

# The Voluntary Carbon Market Explained

Introduction

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**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Introduction

In the last five years, the voluntary carbon market (VCM) has seen an unprecedented growth in demand for carbon credits from voluntary climate change mitigation activities. This growth is driven by corporate climate commitments, consumer interest in individual and corporate climate change mitigation, investor appetite for carbon credits, and mandatory emissions disclosures and reductions. In September 2020, the Taskforce on Scaling Voluntary Carbon Markets (**TSVCM**) estimated that demand for carbon credits could further increase 15-fold by 2030 to USD50 billion.

A defining feature of the VCM is that it is not regulated by governments. Projects and programs to reduce and remove greenhouse gas (GHG) emissions are developed by private and local actors, which then are registered by private carbon standard organizations. These organizations issue carbon credits that match verified GHG emission reductions and removals which are acquired by corporations and investors, often with the goal to offset emissions.

This relative distance of the VCM from governments has resulted in a lack of understanding of the VCM by governments and public sector actors—particularly in developing countries, even though most VCM projects are in developing countries. This lack of understanding limits opportunities for the VCM to complement government action on climate change. Used strategically, VCM projects and programs can channel investment into sectors that are not

covered by nationally determined contributions or other public policy, support sustainable development as well as climate targets in host countries, and accelerate climate action while law and regulations are developed. Furthermore, the VCM cannot provide a solution to climate change on its own. Offsetting is a supplementary measure and other public and private action will be required to reduce emissions overall.

It is essential that governments and other public sector actors understand how the VCM works and how they can engage with the VCM. The purpose of **this VCM Primer** is to provide an overview of the VCM to the governments of countries that are or are likely to be hosting VCM projects. The Primer seeks to facilitate a better understanding and increased strategic engagement of governments in the VCM. The target audiences of this Primer are government decision-makers in developing countries and advisors to decision-makers.

Each chapter of the Primer explains one aspect of the VCM. The chapters can be read as standalone factsheets or be read together as part of a larger summary of the VCM.

**Chapter 1: What is the voluntary carbon market?** provides a general introduction to the VCM, how it operates, and its key benefits and limitations.

**Chapter 2: What is the role of governments in the voluntary carbon market?** describes how public policy influences the VCM and how governments can engage strategically and access VCM-based finance.

**Chapter 3: How does the voluntary carbon market relate to the Paris Agreement and Article 6?** discusses the links between the VCM and the United Nations Framework Convention on Climate Change and Paris Agreement Article 6, and how the VCM can support countries' commitments under the international climate regime.

**Chapter 4: How are voluntary carbon market greenhouse gas reductions accounted for?** details how GHG emissions are accounted for in the VCM and how this is influenced by the Paris Agreement, as well as double counting and double claiming and how governments can address double claiming in the VCM.

**Chapter 5: What is a carbon credit?** explains what a carbon credit represents, how the market for carbon credits is structured, and how credits are priced and sold.

**Chapter 6: What makes a high-quality carbon credit?** characterizes the credits that represent real and additional GHG emission reductions or removals and the projects that generate high-quality credits.

**Chapter 7: What is the role of carbon standards in the voluntary carbon market?** clarifies the role of carbon standards in general, the largest standards in the VCM, and how governments and carbon standards interact.

**Chapter 8: How are carbon credits generated?** outlines baseline-and-credit systems, the influence of government action on projects, and the VCM project cycle.

**Chapter 9: How are carbon credits used?** examines carbon offsetting, corporate climate targets, carbon neutral, and non-offset uses of carbon credits.

**Chapter 10: How are carbon and community rights considered in the voluntary carbon market?** explores how carbon rights are determined in the VCM and the rights and roles of Indigenous Peoples and local communities in developing, benefiting from, and claiming rights in VCM projects.

**Chapter 11: How are voluntary carbon market benefits shared with local communities?** defines benefit sharing and the best practices for benefit sharing arrangements.

**Chapter 12: How does the voluntary carbon market support nature-based solutions?** summarizes the role and main classes of nature-based solutions (NbS), the carbon standards that certify credits from NbS projects and the demand for NbS credits in the VCM.

**Chapter 13: How does the voluntary carbon market incorporate REDD+?** reviews the international framework of Reducing Emissions from Deforestation and Degradation (REDD+), the Warsaw Framework for REDD+ (WFR), and how REDD+ and government implementation of REDD+ and the WFR can be integrated in VCM.

**Chapter 14: How does REDD+ nesting work?** delves into what REDD+ nesting is in the context of the VCM, how nesting should be designed and implemented, and why governments engage in nesting.

### **Acknowledgements**

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*Figures and visuals: Leo Mongendre*

*Design: Sara Cottle*

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**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Chapter 1: What is the voluntary carbon market?

The voluntary carbon market (VCM) is where private individuals, corporations and other actors issue, buy and sell carbon credits outside of regulated or mandatory carbon pricing instruments. The VCM aims to mitigate climate change by creating space for private actors to finance activities that remove greenhouse gas (GHG) emissions from the atmosphere or reduce GHG emissions associated with industry, transportation, energy, buildings, agriculture, deforestation, or any other aspect of human life.

Companies, governments, non-governmental organizations, and other public and private stakeholders participate in the VCM. Companies participate in the VCM to invest in projects and programs that generate tradable GHG credits, to acquire credits to voluntarily offset GHG emissions, or to otherwise support climate change mitigation through financing activities that reduce GHG emissions or remove GHGs from the atmosphere. Companies use investment in the VCM to contribute to their climate goals, to differentiate from competitors, to build brand recognition and consumer loyalty, and to define and market “carbon neutral” products. Private project and program developers and non-government organizations (NGOs) seek to access finance—often in hard currency—to implement projects that reduce GHG emissions or enhance GHG removals. Governments attract foreign direct investments and achieve additional mitigation through VCM investments.

Governments also develop programs in the context of **Reducing Emissions from Deforestation and Degradation plus (REDD+)**—to access VCM finance to support policy interventions and governance reforms that reduce deforestation. Local communities, private landowners, subnational governments, and other stakeholders also **engage in the VCM through project and program development** and **as beneficiaries** of climate change mitigation activities.

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### How does the VCM work?

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**Each credit** in the VCM represents one ton of carbon dioxide equivalents (CO<sub>2</sub>e) that is sequestered or has not been emitted. Carbon dioxide equivalents are a measurement unit that converts the global warming potential of any GHG into the reference GHG potential of carbon dioxide.

Carbon credits in the VCM are issued, accounted for at the project, program or jurisdictional levels, and certified by **carbon standards**. Carbon standards are private organizations—typically international non-governmental organizations—that provide requirements and rules to guide project developers in the design of activities that measurably remove GHGs from the atmosphere or reduce GHG emissions. The **four standards** that contribute the greatest volumes of credits to the VCM are the Verified Carbon Standard (VCS—68.5% of credits), the Gold Standard (GS—20.1%), the Climate Action Reserve (CAR—8.3%), and the American Carbon Registry (ACR—3.1%).

There is no single or centralized VCM. Most of the supply of carbon credits is generated in developing countries and most of the demand for carbon credits is in developed countries. Credits may be sold by project developers or governments (in the case of jurisdictional programs) directly to buyers or sold to intermediaries who then market carbon credits to final users. To **generate carbon credits**, activities need to be designed, developed and certified; GHG emission reductions and removals need to be monitored, reported, and verified; and carbon credits need to be issued and transferred. In parallel, proponents that develop projects and programs need to attract and structure investment into the activities that reduce emissions. The market may be segmented by project sector or type (i.e., forestry, land use, agriculture, renewable energy, waste), by the crediting standard, by the credit quality, or by the year in which a credit was produced.

**Carbon credits** that are traded in the VCM are generated by projects, bundles of projects, programs, or public policies. VCM activities are implemented at the project level and, in the case of REDD+, at jurisdictional level. In addition, **carbon standards** allow the aggregation of projects in grouped projects or in programs of activities. A **project** is a specific activity that removes or reduces GHG emissions in a specific sector following a standard-approved methodology. Projects are defined in a geographic location over a period of time and approved, validated, monitored, and verified by a **carbon standard**.

'**Grouped projects**' or bundles of activities under the Verified Carbon Standard aggregate multiple projects engaged in the same activity into a single project, enabling smaller projects to grow in scale without seeking full new validations from carbon standards for each expansion. A program of activities (as **defined by the Clean Development Mechanism** and **applied by the Gold Standard**) is a set of multiple project activities registered as a single project activity in a defined geographic area with shared methodologies for project design and monitoring. **Jurisdictional programs**—developed in the **context of REDD+**—are government-led GHG reduction programs and account for emissions reductions and removals at the national or subnational scale.

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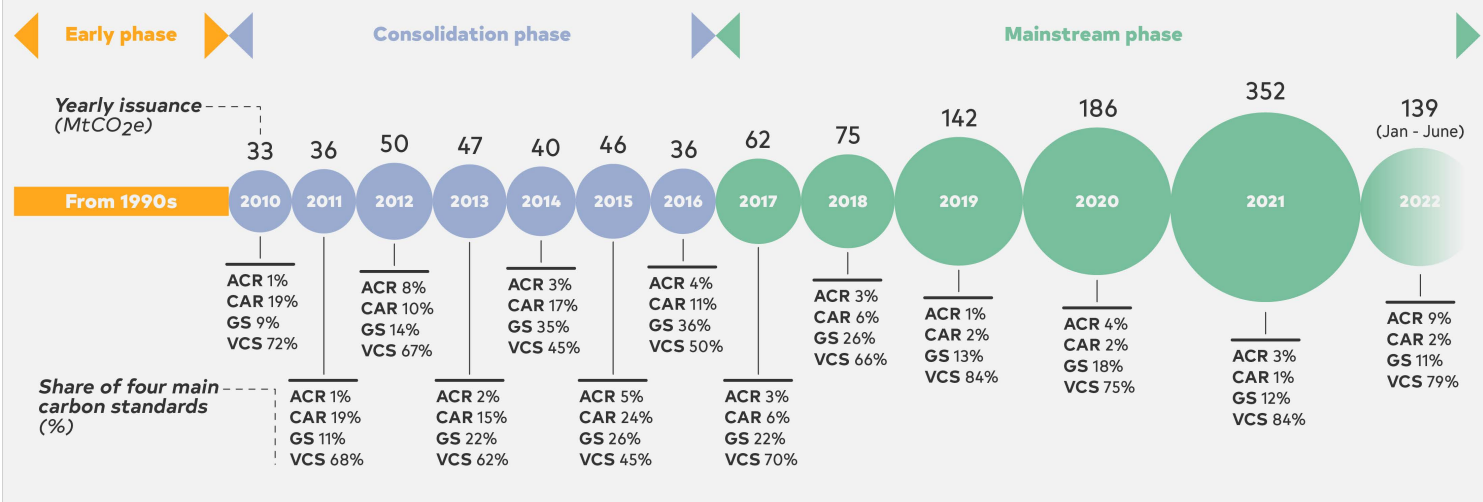
### What is the status and market volume of the VCM?

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The status of the VCM can be understood in terms of growth of the market (Figure 1.1), volumes of carbon credits transacted and retired (Figure 1.2), and geographic and emissions scope (Figure 1.3).

