCCC 2021).
b. OMGE requires the automatic cancellation of at least 2 percent of issued A6.4ERs. The requirements apply for both authorized A6.4ERs and MCUs (UNFCCC 2021).
c. World Bank et al. 2025.

The selection of fees, charges, and levies for Article 6 transactions depends on the national context (see **Box 6.6**). A country must ensure that the administrative and opportunity costs of carbon market participation are appropriately captured through levies and fees, while avoiding excessive financial burdens that could undermine the viability of mitigation activities. This consideration can inform levy design (such as whether to have a flat percentage charge on gross revenue, which could affect the viability of certain types of lower-margin projects, or to have a graduated one based on the type of project). For example, a country should consider other financial obligations on project proponents, such as income tax requirements and benefit-sharing arrangements with communities. Some countries, including Ghana, have implemented differentiated fee structures based on mitigation activity size or sector to avoid creating undue burdens on specific activity types or scales (Ghana Carbon Market Office 2022). Conversely, the country

could decide to affirmatively promote certain activity types through fiscal policy and incentives.[136]

Domestic tax treatment of carbon market transactions, including taxation of revenues, any value-added tax, and treatment of cross-border transfers of carbon credits, is a matter of national policy and priorities, but it is important that its rules be clear to allow project proponents and investors to make informed decisions. Hence, these should be taken into account in designing a broader carbon market framework.

Effective and fair carbon market levies and fees should be guided by several key principles. These include alignment with national priorities and the legal framework, consistency with international arrangements, simplicity, proportionality, and a balance between flexibility and predictability (Kovács, Maggiore, and Pardo 2024). These rates must be defined transparently through specific criteria, communicated clearly, and applied consistently (GGGI 2023b).

### Box 6.6 Country Spotlight: Carbon Market Levies and Fees



**PAKISTAN**

**Title:** Pakistan Policy Guidelines for Trading in Carbon Markets 2024 (Guidelines)[a]

**Legal instrument:** The Guidelines were developed by the Ministry of Climate Change and Environmental Coordination. They establish a framework for operationalizing carbon markets within Pakistan, encompassing both voluntary carbon market (VCM) and compliance markets.

**Relevant legal framework option:** Option 1: Require levies and fees as a financial amount based on activity revenue; and Option 2: Require a levy as a percentage of carbon credits (see **Table 6.4**).

**Description:** The Guidelines establish several fees for project proponents, set as a percentage of generated carbon credits and revenue. First, 5 percent of generated credits are deducted from the activity. While the use of deducted

136 Many climate-unfriendly industries have enjoyed and continue to enjoy fiscal incentives to promote economic development. That same approach could be used to promote climate-friendly industries where scaling leads to green job creation. In turn, the new, green industries generate fiscal revenue via corporate income taxes versus paying higher levies on carbon transactions themselves.

credits is not explicitly specified, the Guidelines state a preference for using them toward Pakistan's NDC achievement. Second, a corresponding adjustment fee is collected at 12 percent of net revenue from carbon credit sales, with half of the revenue directed to the province in which the activity is located and the other half to the national Climate Change Fund. Finally, an administrative fee of 1 percent of the gross revenue of carbon credit sales is allocated to the federal government. The percentage-based fee structure minimizes disproportionate impact to small projects in comparison to fixed fees; however, it exposes Pakistan to revenue fluctuations depending on market dynamics.

a. Government of Pakistan 2024.

## Legal Framework Options

The carbon market framework must provide legal certainty for market participants while enabling a country to capture fair value from carbon market activities within their jurisdiction. Two primary approaches emerge for structuring carbon market levies and fees, as described in **Table 6.4**. The first option establishes fixed financial amounts based on specific activities, providing predictable costs for project proponents and straightforward administration for government agencies. The second option requires transfer of a percentage of carbon credits to the government authority, creating a revenue stream that scales with market activity and carbon credit values. Both approaches can be implemented through clear legal provisions that specify payment obligations, timing requirements, and the responsible parties, ensuring transparency and compliance while supporting the framework's broader policy objectives.

**Table 6.4** Legal Framework Options for Defining Carbon Market Levies and Fees

| OPTION 1: Require levies and fees as a financial amount based on activity revenue.[137] | |
|---|---|
| Advantages | • Provides predictable government revenue stream that enables better budget planning and allocation for climate programs and administrative costs<br>• Simplifies levy administration and compliance monitoring since amounts are based on clear revenue figures rather than credit volumes |

137 When deciding whether to charge a levy as a flat amount or percentage of revenue received from sale of credits, a country should consider how the added financial obligation may impact commercial viability. For example, when the levy value is set as a fixed financial amount, this fiscal obligation can seem disproportionately high during periods of low carbon prices. Alternatively, while a percentage approach can make it difficult for the country to predict levy revenues in a fluctuating market, project proponents and the country share in the financial upside when prices are high and maintain commercial viability of the mitigation activity when prices are lower.

| | |
|---|---|
| Disadvantages | • May create disproportionately high burden during periods of low carbon prices, potentially making mitigation activities financially unviable<br>• Fixed amounts do not scale with market conditions, meaning a country may lose revenue during high-price periods<br>• Could discourage mitigation activity development in volatile markets where project proponents cannot predict revenue relative to fixed fee obligations<br>• May require frequent adjustments to maintain appropriate levels as carbon markets and prices evolve over time |
| Example legal text | **Section VII. Carbon Credit Transactions**<br>. . .<br>**D. Levies and fees**<br>1. A project proponent generating Internationally Transferred Mitigation Outcomes (ITMOs) shall pay the levies and fees set forth in Schedule [X][138]. |
| **OPTION 2: Require a levy as a percentage of carbon credits.** | |
| Advantages | • Automatically adjusts to market conditions, maintaining mitigation activity viability during low-price periods and capturing upside during high-price periods<br>• Eliminates need for frequent levy rate adjustments as the percentage remains constant while adapting to market changes<br>• Provides country with direct stake in carbon credit quality and market performance rather than just revenue extraction |
| Disadvantages | • Creates unpredictable government revenue stream that makes budget planning and resource allocation more difficult<br>• Requires country to manage and potentially sell carbon credits, adding administrative complexity and market risk<br>• Complicates levy administration as it requires tracking credit volumes, prices, and transfers rather than simple revenue calculations |
| Example legal text | **Section VII. Carbon Credit Transactions**<br>. . .<br>**D. Levies and fees**<br>[. . .]<br>2. [1.] Upon issuance of ITMOs by the approved carbon crediting standard body, a project proponent shall transfer a percentage of the total volume of [ITMOs][carbon credits] to the Administrative Authority at the rate set forth in Schedule [X]. |

*Source:* Original for this publication.

138 The timing and amounts for carbon market levies and fees can be listed in a Schedule annexed to the framework. A country could specify which carbon credits would be subject to the levy - ITMOs, MCUs and/or voluntary carbon credits, if voluntary carbon credits are subject to an endorsement process.

## 6.5. Allocation of Revenue

### Overview

When establishing a carbon market framework, a country must consider how to allocate the revenue generated from carbon market activities (**Table 6.5**). A country can act in dual capacity: as a direct market participant selling government-owned carbon credits, and as a regulator collecting levies and fees from private entities selling carbon credits. This section focuses on the use of levies and fees collected from market participants, as these revenue allocation decisions directly impact market design and participant incentives.

Levies and fees, whether collected as monetary payments or carbon credits, may be distributed to the national government, subnational government, communities, or other actors, as stipulated in the framework. The revenue-allocation mechanism[139] serves several interconnected policy goals: ensuring sustainable program administration, advancing national climate commitments, supporting community development, and maintaining market integrity (World Bank 2019).[140] See **Box 6.7** for a country example.

**Table 6.5** Revenue-Allocation Options

| Allocation option | Revenue type | Potential revenue use |
|---|---|---|
| **Government allocation of levy revenue** | Monetary | • Dedicated climate funds for mitigation or adaptation (World Bank et al. 2025)<br>• Broader fiscal priorities, such as debt reduction, general budget support, or targeted development programs[141] |

139 This section focuses on the allocation of levy revenue and collected carbon credits from a national perspective. An overview of mitigation activity–level benefit sharing in the context of NBS is described in **Appendix A.4**, noting that these lessons have relevance for mitigation activities across all sectors.

140 As noted in **Appendix A.4**, this Legal Toolkit refers to financial obligations established through policy decisions as "levies." As such, policies that require a portion of the proceeds from sales of carbon credits by a private entity to be allocated to a specified use (for example, contributed to a sustainable development fund or used to offset administrative costs associated with applying corresponding adjustments) are considered levies.

141 General budget integration offers flexibility but may reduce direct climate impact of carbon market participation.

| Allocation option | Revenue type | Potential revenue use |
|---|---|---|
| **Government allocation of reserved credits (for example, buffer accounts or reserve systems that hold a portion[142] of generated credits to address potential overselling and accounting risks)[143]** | Carbon credits | • Protection against overselling<br>• Support for Nationally Determined Contribution (NDC) achievement<br>• Contribution to overall mitigation in global emissions (OMGE)<br>• Country credit sales |
| **Community and local government allocations, recognizing the role of local stakeholders in mitigation activity implementation and the need for equitable benefit distribution[144]** | Monetary or carbon credits[145] | • Equitable distribution of revenue, credits, or other in-kind benefits[146]<br>• Strengthen governance arrangements<br>• Local development priorities |

*Source:* Original for this publication.

## Legal Framework Options

The legal structure for revenue allocation must align with the broader levy and fee framework established. Clear specification of revenue use cases provides market participants with necessary transparency regarding how monetary payments and carbon credit transfers will be managed and deployed. This clarity supports investor confidence while ensuring that allocation mechanisms can effectively serve their intended policy objectives.

142 Buffer percentage determination remains an evolving practice. A country must balance overselling protection with activity viability, as higher buffers increase NDC security but may deter carbon market investment (GGGI 2023).

143 For example, Ghana reserves 1 percent of ITMOs in a national buffer account for NDC achievement or OMGE (Ghana Carbon Market Office 2022).

144 These revenue allocation arrangements operate at the regulatory framework level and complement mitigation activity–specific benefit-sharing agreements between project proponents and local partners.

145 For example, Zimbabwe mandates minimum community investment from retained revenues: Carbon Trading (General) Regulations, 2025. Statutory Instrument 48 of 2025. https://faolex.fao.org/docs/pdf/zim238445.pdf.

146 Effective implementation requires clear fund management guidelines, transparent allocation processes, and monitoring systems to ensure beneficiaries receive allocated resources.

### Box 6.7 Country Spotlight: Allocating Levy Revenues

**INDONESIA** 

**Title:** Regulation of the Minister of Environment and Forestry of the Republic of Indonesia; Number 21 Of 2022 of Procedures for the Application of Carbon Economic Value (Peraturan Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia Nomor 21 Tahun 2022 Tentang Tata Laksana Penerapan Nilai Ekonomi Karbon) (Regulation)[a]

**Legal instrument:** The Regulation was developed by the Ministry of Environment and Forestry to implement provisions of the Regulation of the President Number 98 of 2021 on the Organization of Carbon Economic Value for Achievement of Nationally Determined Contribution (NDC) Targets and Control over Greenhouse Gases (GHGs) in National Development.

**Relevant legal framework option:** Option 2: Define the allocation of reserved carbon credits (see **Table 6.6**).

**Description:** The Regulation mandates that carbon-trading activities must contribute carbon credits to a buffer mechanism. To establish the buffer system, percentages of carbon credits are directed from mitigation activities to the buffer pool at specified rates: up to 5 percent of carbon credits are reserved from domestically traded credits, 10–20 percent for internationally traded credits, and at least 20 percent for internationally transferred credits that fall outside of Indonesia's NDC scope. In each case, the ministry and relevant sector minister determine the exact percentage. If NDC targets are met for two consecutive years in a specific sector, the unused carbon credits from the buffer may be returned to the project proponent.

a. See Regulation of the Minister of Environment and Forestry of the Republic of Indonesia; Number 21 Of 2022 of Procedures for the Application of Carbon Economic Value: https://faolex.fao.org/docs/pdf/ins217195.pdf.

An effective legal framework for revenue allocation typically includes several key elements: It establishes clear definitions of different revenue streams and their intended purposes, distinguishing between administrative fees, authorization levies, and other payments. It specifies the institutional arrangements for revenue management, including which agencies or entities will receive and deploy allocated funds (further discussed in **Chapter 2**). It outlines transparent processes for fund

management and disbursement, including any required consultation or approval mechanisms. Finally, it establishes monitoring and reporting requirements to ensure accountability and track the effectiveness of allocation mechanisms in achieving policy objectives. **Table 6.6** outlines the primary legal options for structuring carbon market revenue allocation, providing a country with a guide for selecting approaches that align with its national circumstances and policy priorities. **Figure 6.1** shows a decision tree for developing a legal framework for carbon credit transactions.

**Table 6.6** Legal Framework Options for Allocating Levy Revenues

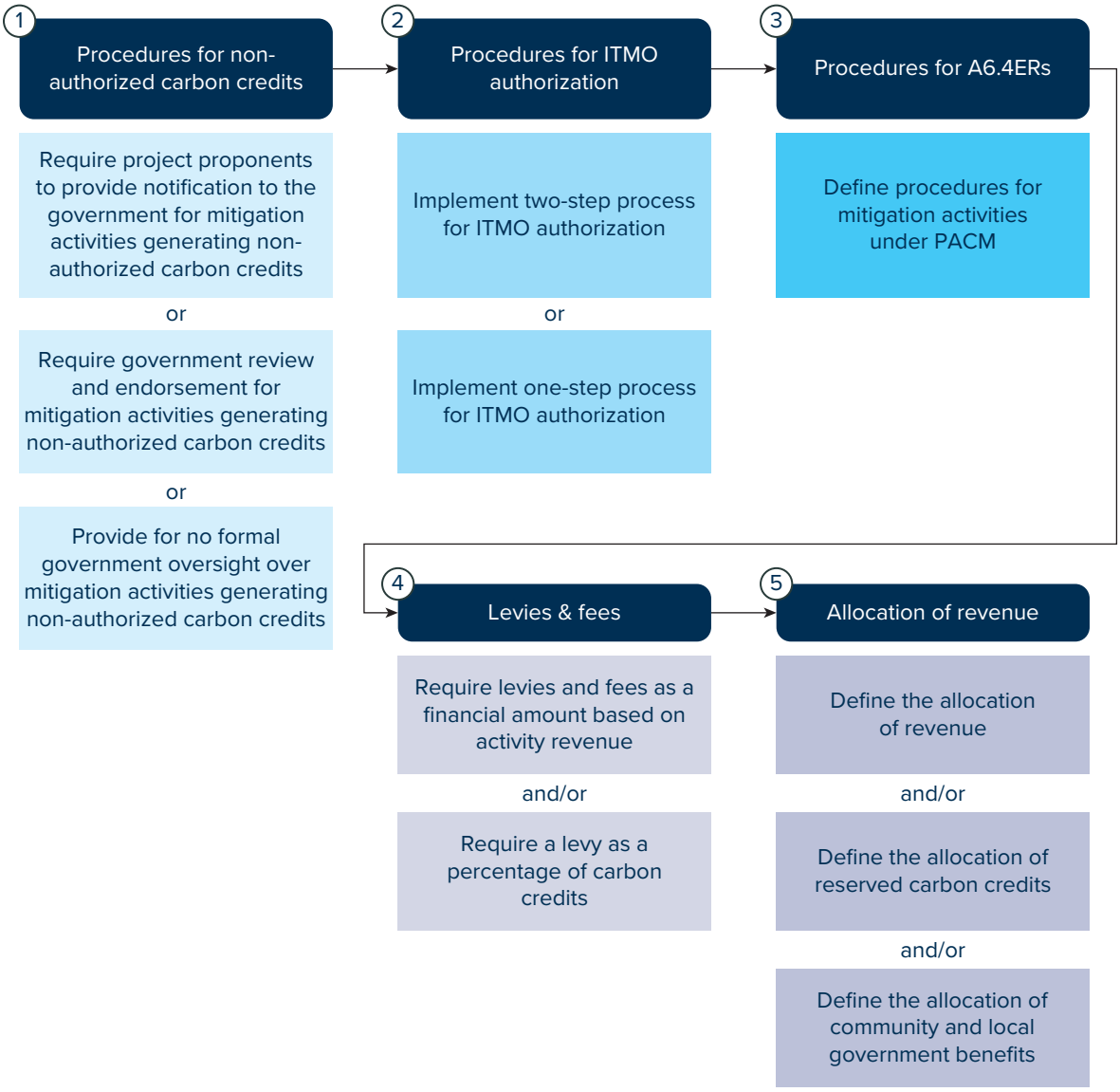
| | |
|---|---|
| **OPTION 1: Define the allocation of revenue.** | |
| Advantages | • Provides clear legal framework for how carbon market revenues will be used, creating transparency and accountability in government spending<br>• Establishes clear institutional roles and responsibilities for revenue management, reducing potential for misuse or inefficient allocation |
| Disadvantages | • Restricts government fiscal flexibility by earmarking revenues for specific purposes rather than allowing allocation based on changing priorities<br>• Requires ongoing monitoring and reporting systems to ensure compliance with allocation requirements, adding administrative burden |
| Example legal text | **Section VII. Carbon Credit Transactions**<br>. . .<br>**E. Allocation of revenue**<br>1. Revenue from the payment of fees under Schedule [X] shall be used for the administrative costs of operating the carbon market program.<br>2. Revenue from the payment of levies under Schedule [X] related to [authorization][voluntary carbon market – VCM] shall be paid into a [fund] [and directed toward reinvestment in activities aligned with the Nationally Determined Contribution – NDC].<br>3. The Administrative Authority shall develop [regulations][guidance] setting forth the various revenue streams and their intended purposes, specifying the institutions responsible for revenue management, fund management and disbursement, and monitoring and reporting requirements. |
| **OPTION 2: Define the allocation of reserved carbon credits.** | |
| Advantages | • Creates a government reserve of carbon credits that can be used strategically for NDC achievement or sold when market conditions are favorable<br>• Provides a direct government stake in carbon credit quality and market performance rather than just revenue extraction<br>• Allows a country to participate directly in carbon markets and potentially capture value appreciation over time |
| Disadvantages | • Requires government capacity to manage, store, and potentially trade carbon credits, adding technical and administrative complexity<br>• Creates market risk for a country as credit values may fluctuate, potentially reducing expected revenue or policy effectiveness |

| | |
|---|---|
| Example legal text | **Section VII. Carbon Credit Transactions**<br>. . .<br>**E. Allocation of revenue**<br>[. . .]<br>[4.][1.] Carbon credits reserved under Schedule [X] shall be held in a buffer account to be used for [insert purposes]. |
| **OPTION 3: Define the allocation of community and local government benefits.** | |
| Advantages | • Ensures local communities and governments receive direct benefits from mitigation activities implemented in their areas, improving social acceptance and mitigation activity sustainability<br>• Creates legal requirements for revenue allocation and benefit sharing (see **appendix A.3**) that help address historical concerns about equitable distribution of carbon market revenues<br>• Builds local support for climate action and mitigation activities by demonstrating tangible benefits rather than abstract environmental gains |
| Disadvantages | • Adds complexity to mitigation activity development and implementation by requiring negotiation and management of revenue-allocation arrangements or benefit-sharing agreements<br>• Could reduce overall profitability and attractiveness of mitigation activity to investors by requiring additional revenue sharing beyond levies and fees<br>• Requires ongoing monitoring and enforcement to ensure revenue-allocation arrangements or benefit-sharing agreements are properly implemented and maintained over mitigation activity lifetime |
| Example legal text | **Section VII. Carbon Credit Transactions**<br>. . .<br>**E. Allocation of revenue**<br>[. . .]<br>[5.][1.] A project proponent shall deliver a percentage of [gross revenue][net revenue] at the rate set forth in Schedule [X] and in the manner agreed in the benefit-sharing arrangement or revenue-allocation agreement[147] to identified beneficiaries. |

*Source:* Original for this publication.

147 As described in **Appendix A.4**, benefit-sharing arrangements or revenue-allocation arrangements describe beneficiaries, monetary and nonmonetary benefits, and the benefit-distribution mechanism(s) for a mitigation activity. These arrangements should be developed in partnership with beneficiaries through strong community engagement and FPIC, where applicable.

**Figure 6.1** Decision Tree for Developing a Legal Framework for Section VII: Carbon Credit Transactions




*Source:* Original for this publication.

*Note:* ITMO = Internationally Transferred Mitigation Outcome; PACM = Paris Agreement Crediting Mechanism.

## 6.6. Key Takeaways

- A country should design carbon credit transaction procedures that balance encouraging carbon market investment with advancing national climate priorities.

- **Nonauthorized carbon credits:** While country oversight of mitigation activities generating nonauthorized carbon credits offers benefits including quality assurance, national alignment with climate goals, and visibility for UNFCCC reporting obligations, any requirements should minimize bureaucracy and avoid bottlenecks that could hinder market development.
- **ITMO authorization:** Authorization procedures for ITMOs should also balance oversight with market efficiency and include clear criteria against which to evaluate authorization requests. This chapter describes two options for authorization processes: a two-step process (LoS prior to implementation, followed by authorization) or one-step process (LoA prior to implementation). Existing mitigation activities may continue throughout the authorization process under both options.
- **A6.4ERs:** While PACM activities can generate nonauthorized or authorized carbon credits, which would align with the transaction procedures for nonauthorized carbon credits and ITMOs, they require distinct procedural provisions due to specialized Article 6.4 requirements, including unique templates, registration processes, and SB oversight. Clear procedures for each pathway support market certainty while maintaining compliance with international obligations.

- An effective carbon market framework requires carefully designed levy and fee mechanisms that capture the administrative and opportunity costs of international transfers while avoiding excessive burdens that could undermine mitigation activity viability and market participation. These design considerations are also reflected in the need for clear rules for the tax treatment of carbon market transactions and carbon credits.
- Strategic allocation of carbon market revenues, whether monetary payments or collected carbon credits, can support multiple policy goals, including sustainable program administration, enhanced climate ambition through reinvestment, community development, and protection against overselling through buffer mechanisms.





# 7 ENFORCEMENT AND DISPUTE RESOLUTION

This chapter discusses options available to a country related to enforcing the laws and regulations comprising their carbon market framework. It also defines pathways for raising any grievances and settling disputes that may arise in the context of the application or enforcement of the laws and regulations.

**CARBON MARKET LEGAL FRAMEWORK OUTLINE**

**Section I. Purpose and Definitions**
A. Purpose
B. Definitions

**Section II. Legal Instruments and Institutions**
A. Responsible authorities and governance functions

**Section III. Mitigation Activity Design and Development**
A. Approved sectors and activities for generating ITMOS
B. Approved carbon crediting standards and methodologies
C. Aligning mitigation activities at multiple levels
D. Social and environmental integrity requirements
E. Integrity requirements for the use of carbon credits
F. Mitigation activity validation

**Section IV. Monitoring, Reporting, and Verification**
A. Mitigation activity MRV

**Section V. Carbon Rights, Credit Issuance, and Registry Procedures**
A. Legal nature and available rights in emission reductions or removals
B. Legal nature and available rights in carbon credits
C. Carbon credit issuance
D. Registry procedures

**Section VI. Carbon Credit Transactions**
A. Procedures for nonauthorized carbon credits
B. Procedures for ITMO authorization
C. Procedures for A6.4ERS
D. Levies and fees
E. Allocation of revenue

**Section VII. Enforcement and Dispute Resolution**
A. Enforcement authority and powers
B. Dispute resolution

**Section VIII. Appendixes**

Enforcement and dispute resolution represent two different mechanisms to achieve accountability in carbon market governance. Enforcement mechanisms ensure compliance with established rules and standards, while dispute resolution procedures provide fair and efficient pathways for addressing conflicts that may arise during implementation between the country and carbon market participants. These systems must work in tandem. Effective enforcement reduces disputes by promoting compliance, while accessible dispute resolution mechanisms provide legitimacy checks on enforcement actions and ensure due process protections.

Three key principles should guide the design of both enforcement and dispute resolution frameworks. First, institutional integration: rather than creating parallel systems, these mechanisms should build on existing legal traditions and regulatory frameworks to ensure consistency and efficiency. Second, proportionate response: enforcement actions and dispute resolution procedures should be appropriately scaled to the severity and complexity of the issues, with clear escalation pathways from administrative to judicial remedies. Third, stakeholder accessibility:

mechanisms must be accessible to all carbon market participants, including local communities, project proponents, and government agencies, while maintaining appropriate technical and procedural rigor.

Although not discussed in detail in this toolkit, it is also important for countries to ensure that there are safeguards from actions to enforce laws, such as land and natural resources laws, that need to cover general due process and other human rights protections, as well as the use of force by law enforcement agents such as park rangers, evictions, and restrictions of access to protected areas, among others (World Bank 2025c).

## 7.1. Enforcement Authority and Powers

### Overview

#### Enforcement authority

A legal framework is ineffective without clear and practicable enforcement mechanisms. These mechanisms must be carefully designed to align with a country's constitutional structure, legal context, and existing regulatory apparatus while ensuring meaningful accountability for carbon market participants. Enforcement powers should derive from clear constitutional authority and integrate easily with the country's established legal tradition, whether common law, civil law, or mixed systems. To the extent possible, a country should leverage existing statutory frameworks and adapt proven enforcement mechanisms to the carbon market context. Nevertheless, the statutory framework establishing carbon market governance should explicitly articulate enforcement obligations and identify the designated responsible government authority as the entity responsible for such enforcement obligations.[148]

When there is no appropriate entity in place, the creation of specific institutions that will undertake law enforcement in mitigation activities should be included in the framework.[149] In some cases, a generic law can set basic background rules around executive agency rulemaking, enforcement, and judicial review,[150] but the authority of individual agencies to enforce environmental laws, including imposing penalties, are not covered and therefore specified in specific environmental statutes focused on, for example, air or water. Alternatively, if it is too administratively complex or

148 See **Chapter 2.1** for considerations related to selecting one or more responsible authorities for administration of carbon market activities.

149 See INECE 2009; UNODC "Crimes That Affect the Environment" at https://www.unodc.org/unodc/en/data-and-analysis/the-landscape-of-criminalization.html; Vinuales and Lee 2019; and Bennett 2019.

150 Some jurisdictions have an overarching statute governing the enforcement authority of executive bodies (for example, the Administrative Procedure Act in the United States or the Code of Administrative Procedure in Germany).

confusing to reference different existing enforcement frameworks, a country could specify in its carbon market statute a newly created enforcement body that would house specialized expertise to help oversee and enforce carbon market related violations.

**Enforcement powers**

The carbon market framework may establish enforcement obligations by referencing existing enforcement powers associated with broader regulatory action. Leveraging existing statutes ensures consistency across the regulatory landscape while recognizing that available powers may vary depending on the type of instrument or activity in question. Nevertheless, in instances where a country creates a new entity to serve as the primary authority, or the country otherwise does not have an applicable, existing statute governing administrative enforcement actions, the carbon market framework may need to explicitly define the enforcement powers instilled in the primary authority.[151]

At all times, enforcement powers must be exercised in accordance with due process and other human rights protections, and, where relevant and culturally appropriate, use of such powers should require judicial approval in the form of a formal subpoena, warrant, or similar order. Proper enforcement powers can bolster the real and perceived integrity of mitigation activities and resulting carbon credits originating in the country. It can also encourage wider market participation due to increased confidence that an entity's carbon investment in the country is legally enforceable.[152] A country should consider the following categories of activities when evaluating appropriate enforcement powers:

- Power to collect information about regulated carbon market activities and inspect associated mitigation activities and premises
- Power to order or conduct independent audits of information provided to the authority during a project proponent's participation in carbon market activities
- Power to restrict participation in domestic carbon market activities, including by revoking relevant endorsements or permits for mitigation activities
- Power to impose civil and criminal penalties for violations of the carbon market framework regulations
- Power to take any of the above actions on an expedited basis in an emergency to address imminent risks of environmental harm or market manipulation

151 Depending on the responsible authority's mandate on carbon markets, it may also delegate specific enforcement actions to appropriate agents, including specialized subagencies, technical committees, or certified inspectors. This delegation structure enables specialized expertise while maintaining clear accountability chains and avoiding regulatory fragmentation.

152 At minimum, best practice governance and risk management practices should be enforceable through powers expressly delegated to the responsible authority (World Bank et al. 2025).

- Power for cross-border coordination to share relevant information across jurisdictions.[153]

**Table 7.1** describes the types of considerations that may be applicable to enforcement actions related to different activities or types of instruments. For instance, the enforcement authority and mechanisms are likely to differ greatly between implementing a land-based mitigation activity in accordance with the carbon market framework combating fraud during the purchase or use of carbon credits.

**Table 7.1** Considerations for Various Types of Enforcement per Activity Type

| ACTIVITY TYPE | ENFORCEMENT CONSIDERATIONS |
|---|---|
| **Land-based mitigation activity** | For land-based mitigation activities, enforcement mechanisms should integrate with existing legal frameworks on property, natural resource law and governance, land use, forestry, wildlife, and agriculture. This integration is particularly relevant for Reducing Emissions from Deforestation and Forest Degradation (REDD+) programs and projects and nature-based solutions (NBS) where traditional ownership rights and carbon rights may intersect or conflict. |
| **Other mitigation activities** | Enforcement mechanisms for activity-based mitigation should align with, and be informed by, relevant existing legal frameworks on energy or utilities, waste management, transport, and blue carbon, among others. |
| **Financial instruments** | Where carbon credits function as financial instruments or investment or consumer products, enforcement should align with existing financial market law frameworks. This includes registration requirements, disclosure obligations, and investor protection measures.[154] |

*Source:* Original for this publication.

153 Specific domestic powers associated with cross-border coordination may be limited depending on the scope of the country's administrative powers. As such, cross-border enforcement may be better addressed in the relevant contractual arrangements governing international transactions (for example, applicable LoA, implementation agreements, or purchase agreements).

154 A country should clearly define the legal nature of a carbon credit under domestic law to ensure appropriate regulatory oversight. See **Chapter 5.2** for a detailed discussion on Legal Nature and Available Rights in Carbon Credits.

There may be various existing enforcement laws or regulations that are relevant to the primary authority's enforcement powers under the carbon market framework.[155] To allow the primary authority to apply the appropriate existing enforcement laws or regulations to carbon market activities, it will be important to first identify which enforcement powers and corresponding activities they cover.

**Penalties**

Enforcement powers should include, to some degree, the ability to impose civil and/or criminal penalties, as appropriate (**Table 7.1**). Without this power, carbon market participants have less incentive to comply with the parts of the legal framework that elevate the integrity, effectiveness, and equitable administration of the country's carbon market activity. Thus, empowering the primary authority to impose reasonable penalties - that comply with the country's constitutional protections, align with its legal context, and adhere to international human rights best practice standards - can help build market confidence and encourage participation in the country's carbon markets.

Effective penalty structures will incorporate both civil penalties (for example, monetary penalties) and, where necessary, criminal penalties (for example, imprisonment terms). Penalties should be proportionate to the severity of violations and scaled to provide meaningful deterrent effects. The framework should clearly distinguish between civil and criminal penalties based on the nature and severity of violations.

Civil penalties are typically appropriate for regulatory violations, noncompliance with reporting requirements, or administrative infractions. Such penalties may include monetary fines, audits, loss or suspension of permissions to participate in the regulated activity, rescission of endorsement for the mitigation activity, public warnings or shaming, injunctions, restitution or disgorgement, compensation to the aggrieved party (for example, carbon credit buyer or community that did not receive a benefit), and imposition of compliance monitors. For example, in the event a project proponent fails to adhere to the reporting requirements in **Section III.D (Social and Environmental Integrity Requirements)** or **Section IV (Monitoring, Reporting, and Verification)** of the framework, appropriate penalties might include fines or an independent audit by the primary (or administrative) authority. Civil enforcement generally requires a lower burden of proof and can be administered directly by regulatory agencies.[156]

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155 For example, a national forestry law may authorize a specific ministry (for example, the Ministry of Forestry) to utilize certain enforcement powers relevant to land-based mitigation activities, while a national energy law may delegate similar or different enforcement powers relevant to activity-based mitigation activities to the Ministry of Energy.

156 The collection of modest civil penalties can also help address the costs of enforcement activities. Effective enforcement will require adequate resources, which may be drawn from fines or levies specifically imposed under the carbon market framework (see **Chapter 6.3** for a detailed discussion of levies and fees) or which may be funded through separate sustainable finance mechanisms (for example, green banks, conservation funds, permit fees, and protected lands or park fees).

Criminal penalties, such as imprisonment, substantial fines, revocation of the regulated entity's license to operate in the country, and cancellation of permits to issue carbon credits, should be reserved for more serious violations such as fraud, willful misrepresentation, or deliberate circumvention of regulatory requirements as well as other violations that are not intentional but rather *mala prohibita*. Criminal penalties should be reserved for serious offenses, with clear public communications and capacity building for market participants to understand and comply with the rules. Criminal enforcement processes should require prosecution through the judicial system with higher evidentiary standards than civil enforcement processes.

### Box 7.1 Country Spotlight: Enforcement Authority and Powers

**GHANA**



**Title:** Framework on International Carbon Markets and Non-Market Approaches (Framework)[a]

**Legal instrument:** The Framework is grounded in the Environmental Protection Act of Ghana (EPA) of 1994 and the amended EPA of 2025 (further elaborated in **Box 2.4**). The amended EPA further includes §§161–164, which prescribe enforcement measures.

**Relevant legal framework option:** Utilize an existing enforcement framework (see **Table 7.2**).

**Relevance:** The Framework refers to the EPA for applicable enforcement mechanisms. The amended EPA empowers the governing body of the Environmental Protection Authority to designate an officer as an environment protection inspector. The amended EPA defines the enforcement powers available to the inspector and imposes penalties for obstructing an inspector performing their enforcement duties or failing to comply with a lawful inquiry or requirement by an inspector. The amended EPA also allows for both civil and criminal penalties. Upon a finding of liability on summary conviction for interference with an inspector, potential civil penalties include fines of 500-1,000 penalty units, which is multiplied by a value determined by the Attorney General. Potential criminal penalties include imprisonment for three to six months.

a. Ghana Carbon Market Office 2022.

### Coordination and transparency

As noted throughout, effective carbon market governance requires clear communication channels between all relevant stakeholders. Coordination among multiple regulatory bodies is particularly relevant for ensuring consistent and efficient enforcement, given the cross-cutting nature of carbon market activities. The primary authority[157] should establish formal cooperation mechanisms with relevant agencies, including forestry services for land-based mitigation activities, environmental regulators for environmental impacts, financial regulators for market oversight, and tax authorities for revenue implications. These coordination mechanisms may include information-sharing agreements, joint inspection protocols, and clear delineation of primary enforcement responsibility to avoid regulatory gaps or conflicts and ensure safeguards from law enforcement actions.

A country may also benefit from establishing notification protocols for significant violations of an approved carbon crediting standard's terms of use or applicable methodology. Such notification protocols could operate bidirectionally, with the standards notifying the authority of significant compliance issues and the authority notifying the standards of enforcement actions taken against their registered mitigation activities.[158] Such coordination prevents regulatory gaps and ensures consistent enforcement across the carbon market ecosystem.[159]

A country's coordination activities should also help support transparent public communication that informs carbon market participants of their responsibilities and the country's power to enforce the rules of participation. Each relevant agency should provide clear public information regarding the scope of its enforcement activities, as well as the rules themselves and the consequences for violating them. For example, an environmental regulator that has approval and monitoring authority over mitigation activities governed by the carbon market framework may have certain enforcement powers associated with the activities themselves (for example, ordering an independent audit or revoking relevant approvals or permits). At the same time, a financial regulator or tax authority may have enforcement powers related to the transfer, use, and revenue reporting associated with the carbon credits resulting from the mitigation activities. When each relevant agency clearly communicates its role in carbon market activities and associated

157 It may also be necessary for the responsible authority to work with, or defer to, any entity established or assigned to facilitate interinstitutional coordination in section II.A of the framework – Governance Functions and Responsible Authorities.