The idea of private companies offsetting GHG emissions with carbon credits emerged in the late 1980s. The **first known carbon offset deal** was an investment by the American energy company AES in a project run by the NGO CARE in Guatemala, in which AES provided finance for farmers to plant trees. This was followed in the mid-90s by the launch of the Environmental Resources Trust (later rebranded the American Carbon Registry), the first private registry for voluntary offsets in the United States.

**Figure 1.1** | Evolution of the Voluntary Carbon Market (ACR, CAR, GS, VCS)



Source: Climate Focus analysis of data collected for the VCM Dashboard (July 2022).

Carbon offsetting under compliance mechanisms then took off with the Kyoto Protocol’s flexible mechanisms—particularly the Clean Development Mechanism (CDM), which registered its first project in 2004. In parallel, but at a slower pace, the VCM grew. The **private carbon standards** that dominate the VCM today—the American Carbon Registry (ACR), the Climate Action Reserve (CAR), the Gold Standard (GS), and the Verified Carbon Standard—emerged in the 2000s. The evolution of the VCM and of the four leading standards is depicted in Figure 1.1.

The VCM has grown rapidly since 2016 after steady growth in the preceding decade. Although international compliance markets still cover more GHG emissions than the VCM, the VCM is growing relative to compliance markets as the demand for carbon credits by private actors outside of regulated schemes increases.

One way to show the growing demand for carbon credits in the VCM is through credit retirements. Credits are retired when they are acquired by an end user and put towards offsetting carbon emissions or other non-offsetting goals. If more credits are retired overtime, then it is clear that there is a growing demand for the type of credit. Figure 1.2 shows that retirements of VCM credits increased significantly from 2016-2020, particularly from **nature-based solutions** and renewable energy activities. The VCM is on track to set an **all-time record for market volume** in 2021.

While the issuance of carbon credits is increasing rapidly, it may not be sufficient to meet demand, especially for increasingly popular credits associated with agriculture, forestry, and other land use projects, often also called **nature-based (climate) solutions (Nbs)**.



As the VCM continues to grow, it is likely that more credits from all types of projects will be generated to meet demand and **carbon standards** will continue to develop more **robust methodologies** for different types of projects.

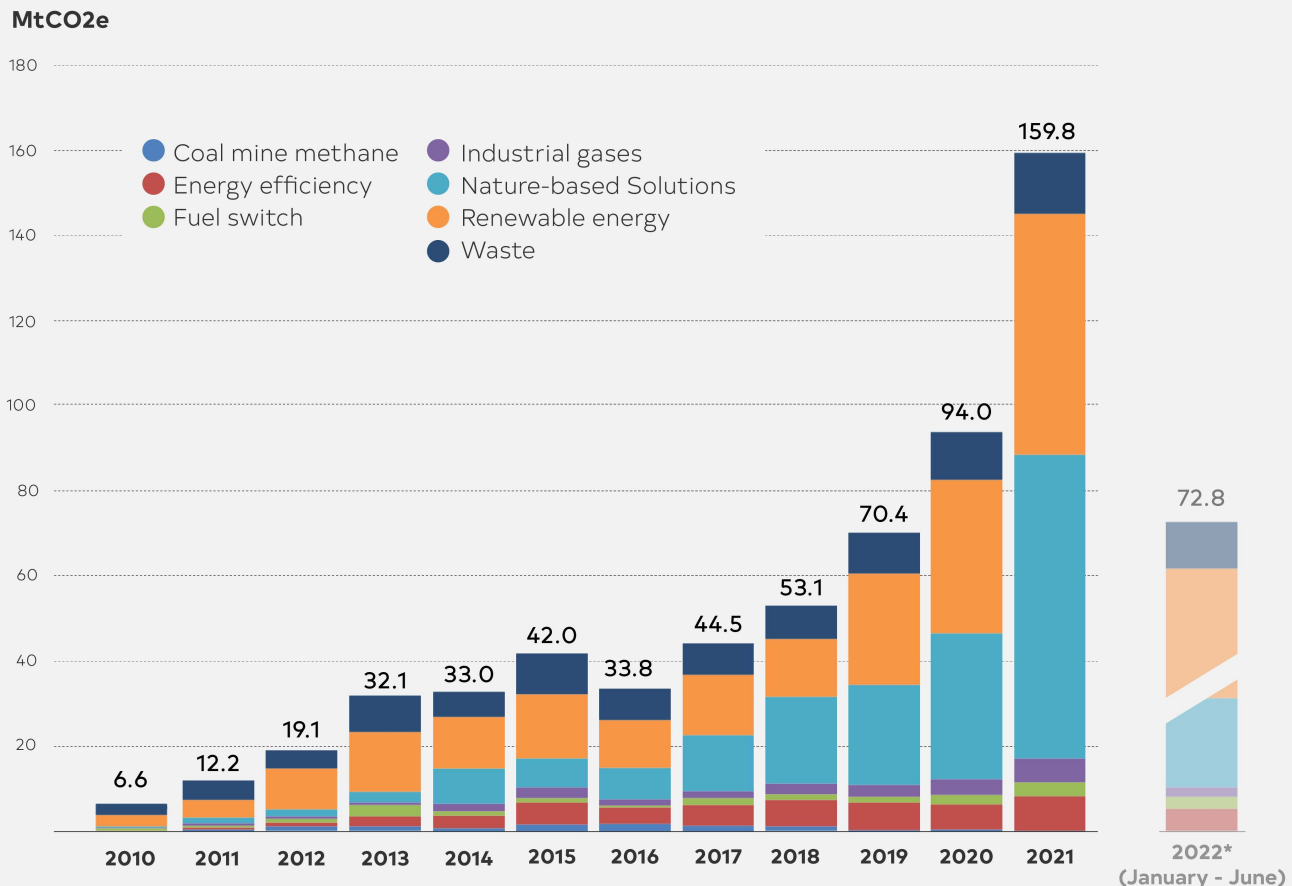
Finally, it is helpful to understand the scope of the VCM both in terms of geography and how many emissions units the VCM is currently offsetting. Figure 1.3 shows both pieces of information. Globally, across all sectors, there are 3,959 VCM projects, generating 1,303 MtCO<sub>2</sub>e of GHG emission reductions and removals, which is equivalent to the average yearly emissions produced by about 911 coal plants. Some regions are overly contributing offsets relative to emissions generated, while other regions contribute disproportionately few

offsets relative to the emissions they generate. More than half of the credits in the VCM are generated by projects in Asia, which is why the Asian region has been broken into several subregions in Figure 1.3.

## What are the benefits and limitations of the VCM?

The VCM can mobilize foreign direct investment for climate change mitigation and sustainable development that is not provided through regulation. The VCM provides financing for climate mitigation projects that are complementary to governments' efforts to mitigate climate change, and, in the case of **jurisdictional REDD+ programs**, to government mitigation initiatives.

**Figure 1.2** | Yearly volumes of retired voluntary carbon credits (VCS, GS, ACR, CAR)



Source: Climate Focus analysis of data collected for the VCM Dashboard (July 2022).

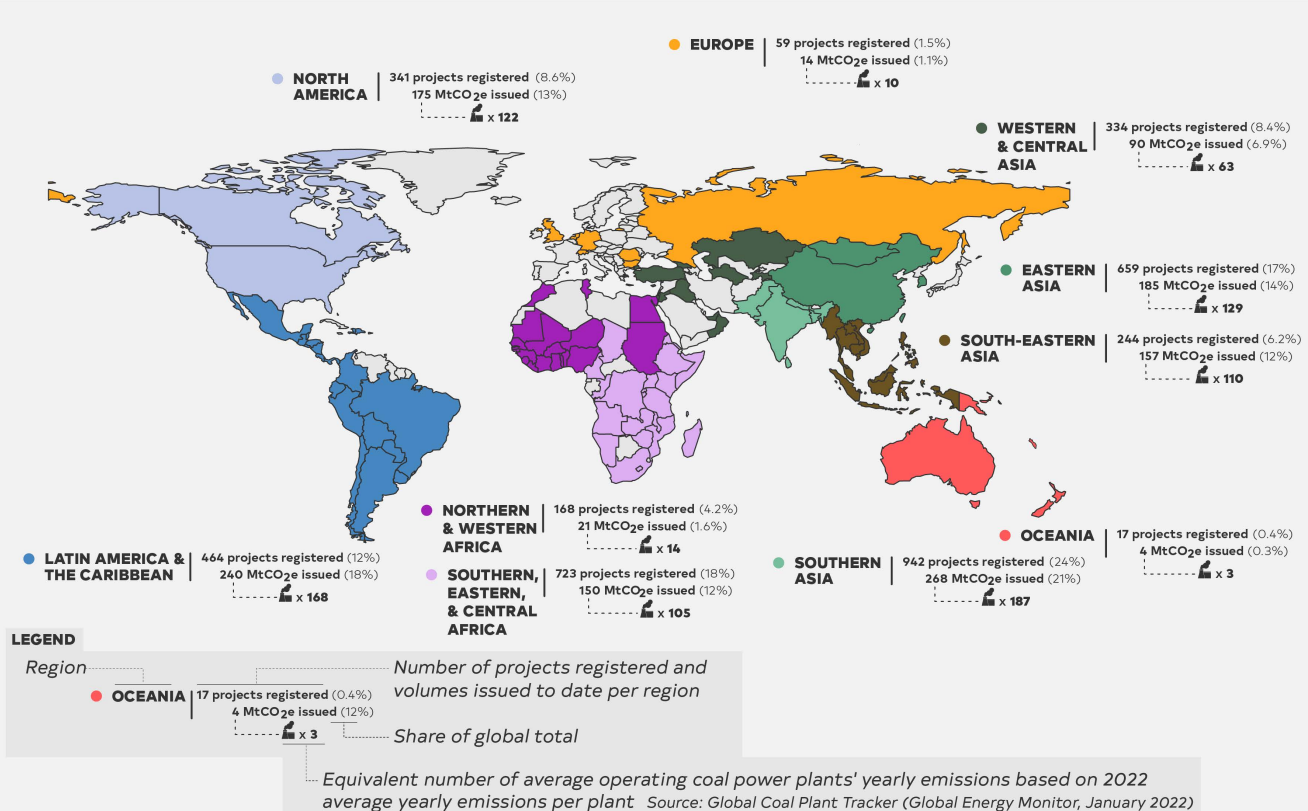
Historically, the VCM has allowed the trade of credits from projects that were not eligible to generate credits under the rules of the Kyoto Protocol Clean Development Mechanism (CDM)—mostly land-use related projects—or projects in countries which could not host CDM projects (for example, Turkey). Today, almost all developing countries are seeing increased interest in VCM projects and transactions from project developers and carbon credit buyers. If used strategically, VCM finance can free up public funds to be re-directed into climate change mitigation goals that are not sufficiently incentivized by carbon finance.

There are two notable limitations of the VCM. First, the robustness of the VCM depends on the rigor that **GHG programs and standards** apply when certifying real and additional emission reductions and removals.

The **quality of credits** varies by the conservativeness of project quantification methods, the extent to which projects address uncertainty, and the inclusion of co-benefits such as contributions to Sustainable Development Goals (SDGs). The methods applied to appropriately **measure and monitor** GHG reductions and removals are frequently revised and debated. As methodologies continue to improve, this limitation may be addressed.

The second limitation is that offsetting through the VCM is a supplementary measure that nets out emissions. It does not reduce emissions overall. As long as carbon credits are used solely to offset emissions, the VCM cannot provide a solution to climate change on its own. **Non-offsetting uses** for credits can help to shift the role of the VCM to a mechanism that drives emissions abatement.

**Figure 1.3** | VCM credits issuance and registered projects for 2002 - 2022 (VCS, GS, ACR, CAR)



The regional divisions on this map were selected to showcase the share of the global total of registrations and issuances in different regions rather than always following conventional political divisions. Jurisdictions were included in their geographical rather than political region (for example, Aruba is included in Latin America and the Caribbean rather than as part of the Netherlands). Jurisdictions that have no issued credits and have no registered projects are grey on the map. Jurisdictions with registered projects that have not yet issued credits (i.e., Angola, Bahrain) were included. Eight Gold Standard projects categorized as international—0.2% of projects globally, representing 0.17 MtCO<sub>2</sub>e or 0.01% of issued credits, and equivalent to less than one tenth of a coal plant—were excluded from the map but included in the global total for calculating percentages.

## **Further Reading**

1. Donofrio S, Maguire P, Myers K, Daley C, Lin K. *Markets in Motion: State of the Voluntary Carbon Markets 2021. Marketplace; 2021.* Forest Trends' Ecosystem Marketplace. *Voluntary Carbon and the Post-Pandemic Recovery. State of Voluntary Carbon Markets Report, Special Climate Week NYC 2020 Installment.* Forest Trends Association; 2020:16.
2. Forest Trends' Ecosystem Marketplace. *The Only Constant Is Change. State of the Voluntary Carbon Markets 2020, Second Installment Featuring Core Carbon & Additional Offset Prices, Volumes and Insights.* Forest Trends Association; 2020:23.

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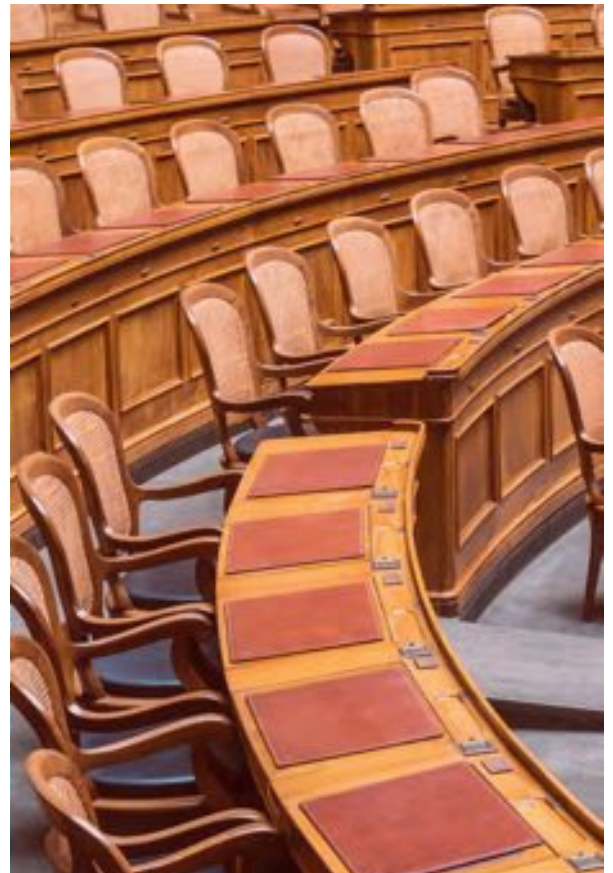
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# The Voluntary Carbon Market Explained

## Chapter 2



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About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

## Chapter 2: What is the role of governments in the VCM?

Governments engage with the voluntary carbon market (VCM) by instituting policies, regulations, and safeguards that influence VCM activities, creating enabling environments that facilitate VCM projects or programs, and sponsoring VCM projects or programs within their territories.

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### Who regulates the VCM?

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The VCM is governed **by private carbon standards** that define the rules for the generation, monitoring, and certification of greenhouse gas (GHG) reductions and removals. The private and voluntary characteristics of the VCM distinguish it from regulated carbon crediting programs like the Clean Development Mechanism (CDM), which required project developers to obtain a letter of approval from a country's Designated National Authority to register a CDM project.

The private character of the VCM makes it nimble and flexible. It allows the VCM to support climate mitigation, biodiversity protection, or sustainable development goals by providing finance for new technologies, **nature-based solutions**, and other important climate change mitigation activities that are not covered by public policy. However, VCM projects can also undermine public policies, particularly where activities disregard the rights of local communities, ignore principles of good governance, or fail to align with and complement public sector goals and regulations.

Companies engage in the VCM to create GHG emissions and reductions beyond

public requirements. However, that does not mean that governments do not have a role to play in accelerating, channeling, or regulating VCM investments. Governments can institute policies, regulations, and safeguards to guide the development of VCM projects in their territories and attract beneficial VCM finance. They can create an enabling environment for VCM investments and actively encourage investments in projects or programs that generate carbon credits. They can also directly engage in the development of projects and programs.

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### How can governments proactively and strategically engage with the VCM?

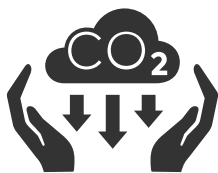
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Governments can provide regulatory and political certainty to VCM transactions by clarifying the rules of engagement for the VCM in their countries and by explicitly stating that they are ready to support project developers and investors in complying with relevant rules, regulations, and safeguards. The VCM also influences public policy and compliance markets, and in some cases voluntary carbon crediting programs directly interact with government carbon pricing schemes. The carbon pricing policies of **California, Colombia, Germany, South Africa, Thailand, or the United Kingdom** are examples of places where governments have harnessed VCM activities to achieve climate goals.

Governments can leverage VCM finance by engaging in the VCM as program regulators, program proponents or facilitators:



**As regulators**, governments can define environmental and social performance standards or safeguards that bind project developers. Governments may also clarify **carbon rights**—who holds the right to GHG emissions reductions and removals—or corporate claims with respect **to the use of carbon credits**. When governments assign and enforce land and resource rights, they help to clarify **carbon rights** and facilitate **benefit sharing** arrangements. More generally, stable and predictable policy environments reduce investment risks and help private investors align their plans with public policies. Efforts to combat corruption, promote the rule of law, recognize **the rights of Indigenous Peoples and local communities** (IPLCs), and clarify land rights and titles facilitate private investment into VCM projects. Some governments have also linked climate regulation to the VCM. In countries like **Colombia** or **South Africa**, companies can meet some obligations under national carbon taxes by acquiring carbon credits from domestic VCM projects.



**As program proponents**, governments can sponsor VCM projects and programs. In some countries, public agencies—such as national park authorities (e.g., in the case of forestry projects) or municipalities (e.g., in the

case of waste management projects) — act as project proponents and use carbon finance to support public investments. For example, in Guatemala, the national park authority acts as a proponent in the **GuateCarbon project** by granting land-use rights to communities and private organizations who carry out sustainable forest harvesting and help monitor the reserve. The **Daegu City Municipal Waste Project** in the Republic of South Korea is an example of a municipality acting as a project proponent and the **Weatherization for Low-Income Dwellings** project in the U.S. State of Maine is an example of subnational government acting as a project proponent. Governments can also support large-scale territorial programs in the form of **jurisdictional Reducing Emissions from Deforestation and Degradation Plus (REDD+) programs** that generate GHG emission reductions or removals across landscapes. If such programs are accredited under a VCM **carbon standard**, then governments can generate and sell program-level credits in the VCM. Jurisdictional programs allows governments to align public policies with REDD+ goals and access carbon finance directly. **REDD+** also offers jurisdictional crediting options that require governments to be the proponents of such programs. Governments can adopt **'nesting' rules** that allow the integration of projects and subnational programs into national REDD+ programs.



**As facilitators**, governments can attract and direct VCM finance. The way that

governments treat the VCM and engage with VCM actors influences overall confidence in the VCM, encouraging or discouraging the development of VCM projects. By encouraging the development of domestic VCM projects, governments can use the VCM to drive investment into sectors or regions that are underfinanced, such as clean cooking and agroforestry. Governments can direct financial flows from the VCM to the sectors or policy priorities where finance is needed most, such as the **land sector** or decentralized energy supply. They can do this by defining criteria for engagement and by recognizing VCM standards, methodologies or protocols for particular sectors. This, together with publication of information and data, enhances the transparency and efficiency of the market. An example of a law that seeks to mobilize the VCM is the U.S.'s "**Growing Climate Solutions Act**," which addresses obstacles to getting farmers and private forest landowners involved in VCM transactions by providing reliable information about markets, assistance to new participants, and standardized quality criteria. In addition, governments can maintain registries to track and monitor carbon credits and projects, simultaneously demonstrating their support for the VCM and increasing transparency of VCM-related activities in their countries.

Governments can also provide clarity on how VCM activities will be considered under country laws and regulations, including for **corresponding adjustments** under **Article 6 of the Paris Agreement**. While some buyers are expecting corresponding adjustments on VCM credits, the

availability of corresponding adjustments depends on VCM host countries' political will and technical abilities. Governments can reduce uncertainty by making public statements about whether, and under which circumstances, they are likely to provide corresponding adjustments for VCM transactions. These statements can be conditional upon the government's technical ability to make corresponding adjustments. Governments may also limit corresponding adjustments to more expensive mitigation options or offer corresponding adjustments on the condition that they will receive financial benefits from the sale of carbon credits in return for providing the public service of corresponding adjustments.

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GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

# The Voluntary Carbon Market Explained

**Chapter 3**





## Chapter 3: How does the voluntary carbon market link to the Paris Agreement and Article 6?

The voluntary carbon market (VCM) is governed by private standards and not by international or national regulatory bodies. However, projects and programs developed under the VCM may support countries in achieving their commitments under the Paris Agreement. To do so, VCM activities will need to comply with the Paris Agreement Article 6 rules that were finalized in November 2021.

### What is the link between the VCM and the Paris Agreement?

The generation of carbon credits under the VCM is governed by greenhouse gas (GHG) protocols, programs, and methodologies that are administered by private standards. The Paris Agreement with its governing bodies has no **jurisdiction over the VCM**. However, the VCM is not disconnected from the international climate regime: GHG emission reductions or removals achieved through VCM projects and programs are captured by national GHG inventories, and VCM activities can assist countries to meet their Nationally Determined Contributions (NDCs) under the Paris Agreement.

### What is the link between the VCM and Article 6 of the Paris Agreement?

Article 6 of the Paris Agreement provides flexibility to governments to engage in voluntary cooperation in the implementation of NDCs “to allow for higher ambition in their mitigation and

adaptation actions” (**Article 6.1 Paris Agreement**). The rules that govern such cooperation open the door to carbon market transactions under the Paris Agreement that may overlap, integrate, or compete with VCM activities. The clarification of rules for “cooperative approaches” under Paris Agreement Article 6.2 and for the “Article 6.4 mechanism” are of particular relevance to the VCM. Under Article 6.2, GHG emission reductions or removals can be transferred between countries as Internationally Transferable Mitigation Outcomes (ITMOs). A country may authorize ITMOs i) for use towards an NDC, ii) for “international mitigation purposes” other than NDC-achievement (e.g., comply with the Carbon Offsetting and Reduction Scheme for International Aviation—CORSIA, see Box 3.1), or iii) for “other purposes.” Authorization for “other purposes” is not defined, but generally understood to refer to the use of ITMOs towards corporate and other voluntary climate commitments.