158 Any notification requirement imposed on international or independent carbon crediting standards bodies would likely need to be established through a separate agreement between the country and the relevant body.

159 An additional consideration for a country is whether and when violations of the legal framework should be made public. Public disclosure of violations could serve a legitimate purpose by informing the market of "bad actors." However, premature disclosure without due process would result in real harm to those accused, even if they are ultimately found innocent. As such, careful consideration of due process and the timing for any public disclosures is warranted.

enforcement powers that accompany it, such transparency is likely to improve compliance and reduce disputes.

### Legal Framework Options

The example legal text in **Table 7.2** describes an option for delegating enforcement powers to the primary authority based on proven practices. Most countries have existing enforcement provisions in other legal frameworks (for example, in overarching statutes governing executive body action or in an existing executive body's enabling statute). In these cases, the carbon market framework should refer to such existing enforcement rules. Providing policy clarity regarding the primary authority's designated enforcement powers, including the availability of penalties and the authority's responsibilities for maintaining transparency, promotes efficient, rules-based access to carbon markets.

**Table 7.2** Legal Framework Option for Defining Enforcement Authority and Powers

| | **OPTION: Utilize an existing enforcement framework.**[160] |
|---|---|
| Advantages | • Leverages established legal procedures and institutional capacity<br>• Ensures consistency with the broader legal system and administrative law principles already familiar to courts and legal practitioners<br>• Reduces implementation costs and time by adapting proven enforcement tools rather than developing an untested new framework |
| Disadvantages | • Risks creating inefficiencies or confusion, as existing frameworks may not be well-suited to the unique technical and market aspects of carbon credit transactions and monitoring<br>• Limits enforcement effectiveness if existing penalties or procedures are inadequate for carbon market violations or fraud<br>• Risks creating jurisdictional conflicts if multiple existing authorities have overlapping enforcement powers in areas related to carbon credit transactions |
| Example legal text | **Section VIII. Enforcement and Dispute Resolution**<br>**A. Enforcement authority and powers**<br>1. The Administrative Authority, in accordance with its governance functions as set out in Section [II.A],[161] and in order to ensure efficient, effective, and equitable administration of carbon market activity, shall have the same authority to conduct enforcement activities granted to [insert entity (for example, Minister of Environment or Minister of Finance)] and shall undertake enforcement activities in accordance with the procedures described in [insert relevant statute]. |

160 This option is most likely to be appropriate when an existing entity is designated as the Authority in Section II.A (Governance Functions and Responsible Authorities) of the framework and has enforcement authority delegated under a current legal framework.

161 This is a cross-reference to Section II.A of the framework – Governance Functions and Responsible Authorities.

| OPTION: Utilize an existing enforcement framework.[160] | |
|---|---|
| Example legal text | *Penalties*<br>2. In addition to any penalties applicable under [insert relevant statute, referenced in Section [VIII.A.1][162]], the Administrative Authority shall have the power to administer civil and criminal penalties in accordance with its enforcement authority over carbon market activity.<br>3. *Civil penalties:* Violations of this Framework, including but not limited to [insert civil violations] shall result in [insert reasonable and lawful civil penalties available under the existing statute referenced in Section [VIII.A.1][163]].<br>**{Indicative civil violations (not exhaustive)}**<br>a. Failure to abide by supply-side integrity or demand-side integrity requirements set out herein<br>b. Failure to independently validate and verify mitigation activities as set out herein<br>c. Failure to comply with the requirements to address reversal risk set out herein<br>d. Engaging in carbon credit project development without following the requisite processes set forth herein<br>e. Failure to pay the required levies and fees<br>f. …<br>[Alternatively, list the requirements and state that any violation of those requirements subjects them to civil penalties]<br>4. *Criminal penalties:* It shall be unlawful for any person to knowingly or intentionally [list offenses]. The person committing such a violation shall be sentenced to [insert reasonable and lawful criminal penalties available under the existing statute referenced in Section [VIII.A.1][164]].<br>*Coordination and transparency*<br>5. In respect of mitigation activities undertaken in accordance with approved carbon crediting standards, proponents shall notify the Administrative Authority within [10 days] of becoming aware of notice of alleged violation of the applicable approved carbon crediting standard and shall make available to the Administrative Authority all documentation and communication from the applicable approved carbon crediting standard related to such violation. |

*Source:* Original for this publication.

162 This is a cross-reference to Section II.A of the framework – Governance Functions and Responsible Authorities.

163 This is a cross-reference to Section II.A of the framework – Governance Functions and Responsible Authorities.

164 This is a cross-reference to Section II.A of the framework – Governance Functions and Responsible Authorities.

## 7.2. Dispute Resolution

### Overview

While effective enforcement will help to promote compliance across carbon market activity and reduce disputes, some disagreements are inevitable. Thus, accessible dispute resolution mechanisms help maintain confidence in carbon markets by providing appropriate checks on enforcement action and ensuring fair and lawful treatment of all participants. This chapter recognizes the distinct legal character of different types of disputes, including those arising from a private entity's objection to treatment by the national or subnational government (for example, via a regulatory decision or enforcement action), transactional conflicts that are governed by specific contract terms, and community-level disagreements related to mitigation activity implementation. It focuses only on disputes arising between a carbon market participant and the designated primary or administrative authority where the legal framework provides for dispute resolution, recognizing that there are multiple pathways by which they may be resolved. The chapter does not cover dispute resolution processes negotiated in international purchase agreements.[165]

Rather than creating entirely new dispute-resolution systems, a country should leverage existing laws as much as possible while recognizing the unique characteristics of carbon market disputes. A successful dispute resolution system will incorporate the following key elements: clear procedural rules with defined timelines, appropriate forum selection based on dispute type and complexity, ultimate judicial oversight to ensure rule of law protections, and meaningful alternative dispute resolution (ADR) options. Additionally, the framework should clearly delineate jurisdictional boundaries between administrative review and judicial oversight, recognizing differences between common law and civil law systems. In most cases, administrative agencies should handle technical and regulatory matters within their expertise, but courts should maintain ultimate oversight authority for constitutional and legal interpretation questions.

### Administrative review

The carbon market framework should identify clear procedures for allowing carbon market participants to raise grievances through appropriate

165 Negotiated dispute resolution processes included in international purchase agreements (whether between two countries or between a country and a private buyer) will be governed by the specific contractual provisions of the purchase agreement. When negotiating these agreements, a country has options for selecting the governing law, as well as determining whether it wants to resolve disputes via court systems or via arbitration (or another form of ADR). When arbitration is preferred, it is recommended that the parties in the agreement designate the arbitral institution and the applicable procedural rules to ensure enforceability and efficiency - either by choosing one that is well-known internationally that applies its own procedural rules (such as the International Centre for Settlement of Investment Disputes, for investor-state disputes, or the International Chamber of Commerce) or by adopting a pre-existing ruleset (such as the United Nations Commission on International Trade Law Arbitration Rules) and naming an appointing and administering authority.

administrative channels. Process details should include relevant timing and deadlines for raising grievances; the form and substance of information that must be provided to the authority; and the office, committee, or individual responsible for resolving grievances. A country should make such grievance redressal procedures accessible to all carbon market participants in a culturally appropriate manner and in the most commonly used languages, and include pathways for vulnerable and marginalized groups to participate. Additionally, the carbon market framework should define an internal process for maintaining a confidential record of grievances, including how grievances received have been processed and addressed.

The framework should also make it clear that complainants must exhaust the available administrative remedies before seeking judicial review. Providing this level of clarity and predictability ensures that carbon market participants understand how to protect their rights and allows the authority sufficient opportunities to address concerns through internal processes. Where relevant, these processes should align with existing dispute resolution mechanisms. This is especially true for a civil law country that has specialized procedures overseen by subject-matter experts for different types of disputes. For instance, there may be prescriptive processes for settling disputes over land-based enforcement actions that differ significantly from those related to financial fraud.[166] Nevertheless, there may be some instances in which relying exclusively on existing mechanisms is impractical.[167] In such cases, a country should expressly define the process for escalating and resolving grievances.

**Judicial review**

When administrative remedies are exhausted or inappropriate, judicial reviews provide final enforcement and oversight measures to ensure carbon market regulations are applied fairly and within legal bounds. In most countries, courts serve as the ultimate arbiters of legal interpretation, aiming to provide timely resolution while maintaining rigorous legal standards. The carbon market framework should specify the eligibility requirements for judicial review, including, where relevant, acknowledgment or articulation of parties with standing to bring claims under the framework. The framework may also describe the procedural steps for pursuing judicial review, including the process for appealing judicial decisions from lower to higher courts if applicable or different from common procedures. All provisions that address judicial review should comply with the country's constitutional protections and align with its legal customs and traditions.

166 Kenya's Climate Change Act, Chapter 387A, § 23H, which governs dispute resolution under Kenya's Climate Change (Carbon Markets) Regulations, directs disputes arising under land-based mitigation activities to the dispute resolution mechanism set out in the Community Development Agreement (in the first instance), and any other dispute to resolution through ADR (in the first instance). In both cases, if a dispute is not resolved within 30 days, it is referred to the National Environmental Tribunal.

167 For example, where existing procedures are not flexible enough to address carbon market disputes and/or existing personnel do not have sufficient expertise to resolve them.

A country should consider the implications (for example, cost, efficiency, and efficacy) of granting judicial review authority to national high courts compared with establishing specialized courts to handle carbon market disputes. In a country that already has a system of subject- or sector-specific judicial bodies, the framework may refer disputes to these bodies based on their nature. For instance, branches of the judiciary focus on resolving land-based disputes, while others deal mainly with financial or commercial disputes.

- **National high courts:** Where a country's constitution guarantees certain environmental rights, national high courts should generally maintain jurisdiction over cases related to these rights. This ensures that judicial reviews of carbon market activities remain consistent with broader constitutional environmental commitments.
- **Specialized courts:** Where a country has established specialized courts, which is more likely to be the case in civil law jurisdictions, it may be appropriate for them to have dedicated jurisdiction over carbon market disputes. This would allow court personnel to develop expertise in the relevant technical complexities and may ensure more effective and consistent application of carbon market regulations.

Whatever the framework establishes as the ultimate decision-making authority, that entity's final decisions must be legally binding and enforceable. As such, the primary authority or its delegated office or agents should be able to utilize the enforcement powers and penalties set out in Section VIII of the framework to enforce the final decisions in the dispute resolution process.

**Alternative dispute resolution**

ADR mechanisms provide pathways for resolving carbon market disputes outside of traditional procedures and may be more efficient and cost-effective. These mechanisms are particularly valuable for highly technical disputes requiring specialized expertise. Diverting complainants to ADR as a preliminary step before grievances or disputes are elevated to formal review or as an alternative to judicial review can help mitigate the related costs and government capacity constraints while providing more flexible, tailored solutions for complex carbon market issues.[168] Following are three types of ADR that countries should consider:

168 Ghana's framework on international carbon markets and nonmarket approaches (2022) § 2.7.2.1, mandates, "The process for complaints and appeals will follow the independent redress mechanism established by the Carbon Market Committee..." It demonstrates how a specialized ADR procedure may be developed to resolve carbon market disputes. In this case, Ghana's Carbon Market Committee plays a role in establishing grievance procedures while maintaining MESTI's oversight authority, demonstrating how institutional responsibilities for dispute resolution can be effectively distributed.

- **Professional mediation or facilitated negotiation:** ADR through professional mediation or facilitated negotiations may be an appropriate first step to settling issues that have broad market implications.[169] A country may wish to require this type of preformal consultation to ensure that complainants (potentially including those representing multiple and/or significant individual stakeholders) have an opportunity to raise their concerns with a neutral third party.[170]
- **Community-level redress:** Community-level conflicts are more likely to arise in relation to land-based mitigation activities where special consideration may be required for traditional rights holders (including IPs and LCs). Bespoke dispute resolution procedures developed in conjunction with such traditional rights holders may be an appropriate alternative to third-party mediation or negotiation in these cases.[171] A country may wish to make traditional redress pathways available in advance of, or in lieu of, formal administrative or judicial review.
- **Arbitration:** Arbitration is a private dispute-resolution process in which a neutral arbitrator or tribunal of arbitrators issues a final and binding decision.[172] It is often employed in instances where specialized or technical expertise is required to effectively address a grievance or dispute.

Arbitration may be conducted on an institutional or *ad hoc* basis. In institutional arbitration, a recognized arbitral organization administers the case under its own procedural rules. Some arbitral institutions specialize in commercial disputes between private parties, such as the International Chamber of Commerce and the London Court of International Arbitration. Others focus primarily on disputes between investors and countries, with the World Bank Group's International Centre for Settlement of Investment Disputes (ICSID) serving as the leading forum.[173]

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169 For example, requiring a dispute to be submitted for cross-border mediation to a neutral, professional institution like the International Centre for Dispute Resolution.

170 Alternatively, a country may expressly allow or encourage courts to utilize ADR options like court-annexed mediation as a more expedient means of resolving carbon market disputes. See the previous section on judicial review for more details on the role of courts in dispute resolution.

171 Global best practices generally require carbon market frameworks, including international and independent carbon crediting standards and methodologies, to provide transparent, safe, accessible, and culturally appropriate grievance mechanisms for community members impacted by mitigation activities (Johnstone et al. 2025). Article 27 of the UNDRIP requires states to implement "fair, independent, impartial, open and transparent" processes to "recognize and adjudicate the rights of Indigenous Peoples pertaining to their lands, territories and resources," which "provide due recognition to Indigenous Peoples' laws, traditions, customs and land tenure systems" (UN 2007). For instance, Kenya's Climate Change Act, Chapter 387A, § 23H, which governs dispute resolution under Kenya's Climate Change (Carbon Markets) Regulations, relies in the first instance on the terms of the Community Development Agreement to govern dispute settlement related to land-based mitigation activities. See **box A.6** for details on Kenya's regulations.

172 Courts play a limited supportive role in arbitration, intervening only when necessary - such as to enforce arbitration agreements, appoint arbitrators, or recognize and enforce awards.

173 For disputes involving foreign complainants, in case carbon credits or market authorizations are argued to give rise to claims under bilateral investment treaties or the Energy Charter Treaty, arbitration before ICSID offers a distinct advantage over other forums: it provides a neutral venue entirely insulated from local court intervention, along with a robust treaty-based enforcement regime that simplifies domestic recognition and enforcement of international awards across multiple jurisdictions. Because ICSID is only available when certain jurisdictional requirements are met, it should be considered an optional forum alongside other arbitration mechanisms rather than a default choice.

By contrast, *ad hoc* arbitration is managed entirely by the parties and the arbitrators without the involvement of an arbitral institution. *Ad hoc* arbitration can also follow pre-established frameworks, such as the UNCITRAL Arbitration Rules. Some arbitration institutions such as ICSID can administer disputes under their own rules or under the UNCITRAL Arbitration Rules.

Institutional arbitration provides established procedural rules, professional case administration, and oversight by experienced organizations. These features generally promote smoother, more predictable proceedings than *ad hoc* arbitration, while still affording parties ample flexibility to tailor the process to their dispute. This combination of structure and adaptability makes institutional arbitration well-suited to carbon market conflicts, supporting competent and efficient resolution of these specialized matters.[174]

If the framework allows ADR mechanisms, a country should clarify instances in which ADR decisions are enforceable and outline any escalation or appeal processes. Clearly articulating the scope of authority available to ADR mechanisms versus that of formal administrative or judicial bodies is essential for informing complainants about their rights and available remedies.

### Box 7.2 Country Spotlight: Dispute Resolution Procedures



**BRAZIL**

**Title:** Law No. 15,042 of December 11, 2024: Establishes the SBCE (Lei No. 15,042 de 11 de dezembro de 2024: Institui o SBCE) (Law)[a]

**Legal instrument:** The Law was decreed by Congress and sanctioned by the President to establish the Brazilian Greenhouse Gas Emissions Trading System (SBCE), as described in **box 5.5**.

**Relevant legal framework option:** Option 1+: Utilize an existing framework for settling disputes, with additional dispute resolution authority conveyed on an executive body of the SBCE (see **Table 7.3**).

174 For example, parties may require the appointment of arbitrators with specific expertise in carbon markets or opt for expedited timelines to ensure swift resolution of time-sensitive issues.

**Description:** The Law notes that "competent federal agencies shall oversee compliance with this Law," and specifically empowers the SBCE's managing body to perform sanctioning and appellate functions. The definition of administrative infractions for breaches of the SBCE rules remains subject to additional regulatory guidance. However, it affirmatively permits specific penalties to be applied, including fines; partial or total suspension of activity, facility, or source; other restrictions of rights (only in cases of extremely serious infractions and after all administrative appeals have been exhausted); and publication, at the violator's expense, of a summary of any conviction decision in cases of repeated serious infractions.[b]

The Law also defines an administrative review process under which all infractions are required to be investigated "starting from the issuance of an infraction notice, through a sanctioning administrative process, ensuring the right to a full defense and adversarial proceedings, with a 30-day period for defense." Thereafter, administrative decisions may be appealed in the first instance to the authority that issued the decision within 20 days of the date of notification. The Law makes the SBCE's managing body responsible for ruling on first appeals. Under Brazilian law, the right to a second level of administrative appeal is also guaranteed.[c] Thus, if the SBCE's managing body does not reconsider its decision, the appeal may be submitted to its superior authority for judgment within 20 days from the date of receipt.

a. See Law No. 15,042 of December 11, 2024: https://www.in.gov.br/en/web/dou/-/lei-n-15.042-de-11-de-dezembro-de-2024-601124199.

b. The Law requires inspection and sanctioning actions to observe the rights and duties established in Law No. 13,874, of September 20, 2019 (Economic Freedom Law).

c. As provided in §1 of Article 56 of Law No. 9,784, of January 29, 1999 (Federal Administrative Procedure Law).

### Legal Framework Options

The example legal text in **Table 7.3** applies where a country has existing legal frameworks governing appeal rights and dispute resolution. **Figure 7.1** shows a decision tree for developing a legal framework for enforcement and dispute resolution.

**Table 7.3** Legal Framework Options for Defining Dispute Resolution Procedures

| OPTION 1: Utilize an existing framework for settling disputes.[175] | |
|---|---|
| Advantages | • Leverages established dispute resolution procedures that courts, lawyers, and parties already understand and can navigate efficiently<br>• Provides immediate access to proven dispute resolution mechanisms without delays for developing new specialized procedures<br>• Ensures consistency with broader legal system and constitutional principles governing administrative decision-making and due process rights<br>• Reduces implementation costs by avoiding the need to establish new tribunals, train specialized adjudicators, or create carbon-specific procedural rules |
| Disadvantages | • General dispute resolution frameworks may lack the technical expertise needed to address complex carbon market, additionality, or measurement issues<br>• Could result in lengthy court proceedings that are costly and time-consuming for market participants seeking quick resolution<br>• May create inconsistent outcomes if judges lack familiarity with carbon crediting standards, methodologies, and international best practices<br>• Existing procedures may not accommodate unique aspects of mitigation activities, such as community consultation requirements or international arbitration needs |
| Example legal text | **Section VII. Enforcement and Dispute Resolution**<br>. . .<br>**B. Dispute resolution**<br>1. Any dispute arising in relation to the Administrative Authority's administration and enforcement of [country]'s carbon market activity shall be resolved in accordance with the procedures described in [insert relevant statute(s)].[176] |

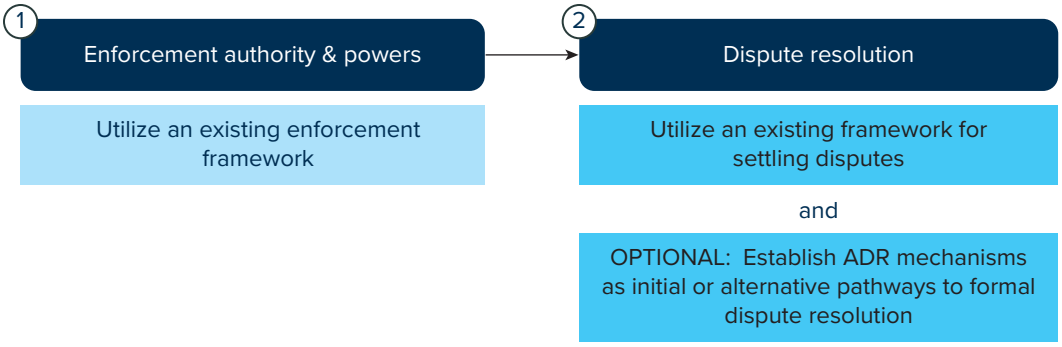
175 This option is most likely to be appropriate in instances where an existing entity is designated as the authority in Section II.A of the framework, as an existing entity is more likely to have dispute resolution procedures defined under a current legal framework or an overarching statute governing the procedures related to executive enforcement. For example, Kenya's Climate Change (Carbon Markets) Regulations, 2024 (Legal Notice 84 of 2024) states: "Any dispute arising under these Regulations shall be resolved in the manner provided under section 23H of the [Climate Change] Act" (§ 31).

176 Depending on the approved sectors and activities defined in Section III.A of the framework, there may be multiple relevant existing regulatory frameworks to reference for dispute resolution procedures. In such cases, it may be necessary to explicitly reference the legislative or regulatory framework applicable to different types of disputes. Alternatively, if referencing multiple existing dispute resolution procedures is too administratively complex - or if that complexity confuses market about how to raise and resolve grievances - it may be necessary to specify the processes for dispute resolution in the overarching carbon market framework.

| OPTION 2: Establish ADR mechanisms as initial or alternative pathways to formal dispute resolution. | |
|---|---|
| Advantages | • Provides faster, more cost-effective resolution compared to formal court proceedings, reducing barriers for smaller and less well-resourced carbon market participants<br>• Allows use of specialized mediators and arbitrators with technical expertise in carbon markets, environmental law, and community engagement<br>• Offers flexible procedures that can accommodate cultural practices, community-led processes, and free, prior, and informed consent (FPIC) requirements<br>• Creates, in most cases, confidential resolution processes that may preserve business relationships and avoid public disclosure of commercially sensitive information |
| Disadvantages | • May lack binding enforcement power if not expressly granted in legal framework, compared to court judgments, potentially requiring subsequent legal action to implement decisions<br>• Risks leading to inconsistent legal or interpretive outcomes, as alternative dispute resolution (ADR) typically does not produce publicly available, authoritative decisions - whether in the form of binding precedent in common law systems or coherent, persuasive jurisprudence in civil law systems<br>• Confidentiality in some ADR mechanisms can reduce public trust |
| Example legal text | **Section VIII. Enforcement and Dispute Resolution**<br>. . .<br>**B. Dispute resolution**<br>2. When submitting a grievance to the Administrative Authority [or its designated office[r]] pursuant to Section [VIII.B.1], the complainant may elect to refer the matter to [insert ADR processes].<br>**{Indicative ADR processes (not exhaustive)}**<br>a. Preformal dispute consultation processes [insert relevant processes, for example, community-led dispute resolution, voluntary mediation or moderated negotiation, or structured settlement conferences].<br>b. Arbitration under [select institutional rules].<br>c. ... |

*Source:* Original for this publication.

**Figure 7.1** Decision Tree for Developing a Legal Framework for Section XVIII: Enforcement and Dispute Resolution




*Source:* Original for this publication.

## 7.3. Key Takeaways

- To the extent possible, the carbon market legal framework should leverage existing legal procedures for government enforcement actions and dispute resolution, and the application of existing procedures should align with the country's constitutional protections and legal context.





# 8 APPENDIXES

## APPENDIX A.

# Nature-Based Solutions

Nature-based solutions (NBS)[177] encompass a diverse range of mitigation activities that harness natural processes to reduce GHG emissions or enhance carbon sequestration, without which the world cannot meet the Paris Agreement goals. NBS activities offer significant potential for climate mitigation alongside cobenefits for biodiversity conservation and sustainable development, but they present unique characteristics that distinguish them from other carbon market sectors.

This appendix provides additional guidance for a country on the legal options for addressing carbon market elements that are relevant to NBS, including addressing reversals and benefit-sharing arrangements. It also covers nature-specific considerations for the legal framework topics addressed in other chapters, including land tenure and carbon rights, guidance for setting nature-based activity baselines, safeguards, and nesting.

This appendix aims to help a country unlock the climate potential of NBS while ensuring market integrity and promoting sustainable development outcomes. The guidance emphasizes avoiding unnecessary or burdensome requirements that could disadvantage NBS relative to other sectors.

## A.1. Carbon Rights for NBS

### Overview

NBS includes a wide range of mitigation activities, including those that reduce deforestation and enhance forest carbon stocks through afforestation and reforestation (including REDD+), no-till farming approaches, blue carbon and coastal ecosystem management, wetland management, and soil sequestration (including biochar). In general, mitigation activities that reduce emissions to or remove carbon

177 NBS was defined at the 5th United Nations Environment Assembly as "actions aimed at protecting, conserving, restoring, and sustainably managing natural or modified terrestrial, freshwater, coastal, and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits." See UNEP "Overview of Nature-Based Solutions: https://www.unep.org/topics/nature-action/nature-based-solutions/overview-nature-based-solutions.

from the atmosphere [178] and are implemented in agriculture, forestry, coastal ecosystems, or other land-use sectors, can be considered NBS. See **Box A.1** for information on two funding sources.

As previewed in **Chapter 3**, there may be additional legal and administrative barriers to establishing mitigation activities and issuing credits for NBS, since land tenure laws are highly variable across jurisdictions - down to the local level - and may be imprecisely applied and enforced.[179] Pursuant to the legal framework recommendations outlined in **Table 5.1**, a country can provide the greatest clarity by expressly defining the criteria for recognizing, owning, holding, and transferring ERR rights related to NBS activities. Any such prescriptive definitions must be grounded in domestic property and land tenure law, such as verifying the original ERR rights holder through a formal property registry search and identifying their ownership rights in the land used for the mitigation activity. Additionally, a country should evaluate the prevalence of traditional, customary, or informal land ownership structures and develop rules that balance clarity and adherence to formal property and land tenure law with the rights of these landowners. The appropriate balance will depend upon the local context and tradition.[180]

For NBS activities, ERR rights are usually vested in the owner of the land from which the ERRs originate. It follows that carbon credits are generally issued to the landowner acting as the project proponent undertaking the mitigation activity on the property. If the proponent does not own the land, it should acquire an ownership interest in the underlying ERRs that support the carbon credits.[181] To

178 Nature-based ERRs remain eligible under Article 6.2 guidance (for example, reducing emissions from deforestation is an emission reduction activity, whereas enhancement of forest carbon stocks is a removal activity). The Article 6 Technical Expert Review (TER) Team has found nature-based ITMOs consistent with Article 6.2 requirements in its reviews of countries' initial reports, and many countries are advancing cooperative approaches for NBS activities. However, the term "emissions avoidance" has created confusion. It is not formally defined under the UNFCCC or Intergovernmental Panel on Climate Change (IPCC), yet it has been used colloquially in the VCM, sometimes as a synonym for "emissions reductions" or to describe NBS that "*reduce emissions* from deforestation." This imprecise terminology use has led some stakeholders to incorrectly believe that nature-based activities are ineligible under Article 6.2. At the 2024 intersessional negotiations in Bonn, the Subsidiary Body for Scientific and Technological Advice deferred debate on the eligibility of emissions avoidance until 2028, leaving "avoidance" activities ineligible in the interim. To avoid confusion, a country should use defined terms, such as "emission reductions" and "removals" when describing nature-based activities, rather than the ambiguous term "avoidance" (UNFCCC 2025f).

179 For example, many jurisdictions struggle with inaccurate real property records and conflicting claims to land. As noted in **Chapter 5.1**, it is common for jurisdictions to memorialize land tenure rights in a legal instrument, such as a deed, title, or license, which is registered with the relevant government agency, whether a local recorder of deeds or a national property registry. Yet, these records may be outdated, incomplete, or inconsistent, leading to confusion and conflict over true ownership of a given parcel. Moreover, many traditional land holders (predominantly Indigenous communities) do not have formally registered rights to their lands, which can significantly disadvantage them when it comes to recognizing ERR rights and resulting benefits from mitigation activities.

180 To the extent possible under domestic legal processes, it may also be helpful for a country to build into its carbon market frameworks procedures for resolving land tenure uncertainty or disputes related to mitigation activities. Formalizing such procedures and systematically enforcing them can help to mitigate future disputes and allegations of appropriation in respect of nature-based mitigation activities.

181 See **Chapter 5.2** for additional details on ownership rights to carbon credits.

make its carbon market framework clearer, a country might specifically state that if a project proponent appropriately acquires land rights under a legal tenure arrangement, they can also receive any related rights attached to the land (including ERR rights) during their ownership tenure.[182]

For a jurisdictional-scale program that involves solely state-owned land, or where ERR rights are assigned to a country in the first instance, the country should automatically possess the ERR rights underpinning the resulting carbon credits. In such cases, it will be necessary to ensure that the primary authority has ownership of the ERR rights. For example, if the Ministry of Forestry is the participant in the jurisdictional REDD+ crediting program, the ERR rights should be assigned in the first instance, or transferred to, that ministry in order for it to claim full rights and title to the carbon credits.

As seen in Australia's carbon and biodiversity program, biodiversity credits have emerged alongside NBS as an instrument to finance measurable, additional improvements in ecosystems and species, distinct from, though often ecologically linked to, carbon outcomes. For carbon market regulation, this creates both risk and opportunity: overlapping claims can undermine environmental integrity, but well-designed frameworks can enable complementary financing of climate and nature benefits. In practice, this may involve carbon credits remunerating ERRs while biodiversity credits support distinct, verifiable enhancements such as habitat quality, species recovery, or landscape connectivity beyond the carbon baseline. Countries developing carbon regulations should therefore clearly scope carbon claims, ensure transparency around cobenefits, and preserve regulatory flexibility to allow separate accounting of biodiversity outcomes where additionality and attribution are demonstrably independent.

Where a jurisdictional-scale program is established on non-state-owned land, if the primary authority is to acquire the underlying ERR rights and transfer the resulting carbon credits to third parties, it should document the assignment of these rights and the compensation payable to the original holders. For greatest clarity, a country can consider requiring specific ERR rights transfer and benefit-sharing mechanisms for stakeholders in jurisdictional programs. These mechanisms would then need to be realized via contractual arrangements between the governmental authority and the relevant stakeholders. For such arrangements to be equitably administered and have legitimacy with international carbon market participants, they should be developed collaboratively with affected stakeholders and informed by robust FPIC processes. A country should be prepared to engage in this stakeholder consultation process, which can be complex and costly when implementing jurisdictional-scale programs (Felicani-Robles 2024).

182 In a country where there are limitations on foreign ownership of lands, it may be necessary to specify alternative mechanisms for acquiring and recognizing ERR rights for project proponents not domiciled in the country. Conversely, a country may seek to leverage such foreign ownership restrictions to incentivize domestic NBS project proponents.

### Box A.1 Overview of the FCPF and the BioCarbon Fund ISFL

The World Bank manages two major programs that provide funding for nature-based solutions (NBS) and forest conservation efforts in developing countries: the Forest Carbon Partnership Facility (FCPF) and the BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL). Following is an overview of both initiatives:

- **FCPF:** The FCPF is a global partnership of countries, businesses, civil society, and Indigenous Peoples (IPs) organizations focused on Reducing Emissions from Deforestation and Forest Degradation (REDD+). It currently supports 47 developing countries across Africa, Asia, Latin America, and the Caribbean, with 17 public and private donors making contributions and commitments totaling US$1.3 billion. The FCPF has two funding instruments: the FCPF Readiness Fund, which supports policy and technical preparations for REDD+ implementation, and the FCPF Carbon Fund, which provides results-based payments for verified emission reductions or removals (ERRs) through an emission reduction purchase agreement (ERPA).[a] The majority of payments through the Carbon Fund flow through Tranche B. Verified emission reductions (ERs) under Tranche B have restrictions preventing their use for sale or compliance purposes and are retransferred to the host country for use against its Nationally Determined Contribution (NDC). Under Tranche A, the verified ERs are transferred to public, private, and nonprofit fund participants who may use the credits as they wish (Granziera et al. 2021).[b]
- **BioCarbon Fund ISFL:** The BioCarbon Fund ISFL is a multilateral fund managed by the World Bank that aims to reduce emissions from the land sector, including REDD+, sustainable agriculture, and other smarter land-use practices. A key characteristic of the ISFL program is the landscape-scale implementation approach that goes beyond forest conservation to integrate climate-smart agriculture and smarter land-use planning across entire jurisdictions. This holistic approach allows the ISFL to address the complex interactions between agriculture, forestry, and rural development in an integrated manner. The ISFL currently supports programs in Colombia, Ethiopia, Indonesia, Mexico, and Zambia. It has two key funding instruments: a grant-based funding stream supporting technical assistance activities and capacity-building efforts (known as BioCFplus) and results-based payments for verified ERRs through an ERPA (known as BioCF Tranche 3).[c]

a. See: https://www.forestcarbonpartnership.org/about.
b. Also see: https://www.forestcarbonpartnership.org/meetings-1.
c. See ISFL at a Glance: https://www.biocarbonfund-isfl.org/who-we-are.

## A.2. Addressing the Risk of Reversals

### Overview

A key tenet of high-integrity carbon markets is that carbon credits represent permanent ERRs. Reversals - instances where removed carbon is released back into the atmosphere as a result of either human activities or natural causes - can undermine global mitigation objectives if credits representing the reversed ERRs have already been canceled to compensate for emissions. Reversals can also jeopardize legal and transaction agreements if purchased credits no longer represent real ERs or permanent removals. A country's legal framework should both minimize the risk of reversals and establish a process to account for any such events, should they occur (**Box A.3**). While NBS mitigation activities offer significant benefits for sequestration, biodiversity, and sustainable development, they are vulnerable, in any individual instance, to reversals.

There are several key strategies a country can take and mandate to minimize reversal risk, such as implementing improved sustainable forest management practices to reduce vulnerability to natural disasters and human pressures; supporting a diverse portfolio of mitigation activities across different geographic regions, ecosystems, and management approaches; and requiring meaningful stakeholder engagement (see **Chapter 3.4**) to ensure strong community involvement and local ownership. Additionally, jurisdictional-scale accounting can allow for reversals or instances of nonperformance to be absorbed within the national accounting results.

Reversals should be addressed by a reversal management mechanism, which is generally managed by the carbon crediting standards body. When reversals occur, one common method for addressing the release of emissions is through a buffer pool (**Box A.2**). A buffer pool comprises a portion of total ERRs that are set aside from the verified volume of carbon credits that would otherwise be issued to a project proponent to cover an activity's reversal risks. The ERRs held in the buffer pool cannot be traded or transferred during the mitigation activity's crediting period. If reversals occur, the buffer ERRs are canceled in an amount equal to the reversal to compensate for the lost carbon due to the reversal. By canceling buffer ERRs, the integrity of the carbon credits issued to that project proponent is maintained. Countries should consider the benefits of a buffer pool when selecting approved carbon crediting standards and related methodologies under

the carbon market framework.[183] While buffer pools reduce the number of carbon credits initially issued to project proponents, they significantly enhance the integrity of the issued credits by providing protection against potential reversals. This mechanism facilitates carbon finance for NBS by safeguarding buyers from reversal risks while simultaneously maintaining the environmental integrity of the issued credits, thereby increasing market confidence and demand for NBS activities.

A country should carefully consider how reversal management mechanisms interact with NDC accounting under Article 6.2. Buffer ERRs typically do not receive LoAs and are therefore not subject to corresponding adjustments in NDC accounting. If a reversal occurs and buffer ERRs are canceled to compensate, this replacement of authorized units with nonauthorized buffer units generally does not create accounting issues. However, large-scale reversals that exceed available buffer ERRs could appear in the host country's NDC accounting, requiring the country to compensate for these emissions from other sectors. In the large-scale reversal scenario, the project or program must address the reversal through its own reversal management mechanism, while the host country must simultaneously account for it in its national emissions accounting and NDC reporting. This results in compensating for the reversal event twice - through the reversal management mechanism and national emissions accounting. A country should assess these overlapping accountability structures when designing its carbon market legal framework and consider establishing clear protocols for how project-level reversal obligations align with national-level NDC accounting requirements.