**Article 6.2** implementation guidelines require “corresponding adjustments” for all authorized mitigation outcomes—that is, for all ITMOs. A corresponding adjustment is applied to balance the accounting under the Paris Agreement: an emission reduction is removed from the accounts of the selling country and added to the accounts of the buying country. Corresponding adjustments ensure that governments reporting under the Paris Agreement meet good accounting principles and that no GHG reduction or removal is accounted for twice. Figure 3.1 shows a corresponding adjustment between two countries.

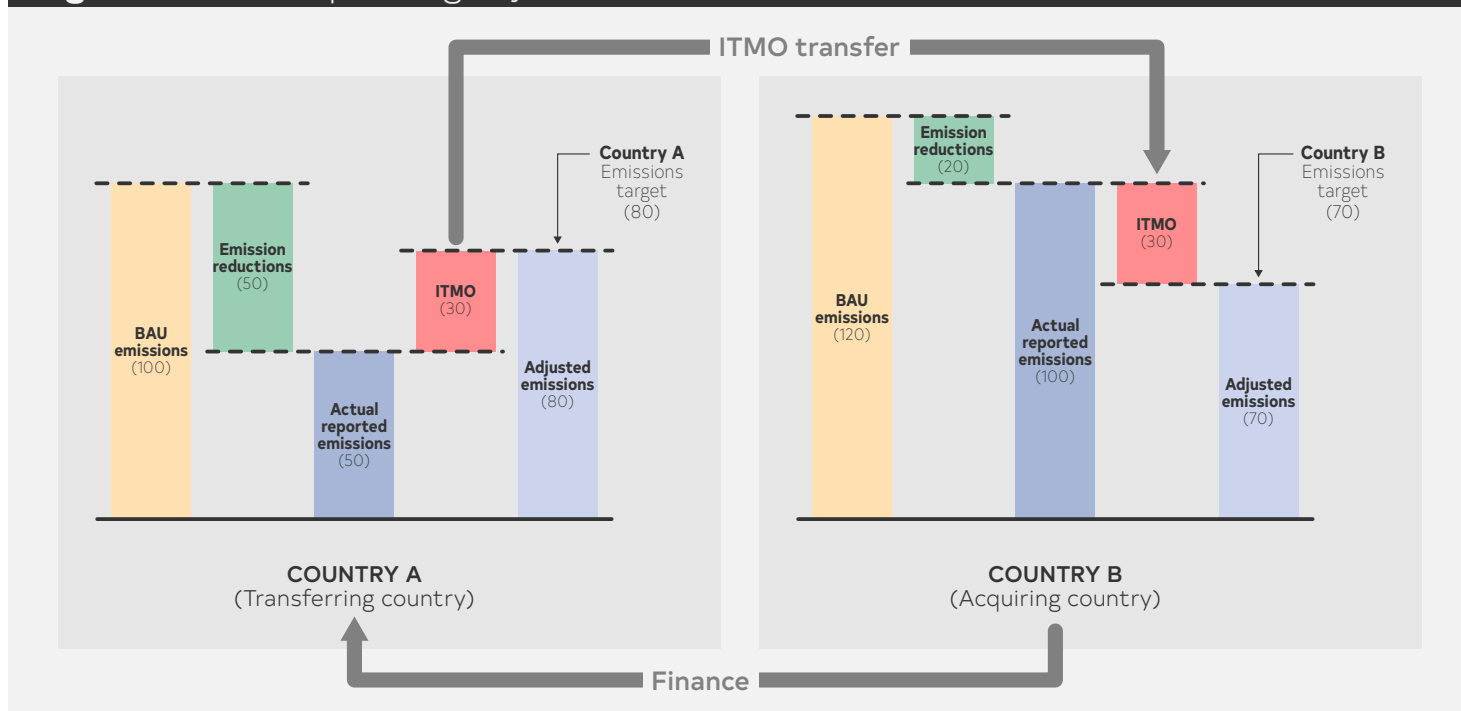
### Box 3.1: CORSIA, a special case for corresponding adjustments

The Carbon Offsetting and Reduction Scheme for International Aviation (**CORSIA**), adopted by the International Civil Aviation Organization (ICAO) in 2016, is a short-to-medium-term strategy (2021-2035) for the aviation industry to achieve carbon neutrality through offsetting while low-emission aviation technology is being scaled up. CORSIA is a **compliance mechanism** that allows the use of **VCM carbon credits** to meet compliance obligations. CORSIA covers flights from all countries that have volunteered to participate until 2027, at which point about 90% of flights will be covered, excepting only those from Least Developed Countries and Small Island Developing States. To ensure the environmental integrity of offsets used for compliance, **CORSIA requires corresponding adjustments for VCM transactions** and credits are restricted to those from GHG emission reduction or removal activities approved by the ICAO council.

**Article 6.4** defines a mechanism that can be understood as a revised, modified and ‘improved’ version of the Clean Development Mechanism (CDM). Countries have to approve Article 6.4 mechanism activities. Once GHG emission reductions and removals are certified, they generate Article 6.4 Emission Reductions (Art.6.4ERs). Similar to Article 6.2 cooperative approaches, under Article 6.4 host governments have the ability to authorize the use of Art.6.4ERs for NDC achievement, international mitigation purposes, and other purposes. Authorized Art.6.4ERs fall under the definition of ITMOs and, thus, corresponding adjustments must accompany the transfer of Art.6.4ER units.

Countries can decide to support cooperative approaches and Article 6.4 mechanism activities without authorizing (all) mitigation outcomes (Article 6.2) or Art.6.4ERs (Article 6.4) for corresponding adjustments. In that case, the resulting GHG emission reductions

**Figure 3.1** | Corresponding adjustment between two countries



and removals are counted towards the host country's NDC. Mitigation outcomes and Art.6.4ERs without authorization may be applied to results-based payment schemes, national carbon pricing systems, or VCM transactions.

VCM projects and programs can continue without any reference to and inclusion in Article 6 modalities. In the future, host countries may offer to include VCM activities in an Article 6.2 cooperative approach or approve VCM activities under Article 6.4. In that case, some of the resulting GHG emission reductions or removals may be authorized for corresponding adjustments. However, countries will meet a number of institutional and regulatory requirements before they can host or participate in Article 6 activities.

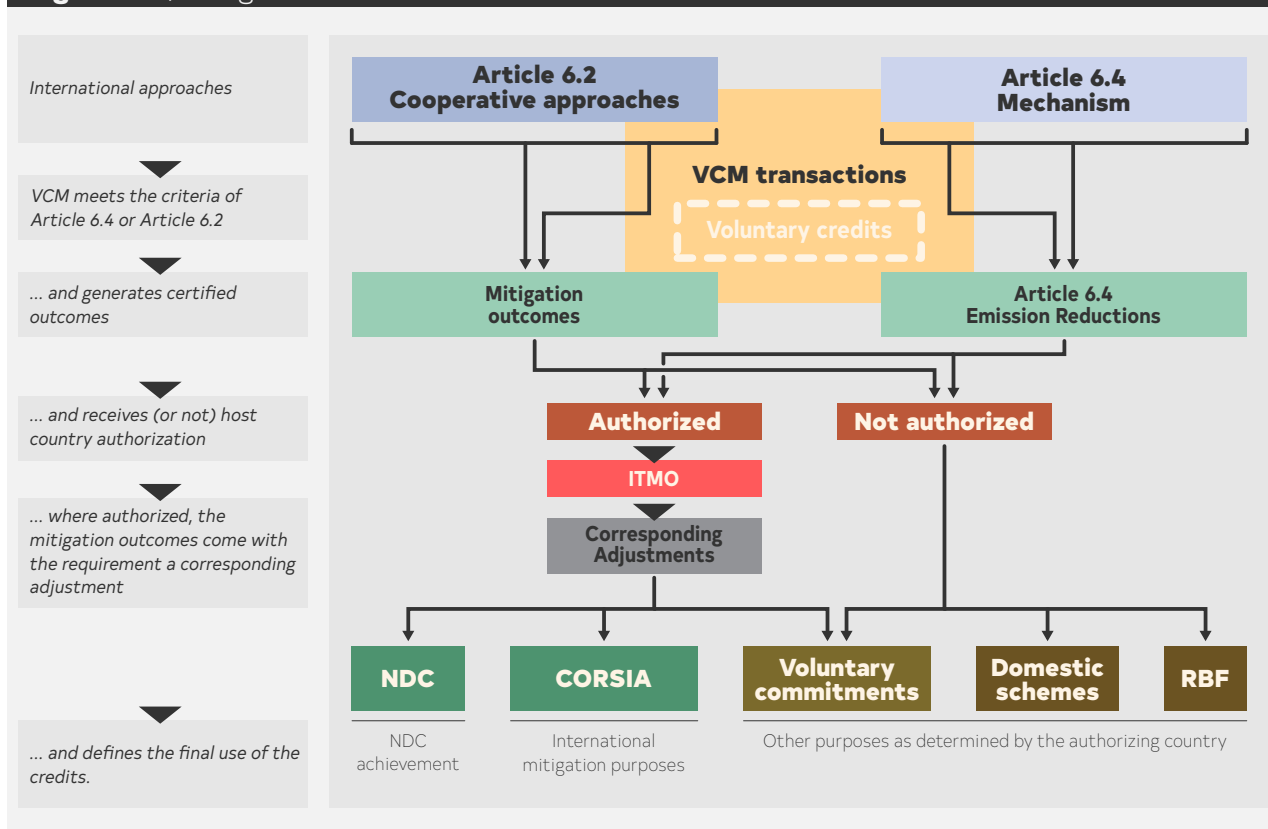
Figure 3.2 shows how VCM and Article 6 transactions work under the rules

established at COP26. Authorized transactions of mitigation outcomes under Article 6.2, Art.6.4ERs, and VCM credits may be authorized—requiring corresponding adjustments—for use toward NDCs, CORSIA compliance, and voluntary transactions. Not authorized outcomes, emission reductions, or credits do not require corresponding adjustments and may be used toward “other purposes” determined by the host country, which may include voluntary transactions, domestic schemes, and results-based finance (RBF) schemes.

### How can the VCM support achieving and exceeding Nationally Determined Contributions?

To mobilize the full mitigation potential of the VCM, it is important to establish a common understanding of when and how activities that generate carbon credits under the VCM contribute to

**Figure 3.2** | The generation and use of carbon credits after COP26



Graph modified from Perspectives Climate Research gGmbH

host countries' NDCs. How and to what extent VCM projects and programs support national climate goals depends on the type of VCM project or program, whether the project or program is in a sector that is covered by host countries' NDC targets, whether those targets are conditional or unconditional, whether the project or program is in an activity type or sector that the country is authorizing under Article 6 for corresponding adjustments, and whether the right to claim associated climate benefits is traded out of the country along with the carbon credits.

While the VCM can directly or indirectly support countries in achieving or exceeding their NDC targets, there is a fear that VCM activities may undermine the achievement of NDCs. Specifically, there is concern that the VCM could displace company abatement actions or that governments could become overly reliant on private actions and VCM credits. However, the displacement risk may be minimized when VCM activities complement government action by complying with all requirements to be authorized and backed by corresponding adjustments, by contributing to sectors covered by conditional NDC targets, or by operating in areas not covered by NDCs or public policy.