### Box A.2 Buffer Pool in Practice: FCPF Buffer Guidelines

The Forest Carbon Partnership Facility (FCPF) Buffer Guidelines establish a dual-buffer system to address Reducing Emissions from Deforestation and Forest Degradation (REDD+) emission reduction or removal (ERR) risks through the following two reserve accounts managed by a designated buffer manager:

183 A country should consider each carbon crediting standard's unique buffer pool requirements when deciding on approved standards. For example, Gold Standard requires all forestry activities to contribute 20 percent of their ERRs to the buffer pool, which remains there even after the crediting period ends. VCS requires project-specific contributions to a global buffer pool based on the mitigation activity's individual reversal risk as calculated by environmental, economic, and political factors, and ERRs may be released from the pool and issued if a mitigation activity can demonstrate an improved risk rating in a subsequent verification period. TREES assumes an initial 25 percent risk rating and buffer pool contribution for all mitigation activities, which can be lowered based on mitigating factors, and cancels all buffer contents when a mitigation activity leaves the program (ART 2021; Gold Standard 2025; Verra 2024).

- The **uncertainty buffer** addresses overestimation risk by setting aside a percentage of reported ERRs based on measurement uncertainty levels.
- The **pooled reversal buffer** provides insurance against large-scale carbon losses by requiring programs to contribute 10–40 percent of reported ERRs to a shared pool, with rates determined by assessing stakeholder support, institutional capacity, policy effectiveness, and natural disturbance vulnerability.

Buffer requirements adjust dynamically as programs improve monitoring capabilities or risk profiles change. Programs can release buffer credits by demonstrating reduced uncertainty through enhanced measurement or lower reversal risks through improved governance. When reversals occur, ERRs are canceled first from the affected program's own contributions, then from the broader pool. Strict replenishment requirements prioritize buffer restoration over future transfers, ensuring environmental integrity while incentivizing continuous improvement (World Bank 2025a).

An emerging alternative or addition to the use of a buffer pool as a reversal management mechanism is the use of insurance products to address reversals.[184] Instead of ERRs being held back in a buffer pool, project proponents, investors, or buyers would purchase coverage for reversal events. These insurance products are priced according to specific mitigation activity contexts to reflect accurate reversal risks. Nevertheless, while more credits are issued to project proponents in comparison to a buffer pool approach, insurance products are nascent, and pricing can be challenging for many market participants. In addition, insurance products often offer financial payouts rather than replacement credits, which can be problematic for buyers in compliance markets. Further work is being undertaken to create a long-term institutional structure, such as an endowed trust, to facilitate the operational aspects of managing buffer systems over long periods of time. In combination, the system-wide risk management approach to addressing reversals and ensuring the durability of the buffer and insurance solutions is a promising development that gives confidence to all market actors in the value of NBS in meeting the Paris Agreement goals.

184 Recent innovations in carbon insurance products include buffer depletion protection insurance policies that protect carbon crediting standards' buffer pools against depletion (see Kita Earth 2023).

## Box A.3 Country Spotlight: Addressing the Risk of Reversals

**ZAMBIA** 

**Title:** Zambia Carbon Market Framework (2025) (Framework)[a]

**Legal instrument:** The Framework was developed by the Ministry of Green Economy and Environment. It defines the key elements for Article 6 implementation, including evaluation criteria for mitigation activities, processes and rules for implementation, and registry operations. The Framework builds on the carbon market provisions in Zambia's Green Economy and Climate Act, 2024,[b] which vests regulatory authority in the Department of Green Economy and Climate Change within the Ministry.

**Relevant legal framework option:** Mandate systems to address reversal requirements through adherence with approved carbon crediting standards (see **Table A.1**).

**Description:** The Framework requires project proponents to demonstrate performance across environmental integrity and sustainable development indicators. For NBS mitigation activities, project proponents must address the risk of nonpermanence by assuring a minimum activity longevity of 40 years in accordance to the most recent version of the Verified Carbon Standard (VCS), applying a nonpermanence risk tool from select approved carbon crediting standards (Forest Carbon Partnership Facility – FCPF, VCS, or Gold Standard), applying a cap corresponding to the long-term average of carbon sequestration as required by Gold Standard, and monitoring and fully accounting for any reversals. All of the requirements must be validated by a validation and verification body (VVB) and evaluated during the authorization process.

While Zambia has established reversal requirements beyond carbon crediting standard compliance, other countries may find that the standards' requirements are sufficient to meet their priorities and risk tolerance levels.

a. See Zambia Carbon Market Framework. https://www.mgee.gov.zm/wp-content/uploads/2025/01/Zambias-Carbon-Market-Framework-with-cover.pdf.

b. See Green Economy and Climate Act, 2024. https://zambialii.org/akn/zm/act/2024/18/eng%402024-12-26?utm.

## Legal Framework Options

When developing a carbon market legal framework, a country can leverage the reversals management experience and mechanisms already embedded within established carbon crediting standards. If a country approves a domestic methodology for NBS, it will need to address reversal risk in the methodology.[185]

The legal framework option outlined in **Table A.1** allows a country to mandate reversal risk management through the use of approved carbon crediting standards and methodologies. This approach ensures robust reversal management without duplicating existing technical infrastructure, while maintaining the ability to select carbon crediting standards that align with their specific national circumstances and policy objectives.

**Table A.1** Legal Framework Option for Addressing the Risk of Reversals

| **OPTION: Mandate systems to address reversal requirements through adherence with approved carbon crediting standards.** | |
|---|---|
| Advantages | • Leverages international expertise in reversal risk management without requiring a country to develop a new, complex technical framework<br>• Provides market credibility and buyer confidence by ensuring credits have recognized permanence protections that meet international and independent carbon crediting standards<br>• Reduces government administrative burden by relying on proven methodologies and existing buffer pool, insurance mechanisms, or permanence funds |
| Disadvantages | • Limits flexibility to adapt reversal mechanisms to country-specific risks<br>• May impose inappropriate costs or requirements if international buffer pool percentages or insurance mechanisms do not align with actual local reversal risks<br>• May not effectively serve the needs of buyers in case of certain strategies (for example, insurance policies typically provide financial payouts rather than replacement credits, creating potential challenges for buyers in compliance markets) |
| Example legal text | **Section VI. Nature-Based Solutions**<br>**A. Addressing the risk of reversals**<br>1. A project proponent shall comply with specified reversal requirements mandated by the approved carbon crediting standard to address and manage reversal risk (for example, buffer pool, insurance, or permanence funds). |

*Source:* Original for this publication.

185 A country pursuing domestic carbon crediting methodologies should consider that domestic-only buffer pools are more vulnerable to large-scale reversal events than globally managed pools. Setting the appropriate buffer contribution levels is highly technical and must balance adequate risk coverage with commercial viability.

# A.3. Safeguards for NBS

### Overview

Safeguards maintain the environmental and social integrity of all carbon market activities (see **Chapter 3.4**); however, those for NBS activities are often more extensive due to their close relationship with ecosystems, land use, and local communities. NBS activities are frequently located on or near lands belonging to IPs and LCs and in ecologically sensitive areas, requiring project proponents to secure land rights (see **Appendix A.1**), manage reversal risks (see **Appendix A.2**), and mitigate potential impacts on communities and ecosystems.

For REDD+, safeguards are explicitly mandated through UNFCCC Conference of the Parties (COP) decisions. The Cancun Safeguards, adopted in 2011, provide globally recognized principles to guide REDD+ implementation, including respect for the rights and knowledge of IPs and LCs, transparent governance, conservation of natural forests and biodiversity, and full and effective participation (see **Box A.4**). A country implementing national REDD+ programs must submit reports demonstrating safeguard implementation. The Cancun Safeguards principles also serve as the foundation for VCM integrity principles.

#### Box A.4 Description of the REDD+ Cancun Safeguards

The United Nations Framework Convention on Climate Change (UNFCCC) established a set of environmental and social safeguard principles for Reducing Emissions from Deforestation and Forest Degradation (REDD+) activities to ensure the protection of human rights, ecosystems, and sustainable development. Adopted at the United Nations Climate Change Conference (COP16) in Cancun, Mexico, they are collectively referred to as the "Cancun Safeguards."

When undertaking REDD+ activities, the following Cancun Safeguards should be respected:

- Activities should align with and complement national forest programs and relevant international agreements.
- Activities should fall under transparent and effective national forest governance structures.

- The rights and knowledge of Indigenous Peoples (IPs) and local communities (LCs) should be respected, following the principles outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Relevant stakeholders, including IPs and LCs, can fully and effectively participate in REDD+ activities.
- Activities should support the conservation of natural forests and biological diversity by
    - Not converting natural forests;
    - Incentivizing the protection of natural forests and their services; and
    - Supporting environmental and social benefits, including the dependence of IPs and LCs on the forests for sustainable livelihoods.
- Activities should address the risks of reversals.
- Activities should reduce leakage.

Under the Warsaw Framework for REDD+, countries are required to adhere to these safeguards and establish a Safeguards Information System to monitor how they are being addressed and respected.

Among social safeguards, FPIC (further described in **Chapter 3.4**) and public consultations are particularly significant for NBS activities, as they often intersect with customary land use, sacred locations, and livelihoods. FPIC requires that consent be given freely, in advance of any activity, and based on full and accessible information.

Public consultations should be inclusive, transparent, and culturally appropriate, engaging all relevant stakeholders, including women and representative groups. Consultations should invite input into activities, provide clear information on processes, and identify ongoing grievance redress mechanisms. Jurisdictional-scale programs face additional complexity in implementing FPIC and consultations due to geographic scope, diverse community contexts, and the technicality of discussions. A country may address these challenges by structuring consultations to include multiple levels of implementation and ensuring adequate time and resources for meaningful engagement across multiple locations (World Bank 2021c). Securing IP and LC support reduces reversal risks and increases the likelihood of maintaining successful activities.

# A.4. Benefit-Sharing Arrangements

### Overview

As noted in **Chapter 3.4**, benefit sharing is a key supply-side integrity requirement. Community benefits from carbon crediting activities can help maintain carbon credit quality, support price premiums, and build overall market confidence.[186] Benefit sharing - the distribution of monetary and nonmonetary benefits to communities and other stakeholders involved in or affected by a mitigation activity[187] - applies across all sectors but is particularly emphasized in NBS activities. See **Box A.5** for benefit-sharing terminology clarification.

### Box A.5 Definitional Clarification: Benefit-Sharing Arrangements versus Revenue-Allocation Arrangements

This Legal Toolkit uses the following two distinct but related terms to describe how mitigation activity benefits are distributed:

- **Benefit-sharing arrangements:** This term is used when referring to nature-based solutions (NBS) activities. These describe how monetary and nonmonetary benefits from mitigation activities will be distributed among beneficiaries, including the identification of beneficiaries, types of benefits, and distribution mechanisms.
- **Revenue-allocation arrangements:** This term is used when referring to non-nature sectors. The term "revenue" includes both monetary and nonmonetary benefits. While conceptually similar to benefit sharing, the use of separate terminology reflects that the requirements and approaches for distributing benefits may differ between nature-based and other types of mitigation activities.

186 This is true across carbon crediting at all scales and under all standards, but there is often heightened scrutiny on community engagement and benefits associated with mitigation activities for which a governmental authority is issued or ultimately has the authority to transact the resulting carbon credits. Where a national or subnational government is expected to own or transfer carbon credits, it is essential that robust and transparent benefit-sharing arrangements are in place to compensate the original ERR rights holders (if the government is not the original ERR rights holder).

187 Stakeholders involved in or affected by a mitigation activity may include individuals, communities, local governments, NGOs, or corporations. These stakeholders are also considered beneficiaries of the mitigation activity.

International best practice requires participatory design of benefit-sharing arrangements governing carbon revenues to ensure that benefits from the mitigation activity are distributed in a manner responsive to stakeholder needs, interests, and preferences (**Box A.6**). Designing benefit-sharing arrangements is a localized process informed by existing domestic law, carbon crediting standard requirements, and stakeholder participation. While the specific design elements will vary considerably, a country may establish threshold criteria that all such arrangements must meet.[188]

A country may also adopt criteria regarding the types of benefit sharing available to stakeholders. Benefits associated with NBS activities can be monetary or nonmonetary. **Table A.2** provides advantages and challenges of these benefit-sharing methods, which are further elaborated in World Bank et al. 2025.

Monetary benefits can serve as a catalyst for broader nonmonetary impacts within local communities. For instance, NGOs or community-based organizations receiving direct cash payments from mitigation activities may reinvest funds in capacity building, technical training, and infrastructure development serving collective beneficiary needs.

Implementation requires NBS project proponents to incorporate learnings from FPIC processes and stakeholder engagement to achieve contextually appropriate benefit sharing. At a national policy level, a country determining which benefit-sharing options to make available should consider jurisdictional requirements, prevalent mitigation activity types and carbon crediting standards, investor preferences, and common beneficiary needs.

A country incorporating benefit-sharing requirements for NBS activities within its carbon market framework may

- Rely on those of the approved carbon crediting standards and methodologies; and/or
- Require project proponents to submit information regarding their benefit-sharing approach as part of the appropriate application process under Section VII of the carbon market legal framework.[189]

188 For instance, high-level design criteria may include: participation (that is, ensuring the design of the benefit-sharing arrangement invites input and buy-in from relevant stakeholders as partners - and not just as passive beneficiaries - through a genuinely collaborative approach); differentiation (that is, recognizing the various contributions to, and rights associated with, the emissions mitigation activity and designing the arrangement to effectuate fair distribution and, where appropriate, ongoing participation); and adaptability (that is, anticipating future market changes and embedding in the benefit-sharing framework fair, transparent, and efficient mechanisms to review and update the framework over time). For additional discussion of benefit sharing design principles, see World Bank et al. 2025.

189 As a potential third option, a country could develop additional benefit-sharing requirements tailored to national priorities and contexts. This option is covered in **Chapter 6.4** as a pathway to distribute or allocate benefits to communities or local governments. Addressing this issue outside of the NBS-focused section of the legal framework enables consistent treatment across mitigation activity types.

**Table A.2** Methods and Considerations for Benefit Distribution

| Monetary benefits | Nonmonetary benefits |
|---|---|
| Financial compensation to beneficiaries funded by mitigation activity revenues[190] (for example, direct payments from carbon credit sales) | Goods, services, or other benefits funded by mitigation activity revenues, or a direct incentive to help implement the mitigation activity (for example, technical assistance, capacity building, and in-kind investments, such as schools, medical clinics, and water distribution infrastructure) |

*Source:* Original for this publication.

## Box A.6 Country Spotlight: Promoting Equitable Benefit Sharing for Nature-Based Mitigation Activities



**KENYA**

**Title:** The Climate Change (Carbon Markets) Regulations, 2024 (Regulations)[a]

**Legal instrument:** The Regulations were developed by the Cabinet Secretary for Environment, Climate Change and Forestry under the authority conferred by sections 23A(2), 23E(9) and 23I of the Climate Change Act, as elaborated in **Box 3.7**.[b] The Regulations establish the framework for implementing mitigation activities, incentives to support Nationally Determined Contribution (NDC) achievement, and guidance on annual social contributions, which is the share of annual benefits accruing from a mitigation activity.

**Relevant legal framework option:** Mandate benefit-sharing requirements through adherence to approved carbon crediting standards and require project proponents to submit information on their benefit-sharing arrangements (see **Table A.3**).

190 **Table A.3** uses "revenue" throughout; however, the funds deployed for benefit sharing may be allocated from total income or revenue associated with the activity, or specifically from the profit derived from the activity, depending on the legal, equitable, and commercial context.

**Description:** The Regulations require project proponents of land-based mitigation activities on public or community land to create community development agreements with local communities. These agreements outline the relationships and obligations between the project proponent and the relevant community on the land where the mitigation activity is developed, and specify the annual social contribution to be directed to the community. For land-based projects, the annual social contribution must be at least 40 percent of the previous year's aggregate earnings, after subtracting the cost of doing business. The agreement must further define how the benefits will be managed and dispersed through a community project development committee. The Regulations provide a community development agreement template for use by project proponents.

a. See the Climate Change (Carbon Markets) Regulations, 2024, Legal Notice 84 of 2024: https://new.kenyalaw.org/akn/ke/act/ln/2024/84/eng@2024-06-07/source.

b. See the Climate Change (Amendment) Act, 2023 (Act No. 9 of 2023): https://new.kenyalaw.org/akn/ke/act/2016/11/eng@2023-09-15.

### Legal Framework Options

**Table A.3** provides optional benefit-sharing requirements that a country may wish to include in its carbon market framework. As with the other supply-side integrity criteria described in **Chapter 3.4**, these requirements may already apply under the NBS activity's methodology. This option indicates that project proponents must comply with the supply-side integrity elements in the relevant methodology.[191]

A country may additionally choose to require project proponents to submit details on benefit-sharing arrangements or revenue allocation arrangements during the appropriate application process. The example legal text in **Table A.3** connects NBS-specific guidance to requirements applicable to all mitigation activities (see **Chapter 6.4.**). Any requirements applied exclusively to NBS activities should not disincentivize investment in nature.

191 Given the importance of efficient and effectual benefit sharing in building trust and improving the integrity and durability of mitigation activities, a country should consider incorporating a threshold set of requirements for benefit sharing within its carbon market framework. Doing so may help mitigate real and perceived risks associated with mitigation activities and signal to market participants that the country is committed to ensuring high levels of stakeholder engagement.