Governments can act proactively to mitigate the risk that VCM activities would undermine NDC achievement and to encourage VCM activities that are complementary to public action. They can clarify how VCM projects and programs—and Article 6 activities—complement public policies and specifically identify sectors in which VCM investments are welcome. VCM projects can also continue to attract investments while governments

establish the institutions and regulations necessary to operationalize Article 6 activities and authorize or approve projects under Article 6.2 or 6.4. Governments can clarify how they will define “other purposes,” which types of VCM activities they will authorize under Article 6 to be backed by corresponding adjustments, and which activities they will approve but not authorize under Article 6.4. Governments can encourage investments in carbon projects in priority sectors—e.g., those sectors that are not covered by the NDC—where government regulation is not expected to be sufficient to incentivize behavior change or where mitigation benefits are expected to be technically complicated or costly to achieve.

Carbon projects or programs can complement public efforts by generating carbon finance that allows countries to meet conditional NDC targets. The host country could account for the GHG emission reductions and removals from VCM activities under its conditional NDC targets. Similarly, when VCM projects or programs are developed in sectors, for activities or for types of GHGs that are not covered by NDCs, the finance from the sale of these carbon credits may be able to support host countries in achieving additional mitigation benefits. In both cases, host countries could decide to authorize VCM emission reductions and removals and back them with corresponding adjustments. However, even if there are no corresponding adjustments, in these cases, the risk that VCM activities displace public action is limited.

When VCM activities are in a sector covered by an unconditional NDC target, they directly assist host governments to achieve this target—like any other domestic, voluntary effort to reduce or

remove GHG emissions. In this case, the VCM and Article 6 activities could be integrated into public policies and used to achieve NDC targets. If there is a high number of VCM transactions channeling large amounts of finance, governments may be disincentivized from adopting additional and potentially more ambitious climate policies and NDCs that cover more sectors. This would lead to a displacement of public action. In these cases, authorizing the use of internationally-transferred VCM carbon credits for offsetting by adding corresponding adjustments would ensure environmental integrity. When **the trade of carbon credits** in the VCM is not backed by corresponding adjustments, the host country retains the right to apply the climate benefits associated with VCM projects or programs in its jurisdiction towards its NDC targets.

### **Further Reading**

1. Howard, A., & Greiner, S. (2021). *Accounting Approaches for the Voluntary Carbon Market*. *Voluntary Carbon Markets Global Dialogue*.  
[https://vcm-gd.org/wp-content/uploads/2021/10/VCM\\_Accounting-1.pdf](https://vcm-gd.org/wp-content/uploads/2021/10/VCM_Accounting-1.pdf)
2. Marcu, A. (2021). *Article 6 rule book: A post COP26 assessment*. *Roundtable on Climate Change and Sustainable Transition (ERCST)*. <https://ercst.org/post/cop26assessment/>

### **Acknowledgments**

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# The Voluntary Carbon Market Explained

## Chapter 4

**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Chapter 4: How are greenhouse gas reductions and removals accounted for in the voluntary carbon market?

Transparent and comparable greenhouse gas (GHG) accounting is essential to ensure the credibility of voluntary carbon market (VCM) activities. Robust GHG accounting follows common principles and is supported by credible and robust standards. GHG emission reductions and removals from VCM projects are accounted for at the activity level and used to meet climate (e.g., net zero or carbon neutrality) targets of companies. Governments that engage in jurisdictional programs, in particular in Reducing Emissions from Deforestation and Degradation Plus (REDD+), account for GHG emission reductions and removals associated with land use change in a certain area.

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### How do different actors account for greenhouse gas emissions?

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The sponsors and developers of VCM activities account for GHG emission reductions and removals achieved by VCM activities to generate tradable carbon credits. Corporates monitor and report their GHG emissions and account for reductions to meet mandatory or voluntary climate goals. Governments account for GHG emissions and removals to monitor progress toward the Nationally Determined Contribution (NDC) under the Paris Agreement and toward national climate change mitigation goals. In alignment with their different goals, project and program managers, corporates and governments apply different accounting approaches to track GHG emissions.



**Project and program managers account for the climate benefits at the project or program level.** They apply methodologies provided by **carbon standards** for different project types. Methodologies describe how projects and programs measure, report and verify GHG emission reductions and removals. GHG emissions, reductions, or removals from VCM projects and programs are monitored according to GHG protocols and verified by third-party auditors. Based on verification reports, VCM standards or GHG crediting program managers **issue carbon credits in VCM registries.**



**Corporates account for the GHG emissions linked to their operations.** This includes direct emissions, emissions from energy consumption, and emissions from supply chains and consumption of products globally. Corporate accounting assigns responsibility for GHG emissions based on activities and actors, rather than geographical areas. When consolidating GHG emissions accounts across corporate operations that may be jointly

owned or managed, emissions are allocated according to equity shares or assessments of financial or operational control. Corporates with climate targets account against those targets. Non-governmental organizations support these efforts by publishing harmonized GHG accounting standards (e.g. **the GHG Protocol**) or by defining and monitoring high-quality climate targets for companies (e.g. **the Science-based Target Initiative**.)



### **Governments account for GHG emissions, reductions, and removals that occur on their territory.**

Governments capture emissions in GHG inventories and report these under United Nations Framework Convention on Climate Change (UNFCCC). Developed countries annually report direct GHG emissions, reductions, and removals in five sectors: energy; industrial processes and product use; agriculture; land use, land-use change and forestry; and waste. Developing countries report GHG emissions, reductions, and removals through national communications (NCs) and biennial update reports (BURs). NCs are submitted every four years and provide information about GHG inventories, mitigation and adaptation measures, and other activities that governments consider relevant to the achievement of the objectives of the UNFCCC. BURs provide updates of the information presented in national communications, particularly on GHG inventories; mitigation actions, constraints, and gaps; and support needed and received. All countries also report progress

towards their NDCs under the **Enhanced Transparency Framework of the Paris Agreement**. This includes accounting for emission reductions or removals that are transferred between countries under **Article 6 of the Paris Agreement**.

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### **What is double counting?**

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The different goals, scopes, and scales of accounting lead to overlapping GHG measurement and reporting, which can lead to the double counting of emissions reductions or removals. Double counting occurs when a single emission reduction or removal is counted towards more than one goal, target, or pledge. Double counting can occur between different accounting systems (e.g., corporate accounting overlaps with government accounting) or within a system (e.g., different GHG projects under the same GHG crediting program account for the same GHG emission reduction more than once.) Generally, **carbon standards** have protocols in place to avoid the double counting of GHG emission reductions or removals within accounting systems. The avoidance of double counting between different systems is more controversial and difficult to manage.

There are three types of double counting (as depicted in Figure 4.1):

**Double issuance** occurs under the VCM when more than one credit is issued for a single ton of GHG emission reductions or removals. The risk of double issuance is addressed through robust carbon credit certification processes.

**Double use** occurs when a single, certified GHG emission reduction or removal is used more than once to meet a climate target in the same GHG accounting system. The risk of



double use is addressed through **adjustment rules**, transparent disclosure, and reporting of GHG reductions and removals in GHG registries. For example, corresponding adjustments avoid double use of transferred GHG emission reductions and removals by governments to meet their NDCs under the Paris Agreement.

**Double claiming** occurs when a single carbon credit—representing one ton of GHG emission reduction or removal—is claimed against different types of climate goals in different accounting systems. This can happen, for example, when a company claims a carbon credit towards its (voluntary or binding) emission reduction goal, while the same credit is claimed towards the NDC target of the host country where the carbon credit was generated. The risk of double

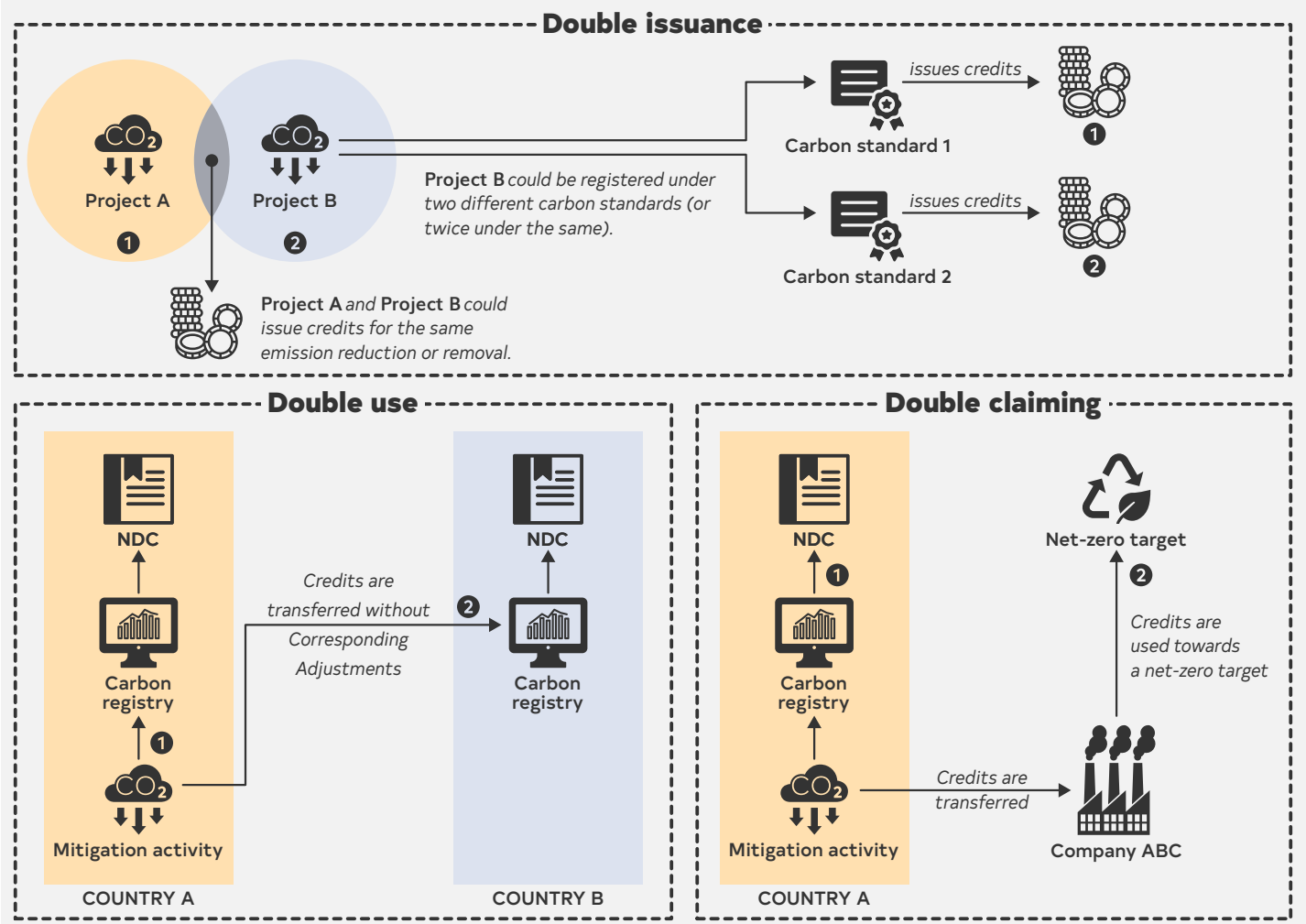
claiming is currently not managed by existing methodologies or registries.

### Is double claiming a problem?

While other forms of double counting are managed by program rules, double claiming of GHG emission reductions and removals poses a potential risk. There are arguments both that double claiming is a problem and that it is not.

Some non-governmental organizations (NGOs) and governments argue that double claiming is a problem. They emphasize that double claiming displaces corporate or government mitigation action, resulting in less mitigation than what would be expected from merely looking at the respective achievement of corporate and NDC targets.

**Figure 4.1 | Double counting**



In particular, where carbon credits are used to offset emissions, double claiming of GHG emission reductions and removals could undermine mitigation efforts. They argue that companies should not be able to offset their emissions through carbon credits that are also claimed under the NDCs of host countries.

Many carbon market participants, as well as some governments and NGOs, argue that double claiming is not a problem. They point out that since companies' climate targets and countries' NDCs are accounted for in separate, parallel accounting systems, double claiming does not result in the misrepresentation of the climate benefits being generated at a global level. They also argue that VCM action should contribute to host country NDCs in the form of climate finance and not result in adjusting the accounts of the host country. Since **corresponding adjustments** require complex accounting procedures and institutional requirements, they argue that such adjustments would disincentivize investments in mitigation action.

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### How can double claiming under the VCM be addressed?

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Proposals on how to address double claiming have been made on both the supply and the demand sides of the VCM.

Double claiming could be addressed on the supply side of the VCM through **corresponding adjustments**. Corresponding adjustments would ensure that whenever VCM credits were transferred internationally, the GHG emission reductions or removals associated with those credits would be

subtracted from the GHG registry of the host country. A drawback of applying corresponding adjustments to the VCM is the bureaucratic and technical complexity involved. Many governments may not have the capacity to offer corresponding adjustments now, although some may be willing and able to do so in the future.

Double claiming can be addressed on the demand side of the VCM by defining corporate claims that do not involve offsetting. In this case, the right to claim the climate benefit associated with a project or carbon credit does not include the right to offset company emissions. A drawback of this approach is that the business case of the **non-offset uses** of carbon credits has so far not resonated as strongly with corporate buyers as offsetting emissions, which allows companies to claim to be carbon neutral, a claim that is widely recognized by consumers. Governments can help address this drawback by working with companies to recognize the non-offset use of carbon credits and promoting public awareness of non-offset benefits. Private and public-private initiatives are in the process of developing guidance on corporate claims. For example, the **VCM Integrity Initiative** proposes to develop guidance for corporate claims beginning in 2022.

#### Further Reading

1. Greiner, S., Krämer, N., Michaelowa, A., & Espelage, A. (2019). Article 6 Corresponding Adjustments Key accounting challenges for Article 6 transfers of mitigation outcomes. [https://www.carbon-mechanisms.de/fileadmin/media/dokumentatione/Publikationen/Studie/2019\\_ClimateFocus\\_Perspectives\\_Corresponding\\_Adjustments\\_Art6.pdf](https://www.carbon-mechanisms.de/fileadmin/media/dokumentatione/Publikationen/Studie/2019_ClimateFocus_Perspectives_Corresponding_Adjustments_Art6.pdf)

### **Further Reading Continued**

2. Howard, A., & Greiner, S. (2021). *Accounting Approaches for the Voluntary Carbon Market*. *Voluntary Carbon Markets Global Dialogue*.  
[https://vcm-gd.org/wp-content/uploads/2021/10/VCM\\_Accounting.pdf](https://vcm-gd.org/wp-content/uploads/2021/10/VCM_Accounting.pdf)
3. Schneider, L., Kollmuss, A., & Lazarus, M. (2015). *Addressing the risk of double counting emission reductions under the UNFCCC*. *Climatic Change*, 131(4), 473–486.  
<https://doi.org/10.1007/s10584-015-1398-y>

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# The Voluntary Carbon Market Explained

## Chapter 5

**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Chapter 5: What is a carbon credit?

A carbon credit is a tradable unit that represents one ton of greenhouse gas (GHG) emission reductions or removals. Carbon credits in the voluntary carbon market (VCM) are generated by the activities of projects and programs that are certified by carbon standards. The credits are purchased by companies, individuals, and other entities to offset GHG emissions or otherwise contribute to emissions abatement. The prices of carbon credits are determined by the types and quality of VCM activities and the demand for credits from those activities.

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### What does a voluntary carbon market carbon credit represent?

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A carbon credit is a tradable emissions unit. Each carbon credit that is generated in the VCM represents one ton of GHG emissions that was not emitted to or removed from the atmosphere compared to baseline emissions. To enable standardized accounting, GHG emission reductions and removals are measured in carbon dioxide equivalent (CO<sub>2</sub>e) units, often expressed in tons (t) or Metric tons (Mt) of CO<sub>2</sub>e emissions reductions and removals and abbreviated as tCO<sub>2</sub>e or MtCO<sub>2</sub>e.

Carbon credits that are traded in the VCM are certified and issued by carbon standards according to the rules and requirements set by **carbon standard** organizations and GHG crediting programs. Certified GHG emission reductions and removals are converted into carbon credits when they are issued in the GHG registry of the certifying carbon standard. Registries allow the

transfer of credits between accounts and the tracking of issuances and transfers.

Carbon credits are distinct from the allowances that are traded in **cap-and-trade systems**. Allowances are tradable permits that authorize the holder to emit a certain quantity of GHGs in the future, while carbon credits represent emissions that were sequestered or avoided in the past. Through carbon credits, the VCM provides incentives to private and public actors to contribute to climate action. Sellers generate voluntary carbon credits to finance activities that reduce the release of new GHG emissions to the atmosphere or remove emissions already in the atmosphere. Buyers **use VCM carbon credits** to directly offset their GHG emissions against a voluntary or compliance emission reduction target, or to contribute to broader corporate or public climate goals to reduce GHG emissions overall by buying credits without offsetting.

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### How is the market for carbon credits structured?

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In economic terms, carbon credits are tradable commodities. Carbon credits are generated, sold, transferred, and purchased by private and public actors that fill different roles in the carbon market. The supply and demand structure of the market is depicted in figure 5.1.

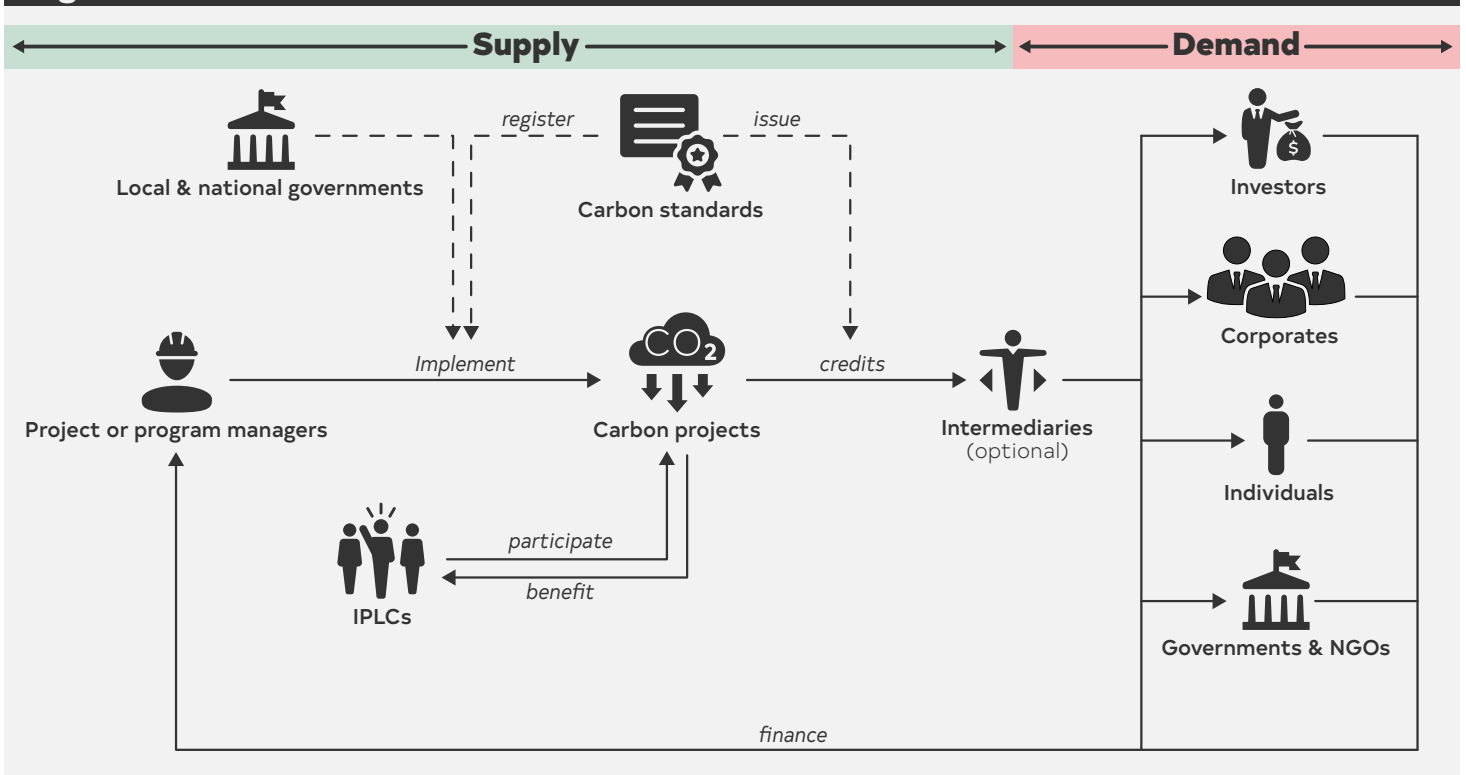
**Carbon credit supply:** Project and program managers design and implement mitigation activities that

are registered under GHG crediting **standards** and generate carbon credits. Activity managers may be for-profit or non-for-profit private project developers, local private or community landowners, or municipalities, public agencies and—particularly in the case of public sector jurisdictional programs—subnational or national **governments**. To create a VCM activity, developers design a project or program, consult with government entities and local communities, comply with carbon standard requirements to receive certification, establish monitoring systems, and sell credits to buyers or to intermediaries. Activity developers may recruit investors to provide upfront financing, partner with local communities or civil society organizations, or engage other participants. Government may mobilize advance finance for VCM activities from budgetary resources or from donor-sponsored programs.

**Carbon credit demand:** The final users of most VCM carbon credits are private companies that voluntarily engage in climate mitigation to offset their GHG emissions or to achieve broader corporate climate goals. Governments, non-governmental organizations (NGOs), and individuals also buy VCM carbon credits to offset emissions from flights, events or the production of goods and services. **Activities, products, or services that offset** GHG emissions are often marketed as carbon neutral.'

**Investors and intermediaries** operate on both the supply and demand sides by investing in projects and by purchasing carbon credits. Market intermediaries generally are for-profit companies that act as traders or fund managers that manage carbon credit portfolios. They ensure the availability of risk capital and help market stability. Investors are private companies, foundations or individuals who work

**Figure 5.1** | The market for carbon credits



with intermediaries or project developers to finance carbon credit projects or programs, often in exchange for a guaranteed quantity of or price for credits generated by the projects or programs.

**Regulators:** The direct regulators of the VCM are private **carbon standard** organizations, which are, in most cases, international NGOs. The standard organizations set requirements of GHG crediting programs that projects and programs must fulfill to generate tradable carbon credits. **Governments** may regulate the VCM, by formulating social or environmental project standards (safeguards), defining **carbon rights** and **benefit sharing** requirements, or linking the VCM to **Paris Agreement** commitments, compliance carbon markets or other carbon pricing schemes.