**Table A.3** Legal Framework Option for Promoting Equitable Benefit Sharing for Nature-Based Mitigation Activities

| **OPTION: Mandate benefit-sharing requirements through adherence with approved carbon crediting standards and require project proponents to submit information on their benefit-sharing arrangements.** | |
|---|---|
| Advantages | • Ensures equitable distribution of carbon market benefits to local communities and stakeholders who may be affected by or contribute to mitigation activity success<br>• Leverages established international frameworks for benefit sharing without requiring a country to develop new, complex distribution mechanisms<br>• Provides transparency and country oversight through mandatory disclosure of benefit-sharing arrangements |
| Disadvantages | • Increases project development costs and administrative complexity through additional negotiation, documentation, and compliance requirements for benefit-sharing arrangements<br>• Requires institutional capacity from a country to review, evaluate, and monitor benefit-sharing arrangements across potentially numerous mitigation activities |
| Example legal text | **Section VI. Nature-Based Solutions**<br>. . .<br>**B. Benefit-sharing arrangements**<br>1. A project proponent shall comply with specified benefit-sharing requirements mandated by the approved carbon crediting standard.<br>2. In accordance with Schedule [X][192], a project proponent shall submit information on its benefit sharing or revenue allocation arrangement as part of the procedures for [nonauthorized carbon credits and] ITMO authorization. |

*Source:* Original for this publication.

192 To promote consistency across all mitigation activities, a country may develop a template document for project proponents to use as part of the application processes. This template should include the main elements of benefit-sharing arrangements, such as identified beneficiaries, type and amount of benefits, distribution methods, and details on how it was developed with beneficiaries.

# A.5. NBS Nesting

### Overview

As described in **Chapter 3.3**, nesting refers to aligning mitigation activities at different levels to support harmonization and crediting integrity. While applicable across various mitigation activities, nesting is most developed in the context of REDD+. Nesting projects within jurisdictional approaches can help REDD+ activities scale while opening a country to multiple types of carbon finance, including project-specific carbon credit transactions and market- and non-market-based results-based finance at the jurisdictional level (Natural Climate Solutions Alliance 2024).

Historically, aligning project-level baselines with national and subnational forest reference emission levels (FRELs) or forest reference levels (FRLs)[193] has been challenging. One approach requires projects to use jurisdictional methodologies and align their baselines directly with the broader FREL or FRL. Under this approach, the credits are likely to be issued directly to the jurisdiction. Another approach - sometimes called a "deduction" or "Swiss cheese" model - allows projects to use their own methodologies and generate ERRs independently, with credits issued to projects subsequently deducted from what the jurisdictional REDD+ program claims. Under either approach, the sum of all project baselines must fit within the jurisdictional baseline to maintain environmental integrity. When embedding project baselines within the jurisdictional one, site-scale projects sometimes face "haircuts" - reductions in estimated carbon credit generation potential - to ensure all project baselines within a country fit within the broader jurisdictional baseline. This challenge of misalignment has created barriers to effective nesting implementation.

Carbon crediting standards are adapting their methodologies to promote baseline alignment from project inception. For example, Verra's consolidated REDD+ methodology (VM0048) requires all projects to use jurisdictional baselines developed through government engagement, official data sources, and six-year reassessment cycles (Verra 2023). This shift toward jurisdictional baselines facilitates forest protection at scale while maximizing cooperation between private and public sector actors.

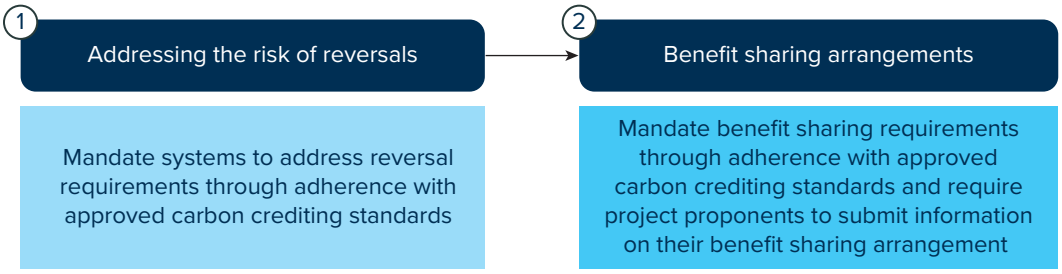
Some countries are developing comprehensive REDD+ nesting frameworks to align existing and new activities. Establishing such a framework requires significant time and institutional development. During this transition, maintaining investment flows

193 FRELs measure expected emissions from activities like deforestation and degradation. FRLs measure both expected emissions and removals from activities like afforestation, reforestation, and conservation. These reference levels are set nationally or, as an interim measure, subnationally (UNFCCC 2010).

and carbon market access for existing projects can prevent disruption of ongoing forest protection, restoration, and conservation efforts.[194]

As explained in **Chapter 3.3**, a carbon market legal framework must balance multilevel coordination of mitigation efforts with operational flexibility for current projects. A framework should enable gradual transition strategies that allow existing activities to operate while progressively integrating them into comprehensive nesting structures as jurisdictional approaches mature.

**Figure A.1** Decision Tree for Developing a Legal Framework for Section VI: NBS




*Source:* Original for this publication.

## A.6. Key Takeaways

- NBS generally do not require sector-specific legal language. Additional requirements that only apply to NBS may increase transaction costs and affect commercial viability compared to other sectors. A carbon market legal framework should take care to avoid discouraging NBS investment.
- Two topics may warrant nature-specific legal language: reversals and benefit sharing.
    - **Addressing reversals:** A country can require adherence to approved carbon crediting standards for reversal management without duplicating existing technical infrastructure.
    - **Benefit-sharing arrangements:** While equitable benefit distribution applies to all sectors, it may be more relevant for NBS activities that must compensate traditional owners of ERRs. A country should ensure consistency between benefit-sharing requirements for nature-based mitigation activities and revenue allocation requirements for other sectors to prevent regulatory gaps and conflicting obligations across different mitigation activity types (see **Chapter 6.4**).

194 The "Tropical Forest Credit Integrity Guide," developed by leading global conservation NGOs and IPs organizations, notes that there is a credible pathway for buyers to purchase REDD+ "credits originating from nesting-ready projects in jurisdictions making strong progress toward fully operational jurisdictional programs." Demonstrating this pathway to nesting requires constructive country engagement with project proponents and clear and transparent policy development processes (COICA et al. 2022).

- Additionally, legal language related to nesting may be especially relevant for a country seeking to transition to jurisdictional approaches for REDD+. While nesting is relevant across various mitigation activities, clarity regarding nesting may benefit NBS projects. Providing distinct pathways for projects to be nested within jurisdictional programs helps prevent disruption of ongoing forest restoration efforts,  attract multiple types of carbon finance, and keeps the legal and regulatory framework open to supporting cobenefits such as social engagement and biodiversity.

# APPENDIX B.

# Overview of Carbon Credit Transaction Procedures

## B.1. Overview

Carbon credits can flow through different transaction pathways depending on whether they are authorized and how they are intended to be used. This section outlines the main transaction models under the VCM and international compliance markets, including Articles 6.2 and 6.4, organized by the two primary market uses: voluntary and international compliance.

A fundamental distinction between these two transactions centers on whether a corresponding adjustment is applied. When a country in which the mitigation activity is located, also known as the "host country," does not authorize carbon credits for international transfer, it does not apply a corresponding adjustment, and they remain available for voluntary or domestic compliance use, with the host country counting the underlying ERRs toward its own NDC). In contrast, when the host country authorizes carbon credits for international transfer, it applies a corresponding adjustment, and they become ITMOs) that can be used for international compliance purposes, including NDCs (of the acquiring country) and CORSIA).

### B.1.1. Transaction Roles

Relevant actors in a carbon market transaction include acquiring countries, private sector actors, and public or private financial institutions (**Table B.1**). Investors provide crucial upfront capital for implementing mitigation activities and may purchase resulting credits through forward contracts or seek traditional investment returns. Supporting this marketplace are infrastructure actors including carbon crediting standards, VVBs, exchanges, and registries that ensure proper issuance and accounting.

A carbon market's legal framework design can shape the level and quality of participation from different market actors. A framework that provides clarity and predictability can attract greater participation from both public and private sector actors, as project proponents, buyers, and investors alike require policy clarity to make informed investment decisions.[195] Conversely, poorly designed laws and

195 See **Box ES.1** in World Bank et al. 2025

regulations may create barriers limiting market development and effectiveness. The legal architecture of the carbon market framework must balance environmental integrity with market accessibility to enable broad-based participation that can deliver meaningful climate outcomes.

**Table B.1** Relevant Actors Involved in the Generation and Transfer of Carbon Credits

| Relevant Actors Involved in The Generation and Transfer of Carbon Credits | |
|---|---|
| **HOST COUNTRY** | **MITIGATION ACTIVITY PARTICIPANTS: DEVELOPERS, IMPLEMENTERS, RIGHTS HOLDERS, and BENEFICIARIES** |
| As discussed in **Chapter 2**, a host country has responsibilities in carbon market rulemaking, policy coordination and oversight, technical advisory functions, and implementation. The country's specific role and which entities hold these responsibilities must be clearly defined in the carbon market framework. | Mitigation activities can be developed and implemented independently or collaboratively by countries,[196] private sector entities, non-governmental organizations (NGOs), Indigenous Peoples (IPs) and local communities (LCs), or other rights holders (for example, landowners). These actors may also be carbon rights holders or beneficiaries of the activity's results or revenue.<br><br>The project proponent implements the mitigation activity and produces emission reductions or removals (ERRs), which are measured, reported, and verified to request carbon credit issuance from the carbon crediting standards body. In project-based approaches, the proponent registers the mitigation activity with the applicable carbon crediting standard and maintains ongoing compliance with requirements throughout the mitigation activity's life cycle. The project proponent coordinates transactions with buyers and is responsible for levies or fees owed to the country, unless the country itself is the seller, in which case it manages these obligations directly (see **Chapter 6.3** for additional details on levies and fees). |

196 When countries engage in direct transactions with private actors in the carbon markets, they act in a commercial capacity and must therefore address considerations related to sovereign immunity, contract enforcement, and dispute resolution. Failure to fulfill contractual obligations exposes a country to liability. Private buyers and investors will gravitate toward jurisdictions where contractual obligations can be effectively enforced against the country. Insurance against sovereign performance risk under carbon market transactions is becoming more common for this reason.

| Relevant Actors Involved in The Generation and Transfer of Carbon Credits | |
|---|---|
| **BUYERS and INVESTORS** | **STANDARDS, AUDITORS, and MARKET INFRASTRUCTURE** |
| Carbon credit buyers and investors[197] include acquiring countries, corporates,[198] and public or private financial institutions.<br>The buyer pays the seller (project proponent or host country, as applicable) for carbon credits and may use them for various purposes, depending on authorization status. | Actors involved in carbon credit issuance and accounting include third-party carbon crediting standards (if applicable), accreditation bodies, validation and verification bodies (VVBs), exchanges, registries, and rating agencies.<br>The issuer of the carbon credits can be a government entity or a registry associated with an international or independent carbon crediting standard (see **Chapter 5.3**). |

*Source:* Original for this publication.

The following are not depicted in the graphics in **Sections B.2** and **B.3:**

- Project proponent interactions with carbon crediting standards, VVBs, and, for Article 6.4 activities, designated operational entities
- Benefit-sharing and revenue-allocation arrangements (see **Appendix A.4** and **Chapter 6.4).**

Transaction participants operate within established project development cycles and timelines. The following sections outline timeframes and sequencing for carbon credit generation and issuance, which inform authorization processes and policy design.

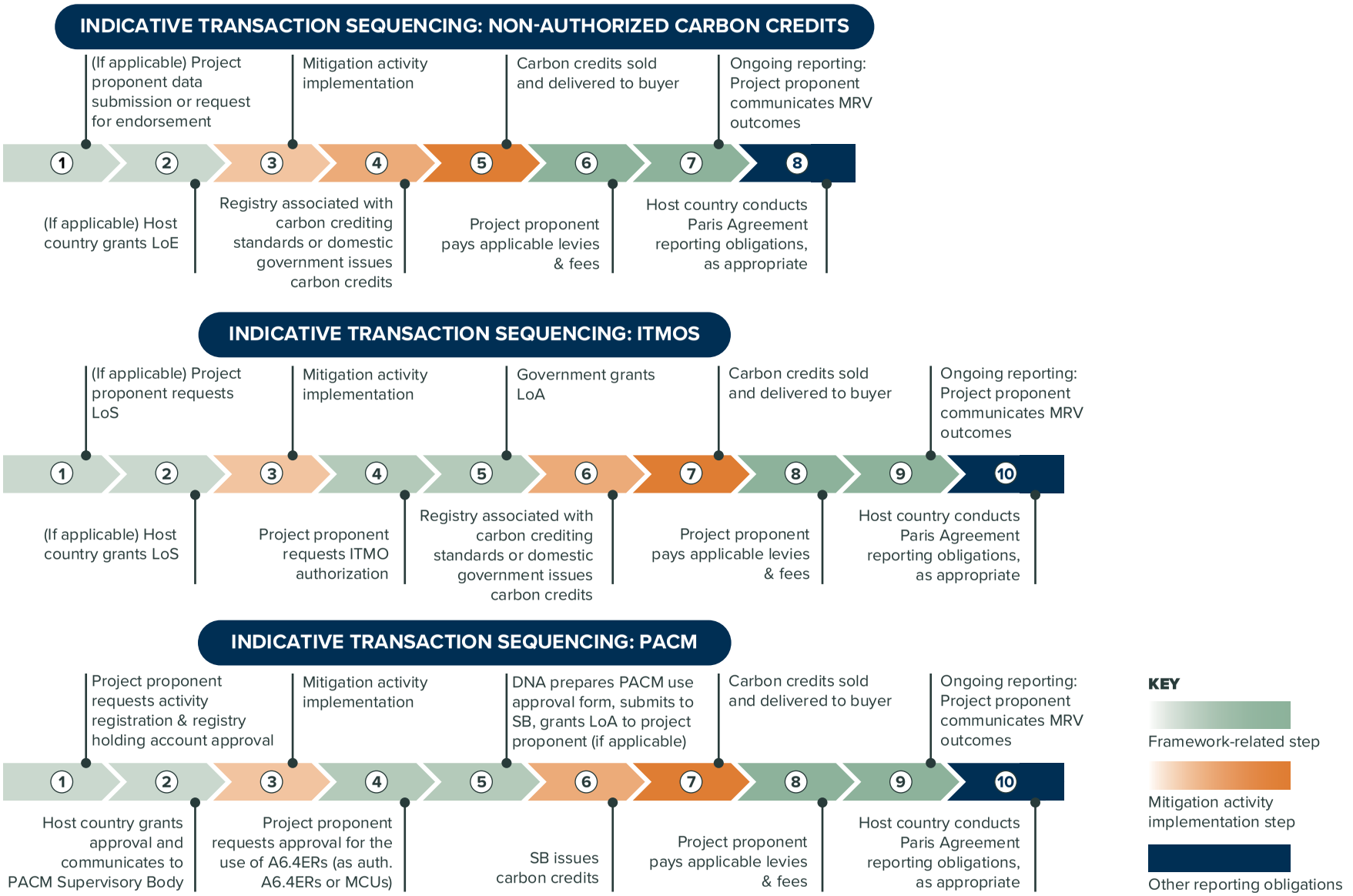
### B.1.2. Indicative Transaction Sequencing

The sequence of steps in carbon credit transactions differs based on the carbon crediting mechanism and whether the country will authorize the carbon credits for international transfer. **Figure B.1** shows the linear stages that mitigation activities may follow - from initiation under the carbon market legal framework through carbon credit sale, transfer, and reporting.

197 Investors provide capital to implement mitigation activities and generate carbon credits. They may purchase carbon credits (for example, through forward contracts) or invest in the project entity for traditional returns.

198 Depending on the intended use of the credits or desired claims, private sector buyers may be interested in credits transacted under Article 6.2, Article 6.4, other international compliance markets (for example, CORSIA), or the VCM.

**Figure B.1** Indicative Transaction Sequencing




*Source:* Original for this publication.

*Note:* A6.4ER = Article 6.4 Emission Reduction; DNA = designated national authority; ITMO = Internationally Transferred Mitigation Outcome; LoA = Letter of Authorization; LoE = Letter of Endorsement; LoS = Letter of Support; MCU = mitigation contribution unit; MRV = monitoring, reporting, and verification; PACM = Paris Agreement Crediting Mechanism; SB = Supervisory Body.

The sequencing in the table is indicative, as several of the steps can happen at different stages:

- **Carbon credit sales can occur at any stage.** Purchase agreements and buyer engagement may happen before, during, or after mitigation activity implementation. Many transactions involve prepayment for carbon credits before they are issued and delivered, which helps mobilize upfront finance for mitigation activity implementation and can support additional mitigation. A strong enabling environment and clear legal framework increases the likelihood of attracting early-stage financing.
- **Levies and fees may apply at multiple points.** While **Figure B.1** shows payment of levies and fees after carbon credit delivery, a country may choose to collect fees at other stages, such as when endorsement (if applicable) or authorization is requested.
- **Authorization timing varies by transaction type.** For carbon credits that will not be authorized as ITMOs (such as voluntary carbon credits without corresponding adjustment or MCUs), steps 4 and 5 do not apply. For ITMOs, the timing of the authorization request depends on country requirements and buyer needs. For example, it may occur before or after carbon credit issuance.

The following sections describe the transaction structures for voluntary and international compliance markets. **Figures B.2** through **B.7** illustrate these structures visually, showing the flow of finance and carbon credits between actors, as well as key country actions at each stage.