**Indigenous Peoples and local communities (IPLCs):** IPLCs may hold **land, forest, or carbon rights**, or have customary or traditional access to land where emission reduction activities take place. As land managers, IPLCs are on the supply side of the VCM. They may engage directly in project development or participate through **benefit sharing** agreements.

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### How are carbon credit prices determined?

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The price for a carbon credit is an essential piece of information for both the supply and demand side of the market. On the demand side, it allows end buyers to evaluate the costs of meeting corporate climate targets and to determine what role the VCM can play in achieving those targets. On the supply side, clear price signals are important for project developers to

decide whether it is worth developing VCM projects or programs and how much carbon finance can contribute to development and implementation costs.

At present, the prices in the VCM are not transparent. There is no common mechanism to set prices and enhance market transparency. Carbon credits of different origin and quality have different prices. In the current VCM (November 2021), the price per carbon credit can vary from a few cents per MtCO<sub>2</sub>e to USD 20 per MtCO<sub>2</sub>e. As the market gains volume and becomes more liquid, more standardized price setting methods are likely to emerge. Exchanges, credit ratings, and price indices are expected to lead to more transparent carbon pricing. In addition, initiatives such as the **Taskforce for Scaling Voluntary Carbon Markets** are looking to increase harmonization, efficiency, and transparency of the VCM. Carbon prices in the VCM are influenced by vintage, quality, certifications, negotiating power, and risk.

**Newer credits are valued more highly than older credits.** The year in which a carbon credit was issued is its vintage. Buyers may prefer credits with newer vintages because they are issued according to the more recently updated methodologies and standard requirements and may be available in sectors—like **nature-based solutions**—that previously were not credited in the VCM. It is also easier to determine that **newer credits are financially additional**, as credits from older vintages may represent GHG emission reductions or removals from activities that no longer need finance incentives from the VCM.

**High-quality credits are more costly.**

Often, projects or programs that generate **high-quality credits** have relatively higher costs for designing and implementing activities, monitoring, and verifying impacts, and building relationships with local stakeholders. High-quality credits represent real, measurable, and additional GHG emission reductions or removals. Verifying these impacts necessitates increased monitoring reliability, which comes with increased costs. High-quality credits also often yield sustainable development, biodiversity conservation, and other social or ecological benefits in addition to GHG reductions or removals, which require significant upfront investment. While buyers wish to support high-quality projects, they do not always demonstrate a willingness to pay prices that reflect the true financial needs of these projects. Increased investment in high-quality projects can be encouraged by clear and transparent **benefit sharing** requirements in the jurisdictions where projects take place, the use of **carbon standards** that certify sustainable development goal contributions, and monitoring and quantification of sustainable development benefits to demonstrate that high prices are fair.

**Additional certifications can drive higher prices.** Projects that have achieved additional certifications of broader sustainability benefits demand higher prices. For example, the **Climate, Community, and Biodiversity Standard** confirms environmental and social benefits of forest carbon projects. Under Verra's **Sustainable Development Verified Impact Standard** (SD VISta) or the Gold Standard for the Global Goals (GS4GG), project developers can certify contributions to Sustainable

Development Goals (SDGs). Certified sustainable development contributions give buyers the assurance that such benefits are real and likely to generate positive environmental and social impacts in addition to GHG emission reductions and removals. GS4GG and SDVISta certify positive environmental or social attributes for VCM projects, or—for project developers that wish to go a step further—independently tradable sustainable development assets, which can be priced independently of carbon credits of the underlying project.

**Prices are determined by power asymmetries and the ability of parties to negotiate.** If certain buyers or groups of buyers dominate shares of the VCM, they are often able to determine the price. This is particularly true for jurisdictional programs for **Reduced Emissions from Deforestation and Degradation Plus (REDD+)**, where a few coordinated multilateral and bilateral buyers dominated transactions in the past. Results-based payment programs, such as the Forest Carbon Partnership Facility (**FCPF**) or the REDD Early Movers (**REM**) Programme, or bilateral buyers, such as Norway's International Climate and Forests Initiative (**NICFI**), set reference prices. Recently, the Lowering Emissions by Accelerating Forest finance (**LEAF**) Coalition, a private-public consortium, decided to set a new, higher reference price. The prices set by these program-level initiatives influence project-level carbon prices in comparable project classes.

**The distribution of risk is reflected in carbon prices.** Carbon prices depend on the allocation of project development, investment, and performance risk. In general, the lower the perceived risks, and the more robust the measures put



the quality of GHG reductions or removals, the higher the price of the carbon credit. Where buyers act as investors in projects, they often retain the right to receive carbon credits at a discount from market prices. Similarly, buyers that agree to make upfront payments and share the risk of project failure pay less per carbon credit than buyers that pay for credits after project implementation and certification. Buyers that enter into forward contracts benefit from fixing prices for future carbon credits, which may or may not be beneficial for buyers and sellers depending on market developments.

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**Introduction**

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Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

# The Voluntary Carbon Market Explained

**Chapter 6**



## Chapter 6: What makes a high-quality carbon credit?

A high-quality carbon credit accurately or conservatively represents greenhouse gas (GHG) emission reductions or removals achieved through voluntary carbon market (VCM) activities. VCM projects and programs that generate high-quality carbon credits maximize climate, socio-economic and ecological benefits for local communities and ecosystems as appropriate to the project type and sector. Thus, high-quality carbon credits are the result of well-informed decisions made during project design and development following guidance from reputable carbon standards and in alignment with host country regulations.

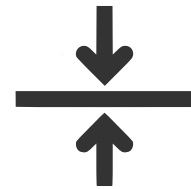
### What defines real and additional GHG emission reductions?

High-quality carbon credits represent real and additional GHG emission reductions or removals, which are quantified based on credible and conservative calculations of baselines, additionality, leakage, and permanence.



**Quantification of emission reductions and removals** refers to the methodologies according to which GHG emissions are measured, including methods for collecting, analyzing, and storing emissions data. Emissions should be quantified in a conservative manner, using credible baselines, and discount for uncertainty in measurements and for leakage.

The measurement of emission reductions requires robust measurement, reporting, and verification (MRV) protocols. Projects and jurisdictional programs for **Reducing Emissions from Deforestation and Degradation plus (REDD+)** should follow methods consistent with the Intergovernmental Panel on Climate Change for quantification and use new monitoring technologies to the extent possible.



**Credible baselines** determine the emissions that would have been emitted to and/or removed from the atmosphere had the VCM project or program not been implemented. Baselines are expressed as tonnes of carbon dioxide (CO<sub>2</sub>) equivalent per year for the crediting period against which the GHG emissions and removals from a results period will be compared. Inflated baselines lead to the overestimation of climate benefits associated with VCM projects and programs, resulting in a scenario where each carbon credit is associated with less than one ton of emission reductions or removals. Credible baselines are conservative and assume that less rather than more GHGs would have been emitted. In the case of energy and landfill-gas projects or programs, baselines may be set based on expected project performance, sampling of fixed parameters, or other monitoring over the crediting period. In the case of land and forest projects and programs, baselines are set based on the difference in GHG emission reductions or removals achieved by

the project or program relative to a counterfactual business-as-usual reference scenario. In the context of **jurisdictional REDD+**, baselines are called 'forest emissions reference levels' or just 'reference levels.' Jurisdictional reference levels are based on business-as-usual emissions or defined as the historic level of emissions over a defined period.

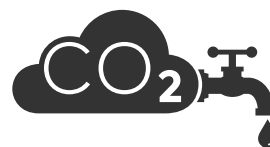


**Assurance of additionality** means that the GHG emission reductions and removals associated with a carbon credit would not have taken place without the incentives and/or resources provided by a project or program. Additionality tests are applied to demonstrate that the associated emission reductions or removals would not have occurred in the absence of the VCM project.

Additionality may be:

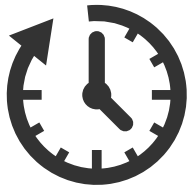
- financial—the emission reductions or removals would not have occurred without carbon finance;
- technological—the emission reductions or removals would not have occurred without equipment or infrastructure provided by the VCM activity;
- ecological—the emission reductions or removals would not have occurred without environmental interventions by the VCM activity;
- institutional or social—the emission reductions or removals would not have occurred without changes to governance and/or local practices that were facilitated by the project or program.

To be considered additional, emission reductions or removals cannot be due to activities that are already legally required or common practice in the project area. Demonstrating and verifying additionality is difficult because it is not possible to determine exactly how finance, technology, laws, or local practices would have changed in a counterfactual without-project or without-program scenario. Additionality may be more credibly demonstrated at large spatial and temporal scales by showing that emission reductions or removals are below the level of historical trends.



**Preventing and accounting for leakage** refers to ensuring that a VCM activity avoids and does not simply displace GHG emissions. Leakage occurs across all sectors and at all levels of implementation. Primary leakage occurs when a VCM project or program causes drivers of GHG emissions to move rather than cease emitting. Secondary leakage occurs if a VCM project or program inadvertently incentivizes increases in GHG emitting activities, for example by shifting supply and demand of land, products, and services. Leakage should be prevented by managing, quantifying, accounting for and compensating displacements, with best practices differing across project types. Primary leakage can largely be controlled through project designs that analyze and address the proximate causes of leakage and the underlying drivers. Larger accounting areas, such as jurisdictional programs, can account for leakage from specific project areas. Secondary leakage triggered by policy interventions is more complex and

harder to manage. However, governments can model possible leakage and discount emission reductions or removals with the assumption that some leakage will occur.



**Assurance of permanence** involves ensuring that each carbon credit generated represents a long-term climate benefit, often defined as 100 years. Projects and programs must mitigate the risk that GHG emission reductions or removals are reversed at some point in the future due to natural disasters, climate changes, human activities or other events that cause stored carbon to be released back to the atmosphere. Permanence is primarily relevant for credits that represent carbon removals through nature-based credits or carbon storage technologies. The risk of impermanence is often managed through mandatory buffer accounts: projects and programs set aside a portion of their credits in a buffer pool, from which credits are subtracted from the pool to compensate when reversals of carbon storage occur. Non-permanence buffers are standing practice and widely used at the project level. Their success at the REDD+ jurisdictional level, where much larger amounts of reversals may occur and the insurance-function of buffers is more complex, remains to be examined.

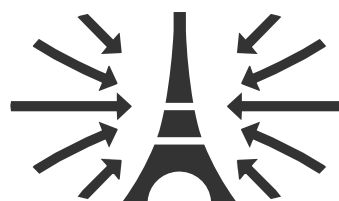
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## What are the features of projects that generate high-quality credits?

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High-quality carbon credits are generated by high-quality projects and programs.

High-quality projects and programs must be well-designed and appropriately monitored, in alignment with all **carbon standard** requirements and relevant policies. High-quality projects also provide benefits to local communities, as appropriate to the project type. Buyers may be willing to pay higher prices for carbon credits that not only represent real and additional emission reductions or removals, but that also exhibit benefits to host countries and local communities.



**Policy alignment** ensures that VCM activities are filling the gap to implement mitigation activities that are not (yet) required by regulation or financially supported by the host country and do not provide competing incentives to private actors. VCM projects should be fully transparent about how project activities may interact with policy delivery.

**Governments can support VCM actors** in aligning their activities with domestic policies by clarifying the rules of engagement in the VCM in their country and by indicating where VCM finance can best complement public policy.