## B.2. VCM TRANSACTIONS

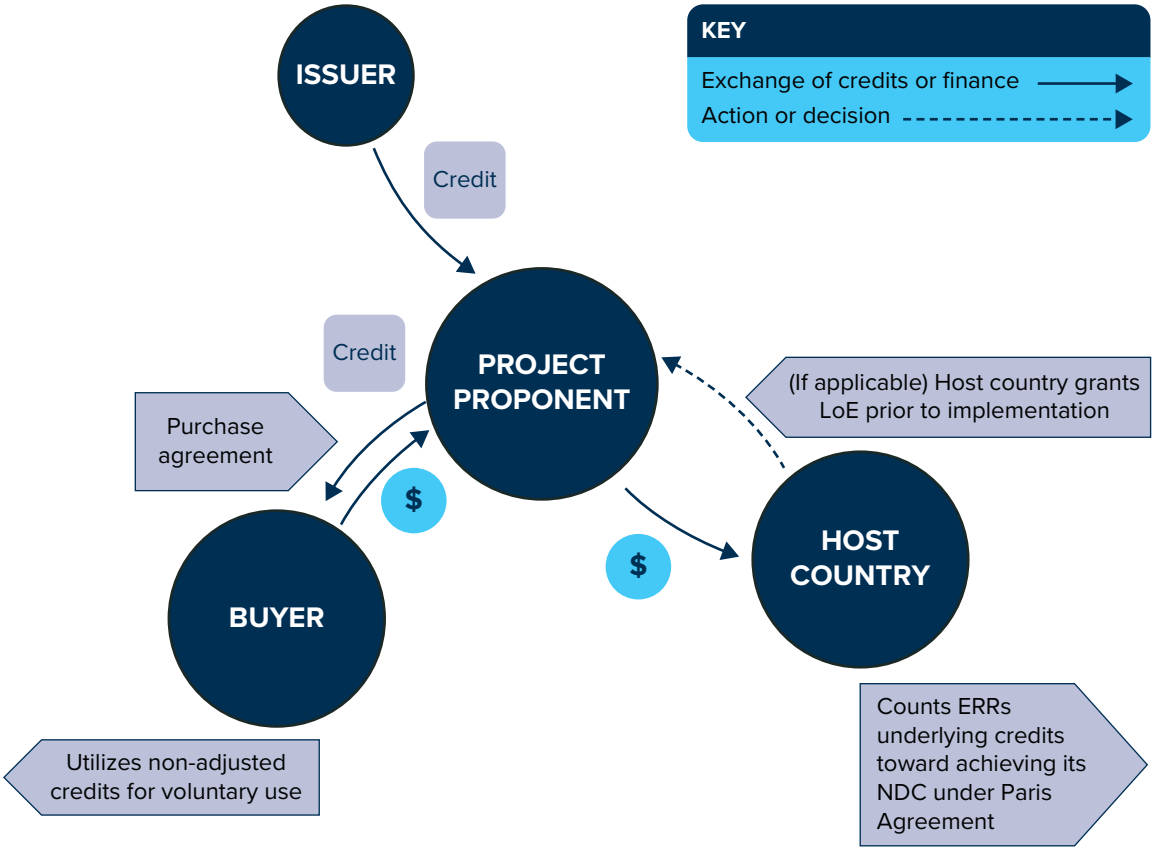
The VCM allows buyers flexibility to choose between two pathways: nonauthorized carbon credits without corresponding adjustments, where they take such credits with the understanding that the claim is subject to country use for its NDC; or authorized carbon credits with corresponding adjustments, where they gain full claim rights. This section outlines both transaction structures.

### B.2.1. VCM (Nonauthorized Carbon Credits)

Registries associated with international and independent carbon crediting standards issue credits that can be used in the VCM without triggering Article 6.2 authorization requirements.

**Figure B.2** illustrates a VCM transaction where the carbon credits operate outside of Article 6.2 and without corresponding adjustments.

**Figure B.2** **VCM Transaction Structure (without Corresponding Adjustment)**

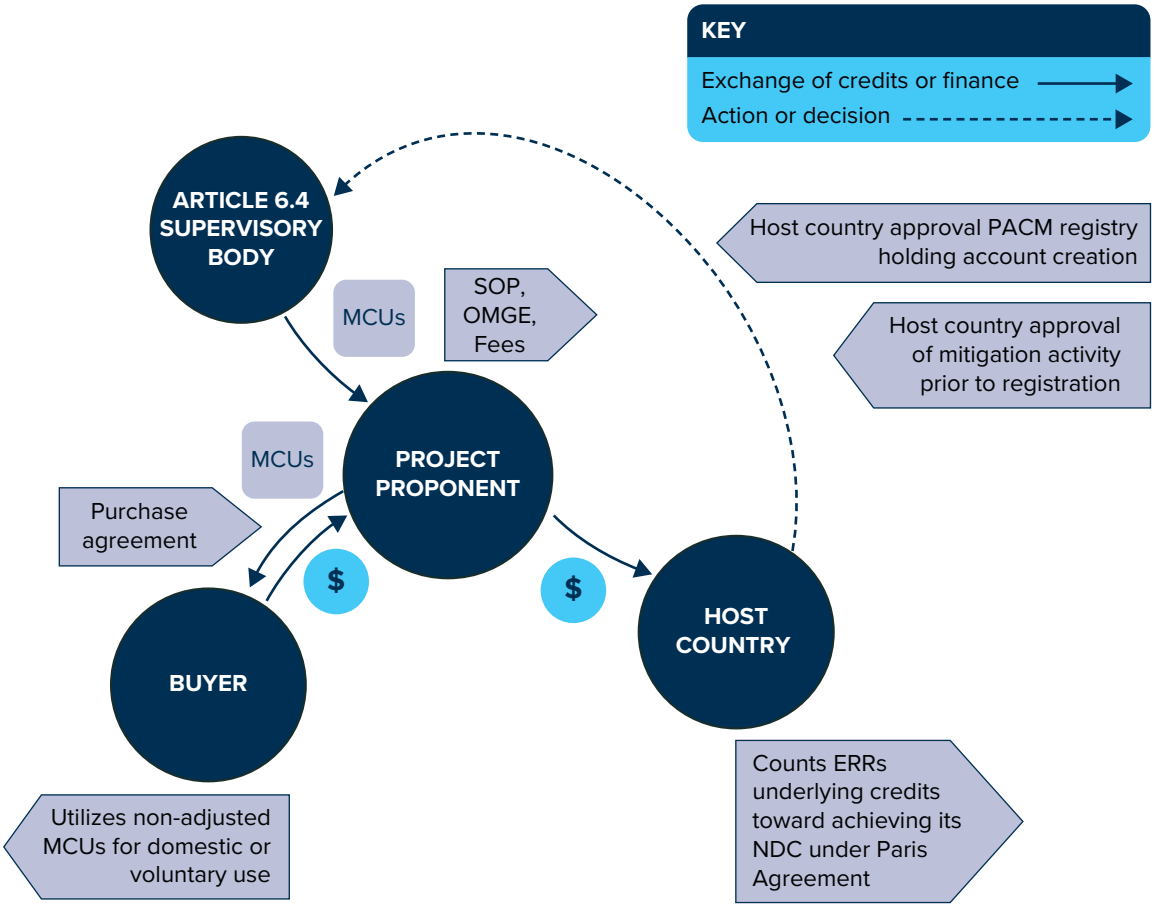



*Source:* Original for this publication.
*Note:* ERR = emission reduction or removal; NDC = Nationally Determined Contribution.

### B.2.2. MCUs under the PACM

Under the PACM, Article 6.4ERs can be used as MCUs) without seeking authorization under Article 6.2 or applying corresponding adjustments (see **Figure B.3**). In this approach, the country does not authorize the credits as ITMOs. Instead, it counts the underlying ERRs toward achieving its own NDC, while the buyer utilizes the nonadjusted MCUs for voluntary or domestic purposes. This allows a country to benefit from the United Nations–supervised crediting process while retaining the ERRs for its own national climate targets.

**Figure B.3 MCU Transaction Structure**



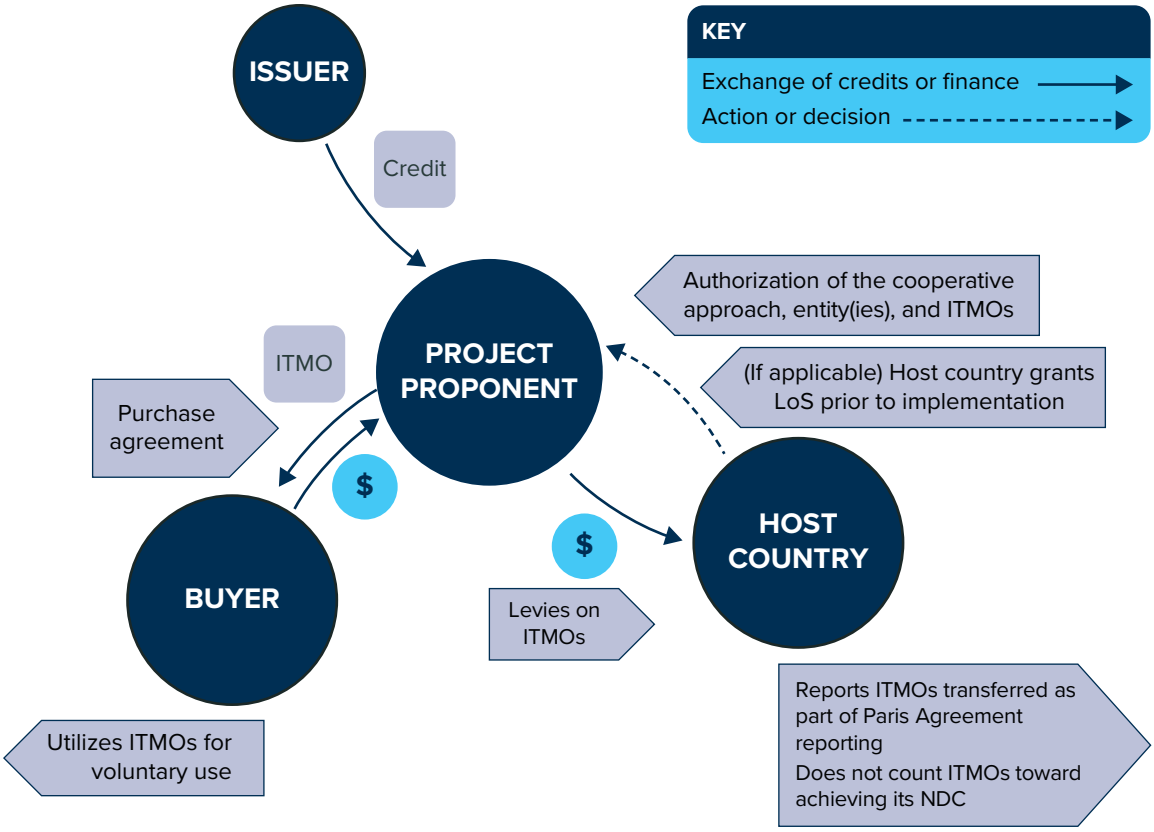

*Source:* Original for this publication.

*Note:* ERR = emission reduction or removal; MCU = mitigation contribution units; NDC = Nationally Determined Contribution; OMGE; overall mitigation in global emissions; PACM = Paris Agreement Crediting Mechanism; SOP = share of proceeds.

### B.2.3. VCM (Authorized Carbon Credits)

While the VCM can utilize nonadjusted carbon credits, some voluntary buyers seek carbon credits with corresponding adjustments to have full claim rights. When a country authorizes carbon credits as ITMOs for voluntary purposes, buyers gain exclusive ownership of the ERRs and can make full claim rights, distinguishing these transactions from nonauthorized carbon credit purchases. The transaction structure in **Figure B.4** follows the same flow as an Article 6.2 transaction.

**Figure B.4** VCM Transaction Structure (with Corresponding Adjustment)




*Source:* Original for this publication.

*Note:* ITMO = Internationally Transferred Mitigation Outcome; LoS = Letter of Support; NDC = Nationally Determined Contribution.

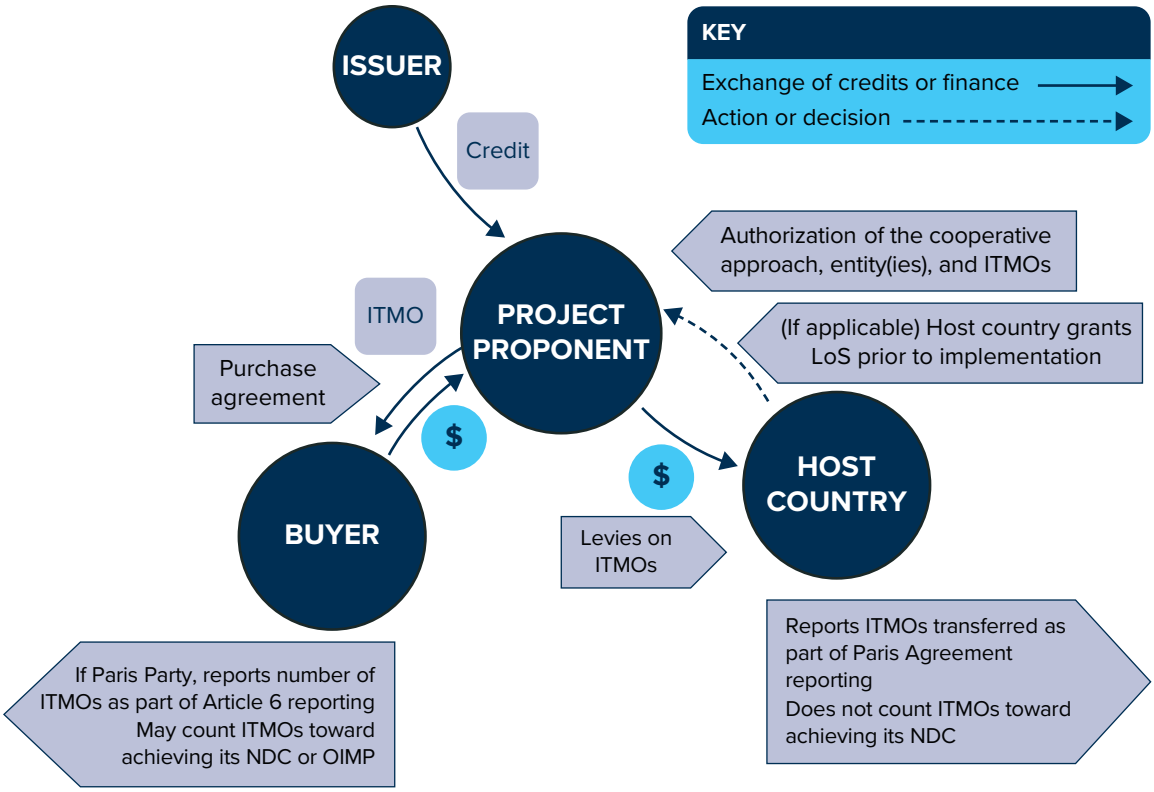
## B.3. INTERNATIONAL COMPLIANCE MARKET TRANSACTIONS

International compliance markets, including leveraging Article 6.2 to support the achievement of an acquiring country's NDC and CORSIA, require credits with corresponding adjustments that have been authorized for international transfer. When a country authorizes carbon credits and applies corresponding adjustments, the adjustment ensures that the credits are not counted by both the host country and the acquiring entity or country, maintaining environmental integrity and preventing double counting under the Paris Agreement. This pathway requires a country to implement authorization processes and adjust its own emissions accounting, but it can unlock higher-value markets and promote international cooperation on climate mitigation.

### B.3.1. Article 6.2 of the Paris Agreement

Article 6.2 provides the primary framework for moving ITMOs across borders. Carbon credits that meet Article 6.2 guidance, which can originate from any carbon crediting standard, can be authorized as ITMOs through Article 6.2, provided the host country applies the necessary corresponding adjustment. **Figure B.5** illustrates a simplified structure of an Article 6.2 transaction under the Paris Agreement, which facilitates the transfer of ITMOs to another party for use toward an acquiring country's NDC or OIMP). (See **Figure B.7** for the transaction structure for other international compliance markets, such as CORSIA.)

**Figure B.5** Article 6.2 Transaction Structure




*Source:* Original for this publication.

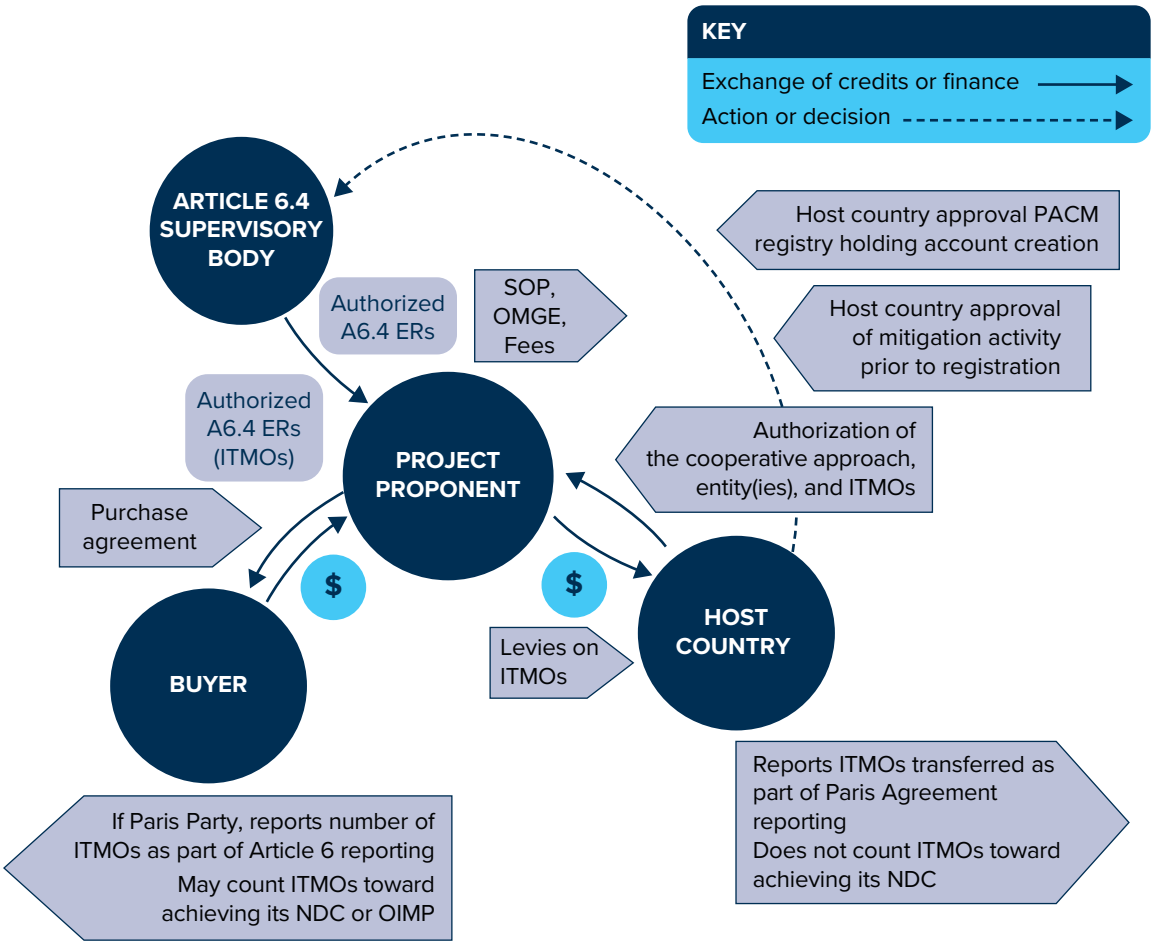
*Note:* ITMO = Internationally Transferred Mitigation Outcome; LoS = Letter of Support; NDC = Nationally Determined Contribution; OIMP = other international mitigation purposes.

### B.3.2. Authorized A6.4ERs

A6.4ERs can follow two distinct pathways - authorized as is or used as MCUs. When authorized for international transfer, A6.4ERs are transformed into ITMOs under Article 6.2 of the Paris Agreement. In this scenario, the host country applies corresponding adjustments to prevent double-counting, reports the ITMOs as part of its Paris Agreement obligations, and does not count these transferred

carbon credits toward achieving its own NDC. This transaction pathway follows the same structure as an Article 6.2 transaction (see **Figure B.5**), except that the issuer is the SB.

**Figure B.6** Authorized A6.4ER Transaction Structure



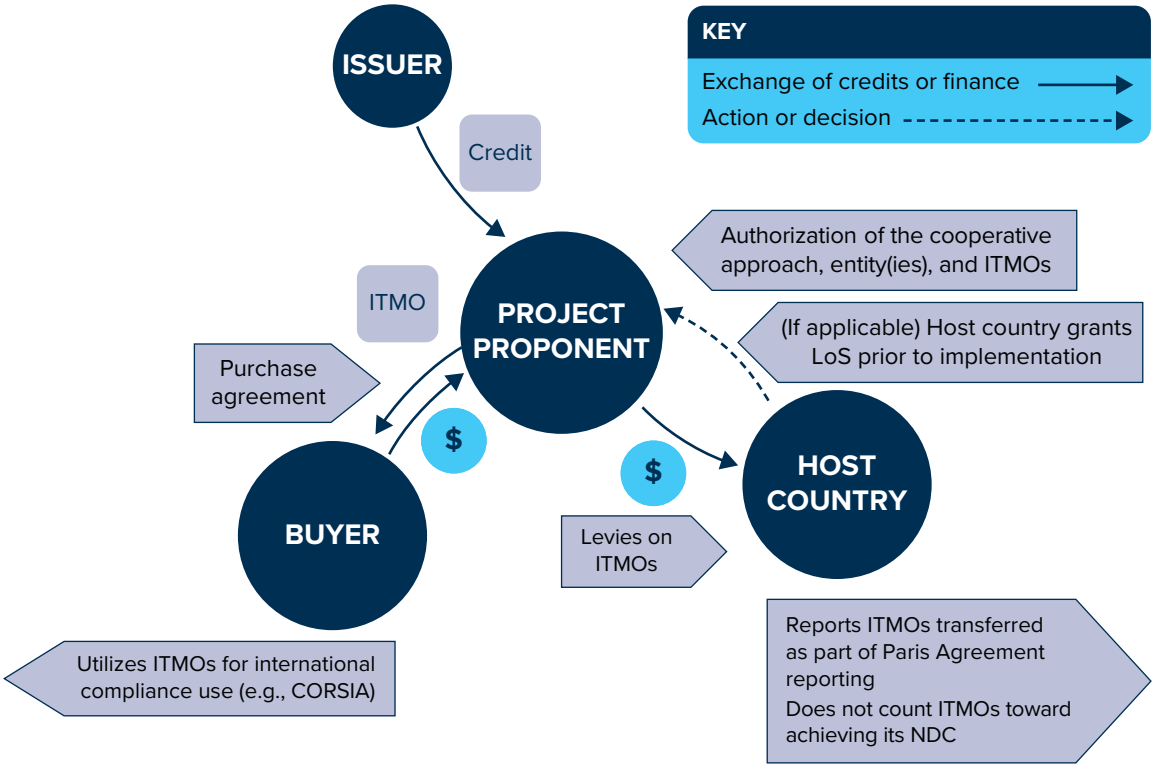

*Source:* Original for this publication.

*Note:* A6.4ER = Article 6.4 Emission Reduction; ITMO = Internationally Transferred Mitigation Outcome; LoS = Letter of Support; NDC = Nationally Determined Contribution; OIMP = other international mitigation purposes; PACM = Paris Agreement Crediting Mechanism.

### B.3.3. Other International Compliance Markets

The Paris Agreement requires that transactions for use in other international compliance markets, such as CORSIA, utilize the same Article 6.2 authorization framework and transaction structure. This is to meet CORSIA requirements, which requires assurance against double claiming of eligible carbon credits under its scheme.

**Figure B.7** International Compliance Market Transaction Structure




*Source:* Original for this publication.

*Note:* CORSIA = Carbon Offsetting and Reduction Scheme for International Aviation; ITMO = Internationally Transferred Mitigation Outcome; LoS = Letter of Support; NDC = Nationally Determined Contribution.

# APPENDIX C.

# Paris Agreement Reporting

## C.1. Paris Agreement Reporting Requirements

A country participating in Article 6 cooperative approaches must integrate carbon market activities into its Paris Agreement reporting obligations.

Under Article 13 of the Paris Agreement, Parties must submit a biennial transparency report (BTR) every two years, documenting their national GHG inventories and climate actions (UNFCCC 2018). The BTR is where Parties report on cooperative approaches and meet reporting requirements under Article 6, including information on carbon credit authorizations, ITMOs, and corresponding adjustments applied to carbon market transactions.

The Article 6 database, which is also known as the centralized accounting and reporting platform (CARP), serves as the central system for tracking ITMOs and reporting on cooperative approaches. Parties submit information to this platform using agreed electronic formats, ensuring standardized and transparent reporting across all Article 6 participation.

### C.1.1. Article 13 Requirements

Under Article 13, all Parties must submit BTRs that include the following (UNFCCC 2018):

- National GHG inventory reports using Intergovernmental Panel on Climate Change (IPCC) guidelines
- Information on progress toward implementing and achieving NDCs, including participation in cooperative approaches under Article 6 and associated carbon market activities
- Climate change impacts and adaptation measures (as appropriate)
- Financial, technology transfer, and capacity-building support provided or received (as applicable).

### C.1.2. Integration with National MRV Systems

Reporting requirements for Articles 6.2 and 6.4 may impact how a country develops monitoring, reporting, and verification (MRV) requirements for mitigation activities. Incorporating mitigation activity–level MRV requirements within the carbon market legal framework, including supplemental reporting on national priorities if needed, can support the country in collecting information for Article 6.2 reporting requirements. Transparent monitoring and reporting processes support national carbon market strategies while facilitating market confidence (World Bank et al. 2025).

A country should clearly designate reporting responsibilities among ministries and institutions involved in carbon market governance. Reporting responsibilities should align with decisions on responsible authorities and governance functions (see **Chapter 2.3**), including assigning reporting duties in initial responsibility assignments.

## C.2. Article 6.2 and 6.4 Participation Requirements

To participate in cooperative approaches under Article 6.2 and the PACM under Article 6.4, Parties must meet specific participating requirements and adhere to comprehensive reporting requirements in addition to Article 13 requirements.

### C.2.1. Article 6.2

**Participation requirements**

Article 6.2 participation criteria require countries to be a Party to the Paris Agreement; have prepared, communicated, and be maintaining an NDC; have arrangements for authorizing and tracking ITMOs; have provided the most recent national inventory report per Article 13 requirements; and ensure their participation in Article 6.2 supports NDC implementation, low-emission development, and Paris Agreement goals (UNFCCC 2021a).

**Reporting requirements**

Parties engaged in cooperative approaches are then required to adhere to specific reporting requirements as follows (UNFCCC 2021a):

- **Initial report:** The initial report is a comprehensive document requiring the participating Party to report on each cooperative approach, including demonstrating fulfillment of Article 6.2 participation requirements, communicating ITMO metrics and the method for applying corresponding adjustments, describing the cooperative approach, including duration and

expected mitigation, and describing how each cooperative approach ensures environmental integrity. The initial report can be submitted independently, no later than the time of ITMO authorization to the CARP, or in conjunction with the next BTR. An electronic template of the initial report is available on the CARP.

- **Annual information:** Each Party shall submit by April 15 of the following year annual information on the authorization of ITMOs for use toward both NDC achievement and OIMP, as well as information on first transfers and cancellations. This information should identify the participating Parties, the year the mitigation occurred, the sector and activity types, and unique identifiers. Information is submitted to the Article 6 database using an agreed electronic format and undergoes consistency checks to ensure accuracy (UNFCCC 2024b). These consistency checks verify that reported information aligns with participation requirements and accounting principles. If inconsistencies are identified, Parties may need to provide clarifications or corrections through the technical expert review (TER) process.
- **Regular information:** As an annex to the BTR, Parties are required to submit additional information on their participation in cooperative approaches. The required information includes describing how the Party meets the Article 6.2 participation requirements, updates to the initial report or previous BTRs, information on authorizations, how corresponding adjustments ensure the avoidance of double counting, and how it ensures that ITMOs used for NDC achievement or OIMP will not be further transferred, canceled, or used. Additional information is also required for each cooperative approach, including its contribution to GHG mitigation and NDC implementation, environmental integrity measures, quantification metrics, and minimization of negative environmental, economic, and social impacts.

#### Technical expert review process

Submitted information is subject to an Article 6 TER to ensure consistency. The Article 6 TER team prepares a report that may include recommendations for improving information consistency, which are publicly available on the CARP.

### C.2.2. Article 6.4

#### Participation requirements

Article 6.4 participation criteria require countries to be a Party to the Paris Agreement; have prepared, communicated, and be maintaining an NDC; have a PACM designated national authority (DNA); have indicated publicly to the SB how its participation supports sustainable development, and how it would consider PACM approval and authorization requests (UNFCCC 2021a). The PACM SB has developed standardized templates to assist countries' participation, including forms for

communicating fulfillment of the participation requirements and authorization of the use of A6.4ERs (UNFCCC 2025d; UNFCCC 2025b; UNFCCC 2025c).

**Reporting requirements**

A6.4ERs - whether authorized or as MCUs - are tracked on the PACM registry, which is connected to the Article 6.2 international registry (UNFCCC 2022). This registry integration facilitates transparent tracking of all ERRs under the PACM, regardless of authorization status.

Authorized A6.4ERs are considered ITMOs and must follow Article 6.2 reporting requirements. When a country authorizes A6.4ERs for international transfer, it must report on these transactions in its BTR, including information on the quantity authorized, corresponding adjustments applied, and the acquiring Party. MCUs, which are not authorized for international transfer, do not require corresponding adjustments and are not reported as ITMOs. However, a country may still need to account for the underlying mitigation activity in its national GHG inventory and report on its participation in the PACM as part of its broader reporting on carbon market activities.

## C.3. VCM Activities

Mitigation activities generating carbon credits for the VCM that are not authorized under Article 6.2 are not subject to Paris Agreement reporting requirements. However, if a country later authorizes VCM credits for international transfer, those become ITMOs and trigger Article 6.2 reporting obligations. A country should design its MRV framework to accommodate potential future authorization scenarios, even for activities initially developed for the VCM.

**APPENDIX D.**

# List of Laws, Acts, Decrees, and Regulations

## The Bahamas

Carbon Credit Trading Act, 2022: https://faolex.fao.org/docs/pdf/bha217808.pdf.

Climate Change and Carbon Market Initiatives Act, 2022: https://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/2022/2022-0015/2022-0015_1.pdf.

Prime Minister of the Bahamas. 2025. Emissions Reduction Initiatives and Incentives Regulations, 2025. https://laws.bahamas.gov.bs/cms/images/LEGISLATION/BILLS/2025/2025-0012/2025-0012.pdf

## Bolivia

Decreto Supremo No. 5264: http://gacetaoficialdebolivia.gob.bo/normas/verGratis_gob/280512.

Regulation for the National Mandatory Registry of Programs and/or Projects, Ministerial Resolution No. 066/2025: https://climate-laws.org/document/regulation-for-the-national-mandatory-registry-of-programs-and-or-projects-reglamento-de-funcionamiento-del-registro-nacional-obligatorio-de-programas-y-o-proyectos-renapp_c144.

## Brazil

Article 56 (§1) of Law No. 9,784, of January 29, 1999 (Federal Administrative Procedure Law): https://www.planalto.gov.br/ccivil_03/leis/l9784.htm

Law No. 13,874, of September 20, 2019 (Economic Freedom Law): https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2019/lei/l13874.htm

Law N. 15.042 of December 11, 2024. https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/lei/l15042.htm

## Costa Rica

Fondo Nacional de Financiamiento Forestal, Costa Rica Forestry Law Nº. 7575, Payment of Environmental Services. https://www.fonafifo.go.cr/en/servicios/pago-de-servicios-ambientales/##pilares.

## Côte d'Ivoire

Decree N. 2024-658 of August 1, 2024 – Establishing, Defining the Duties, Organization, and Operation of the Carbon Market Office in Côte d'Ivoire: https://environnement.gouv.ci/wp-content/uploads/2015/08/DECRET-N%C2%B0-2024-658-DU-01-AOUT-2024-PORTANT-CREATION-ATTRIBUTIONS-ORGANISATION-ET-FONCTIONNEMENT-DU-BUREAU-DU-MARCHE-CARBONE-EN-CI.pdf.

## Ecuador

Constitution of the Republic of Ecuador, Ch. 7 (Rights of Nature), Art. 71 (2008) https://pdba.georgetown.edu/Constitutions/Ecuador/english08.html.

## Ghana

Environmental Protection Act 1124. https://www.brr.gov.gh/acc/registry/docs/Environmental-Protection-Act-2025-Act-1124.pdf.

## Indonesia

Regulation of the Minister of Environment and Forestry of the Republic of Indonesia; Number 21 Of 2022 of Procedures for the Application of Carbon Economic Value (Peraturan Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia Nomor 21 Tahun 2022 Tentang Tata Laksana Penerapan Nilai Ekonomi Karbon): https://faolex.fao.org/docs/pdf/ins217195.pdf.

## International

European Court of Human Rights, No. 53600/20, Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (April 9, 2024): https://hudoc.echr.coe.int/eng#{%22itemid%22:[%22001-233206%22]}.

International Court of Justice, General List No. 187, Obligations of States in Respect of Climate Change (July 23, 2025): https://www.icj-cij.org/sites/default/files/case-related/187/187-20250723-adv-01-00-en.pdf

International Tribunal for the Law of the Sea, No. 31, Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law: Advisory Opinion (May 21, 2024): https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf.

## Kenya

Climate Change Act, Chapter 387A, § 23H: https://faolex.fao.org/docs/pdf/ken160982.pdf.

Climate Change (Amendment) Act, 2023 (Act No. 9 of 2023): https://new.kenyalaw.org/akn/ke/act/2016/11/eng@2023-09-15.

Climate Change (Carbon Markets) Regulations, 2024. Legal Notice 84 of 2024: https://new.kenyalaw.org/akn/ke/act/ln/2024/84/eng@2024-06-07#part_III__sec_13.

## Madagascar

Decree No. 2025-626 Concerning the Regulation of Access to the Forest Carbon Market: https://www.environnement.mg/wp-content/uploads/2025/06/DRMCF-portant-sur-le-Decret-2025-626-relatif-a-la-regulation-de-l-acces-au-marche-du-carbone-forestier.pdf.

Decree No. 2022-482: https://cnlegis.gov.mg/uploads/D2022-482-VF.pdf.

## Mozambique

Law N. 20/97 of October 1: https://faolex.fao.org/docs/pdf/moz15370E.pdf.

Regulations for Programs and Projects Related to Emission Reduction from Deforestation and Forest Degradation, Conservation, and Enhancement of Carbon Stocks (REDD+): https://www.fnds.gov.mz/index.php/en/documents/legislation/decreto-redd.

## Peru

Decreto Supremo N.° 010-2024-MINAM: https://cdn.www.gob.pe/uploads/document/file/7208519/6170928-decreto-supremo-010-2024-minam.pdf.

Decreto Supremo N.° [XXX]-2022-MINAM, Annexo: Disposiciones para el funcionamiento del RENAMI: https://www.gob.pe/institucion/minam/normas-legales/3308574-156-2022-minam.

Resolución Directoral N.º 00001-2025-MINAM/VMDERN/DGCCD: https://www.gob.pe/institucion/minam/normas-legales/6425892-001-2025-minam-vmdern-dgccd.

The Political Constitution of Peru, Ch. II (The Environment and the National Resources), Art. 66 (1993): https://www.congreso.gob.pe/Docs/constitucion/constitucion/index.html#p=1.

## The Philippines

Constitution of the Republic of the Philippines, Art. II, Declaration of Principles and State Policies, Sec. 16 (1987): https://www.officialgazette.gov.ph/constitutions/1987-constitution/.

## Thailand

International Carbon Credit Guideline ( ). https://www.dcce.go.th/article6/policies/.

## Uganda

National Climate Change Act, 2021: https://faolex.fao.org/docs/pdf/uga208305.pdf.

National Climate Change (Climate Change Mechanisms) Regulations, 2025 – Statutory Instruments 2025 No. 9: https://www.nema.go.ug/en/wp-content/uploads/2025/05/The-National-Climate-Change-Climate-Change-Mechanisms-Regulations-2025.pdf (paragraphs 2, 35–37).

## Zambia

Green Economy and Climate Act, 2024. https://zambialii.org/akn/zm/act/2024/18/eng%402024-12-26?utm.

## Zimbabwe

Carbon Trading (General) Regulations, 2025. Statutory Instrument 48 of 2025. https://faolex.fao.org/docs/pdf/zim238445.pdf.

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