**Safeguards** ensure that VCM projects do not cause social and environmental harm. Projects and programs are

required to follow safeguards to ensure that VCM initiatives adequately address issues such as the **rights of IPLCs**, social participation, and preservation of ecosystems. Safeguards are put in place by **carbon standards** and, in some cases, by host country **governments**. Social safeguards typically require that projects protect human rights, avoid discrimination and any illegal practices, respect local customs and institutions, ensure consultations are inclusive, and follow a Free, Prior and Informed Consent process. Environmental safeguards require that projects protect intact and high conservation value ecosystems and follow all relevant environmental regulations.



**Transparent and fair benefit sharing** ensures that local populations benefit from VCM activities. Benefits can accrue to communities in the form of direct payments, improved infrastructure, community services, or other non-monetary benefits. Effective **benefit sharing** systems provide incentives for local communities to participate in VCM projects as appropriate. Benefit sharing is particularly relevant for **REDD+**, where it often takes the form of agreements between communities and project developers or governments (in the case of **jurisdictional programs**) about the distribution of monetary or non-monetary benefits from the commercialization of carbon credits.

Lasting and transformative impact is associated with VCM activities that help to shift host countries towards low

emissions development paths. Larger sectoral or jurisdictional programs are more likely to generate transformation policy changes and impacts. Programs and projects that provide transformative capacity building and technology with effects outside of project boundaries can enhance the climate ambitions of countries and provide net contributions to the **Paris Agreement**, even if credits are **used as offsets**. Projects can also proactively pursue additional socio-economic and ecological impact through activities that contribute to sustainable development. Several **carbon standards** provide labels or credits to award projects for SDG contributions.

### Further Reading

1. Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., & Cage, P. (2019). *Securing Climate Benefit: A Guide to Using Carbon Offsets* (p. 59). Stockholm Environment Institute & Greenhouse Gas Management Institute. [offsetguide.org/pdf-download/](http://offsetguide.org/pdf-download/)
2. Chagas, T., Galt, H., Lee, D., Neeff, T., & Streck, C. (2020). *A close look at the quality of REDD+ carbon credits*. <https://www.climatefocus.com/sites/default/files/A%20close%20look%20at%20the%20quality%20of%20REDD%2B%20carbon%20credits%20%282020%29%20V2.0.pdf>
3. Schneider, L., Healy, S., Fallasch, F., De León, F., Rambharos, M., Schallert, B., Holler, J., Kizzier, K., Petsonk, A., & Hanafi, A. (2020). *What Makes a High Quality Carbon Credit*. World Wildlife Fund (WWF-US), Environmental Defense Fund (EDF) and Oeko-Institut

### **Further Reading Continued**

4. Streck, C. (2021). *REDD+ and leakage: Debunking myths and promoting integrated solutions*. *Climate Policy*, 21(6), 843–852. <https://doi.org/10.1080/14693062.2021.1920363>

5. World Bank. (2016). *Carbon Credits and Additionality: Past, Present, Future*. (PMR Technical Note 13. *Partnership for Market Readiness*, p. 37). <https://openknowledge.worldbank.org/bitstream/handle/10986/24295/K8835.pdf?sequence=2&isAllowed=y>

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# The Voluntary Carbon Market **Explained**

## Chapter 7



**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Chapter 7: What is the role of carbon standards in the voluntary carbon market?

Carbon standards are central to the operation of the voluntary carbon market (VCM). Carbon standard organizations provide and administer the rules and requirements for VCM projects and programs, certify and issue carbon credits, and facilitate the trade in carbon credits.

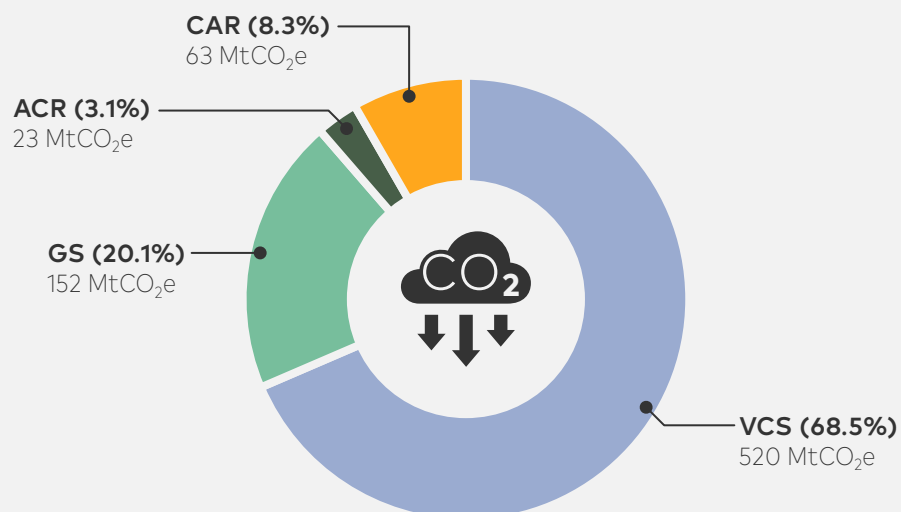
### What are carbon standards?

A carbon standard—or GHG crediting program—refers to the complete set of rules, procedures, and methodologies according to which certified carbon credits are generated and issued. Carbon standards are developed and governed by standard organizations—typically international non-governmental organizations (NGOs) that consist of a standard-setting arm, a regulatory arm, and a validation and verification system usually outsourced to third parties. Governments can also develop or support the development of

carbon standards, such as the **Woodland Carbon Code in the United Kingdom** and the **Thailand Voluntary Emission Reduction Program**.

By developing and administering standardized procedures for crediting greenhouse gas (GHG) emission reductions, avoidance and removals, standard organizations act as the regulators of the VCM. Given the voluntary nature of this market, standard organizations safeguard the **quality of VCM carbon credits** and provide credibility to the **baseline-and-credit system** on which the VCM relies. Standard organizations with good governance have clear rules and requirements that are regularly updated, mechanisms for stakeholder consultation and grievances, specific environmental and social safeguard requirements, robust methodologies for determining baselines and project contributions, and requirements for

**Figure 7.1** | Share of the credits issued in the VCM by the four leading Carbon Standards



independent review of projects by competent, third-party auditors (often called Validation and Verification Bodies, VVBs).

Carbon standards both certify carbon projects and programs and facilitate the trade of **carbon credits**. Standards issue one credit for each metric ton of GHG emissions avoided, reduced, or removed, which are measured in tons of carbon dioxide equivalents (tCO<sub>2</sub>e). In this way, the standards convert certified GHG emission reductions and removals into tradable carbon credits. To obtain certification of GHG emission reductions or removals and **be issued credits** to trade, VCM projects and programs must comply with standards' processes, rules, requirements, and safeguards; apply methodologies approved by the standards; and provide evidence of compliance that is generated by activity managers and reviewed by an independent third-party auditor. Carbon standards use registries to track all credits generated, transfer tradable credits, and trace transactions between buyers and sellers.

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## What are the main carbon standards in the VCM?

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Carbon standards vary in their approaches, methodologies, and requirements. The main carbon standards—by relative volumes of credits issued in 2020—are the Verified Carbon Standard (**VCS**), the Gold Standard (**GS**), the American Carbon Registry (**ACR**), and the Climate Action Reserve (**CAR**). As shown in Figure 7.1, VCS and GS are the major standards worldwide, issuing 68.5% and 20.1% of credits, respectively. ACR (3.1% of credits) is mainly active in North America and CAR (8.3% of credits) is active only in the United States.

VCS, GS, ACR and CAR all offer methodologies for projects in nature-based solutions (**Nbs**), energy, and industrial sectors. The four leading standards demonstrate good governance. They provide robust rules and requirements for project and program developers and auditors, and impose environmental and social safeguards for projects and programs to receive credits, including requirements that projects avoid harms to biodiversity and local ecosystems, follow all national and international laws and regulations, and conduct consultations with local stakeholders, following Free, Prior and Informed Consent (FPIC) processes when working with Indigenous Peoples.

There are smaller standards that issue small shares of credits in the VCM. **Plan Vivo** is a standard that sets requirements that are specific to smallholder and community projects in developing countries, with 17 projects actively issuing credits. In addition, there are various other context-specific crediting mechanisms, including voluntary domestic carbon standards such as those in **California, Colombia, Thailand**, and the **United Kingdom**.

In 2020, a new standard, Architecture for REDD+ Transactions, the REDD+ Environmental Excellence Standard (**ART/TREES**), was launched. ART/TREES formulates and administers standardized procedures for crediting emission reductions and removals from government-sponsored national or large sub-national programs for **Reducing Emissions from Deforestation and Degradation Plus (REDD+)**. ART/TREES is geared to certify large volumes of GHG emission reductions and removals. The first Letters of Intent for transactions involving jurisdictional credits certified under ART/TREES were signed in November 2021.

Table 7.1: The Four Main Carbon Standards

Standard	Market Volume (M = million)	Name of credits (Representing 1 tCO <sub>2</sub> e)	Geographical Scope	Sectoral Scope
 Verified Carbon Standard (VCS)	746 M credits, 70.44% share	Verified Carbon Units (VCUs)	1,792 registered projects in 82 countries. VCS is dominant in developing countries.	Covers all project classes.
 Gold Standard (GS)	184 M credits, 17.37% share	Verified Emission Reductions (VERs)	1,313 registered projects in 80 countries. Credits are purchased especially by buyers in the European Union.	Covers most project classes, but excludes project-level REDD+. After 2025, will only cover credits backed by <b>corresponding adjustments</b> .
 American Carbon Registry (ACR)	63 M credits, 5.95% share	Emission Reduction Tons (ERTs)	156 projects in the United States.	Covers industrial processes; land use, land use change and forestry; carbon capture; waste.
 Climate Action Reserve (CAR)	66 M credits, 6.23% share	Climate Reserve Tonnes (CRTs)	26 projects in the US. <b>CAR serves as the Offset Project Registry for California's Cap-and-Trade Program.</b> CAR is also running a pilot Emissions Trading System in Mexico from 2020-2023.	Covers agriculture and forestry; energy; waste; and non-CO <sub>2</sub> GHG abatement.

There are also standards that certify contributions of VCM activities to Sustainable Development Goals (SDGs). SDG standards complement carbon standards by adding additional certifications for projects that generate economic, social, biodiversity or

other benefits in addition to climate change mitigation. These standards establish requirements and methodologies for designing, monitoring, verifying, and validating contributions to SDGs. Some SDG standards offer sustainable

development labels to attach to carbon credits that demonstrate SDG benefits, and some standards allow projects to issue sustainable development credits that can be traded independently from carbon credits. VCM standard organizations that provide labels for sustainable development benefits include Verra, which administers the Climate, Community and Biodiversity Standard (**CCB**) and the Sustainable Development Verified Impact Standard (**SD VISta**) labels, and the Gold Standard for the Global Goals (**GS4GG**). SD VISta and GS4GG issue tradable credits that represent project contributions to the SDGs.

The certification of SDG benefits is particularly relevant for community-based and **NbS projects**. Due to their potential to offer benefits beyond climate change mitigation and offer removals, NbS credits are a popular project class. Voluntary carbon standards have approved methodologies to develop and generate credits from NbS activities under each of the main **NbS categories**—Forestry, Agriculture, and Wetlands. The desire to certify the additional benefits of NbS projects has played an essential role in the development of labels certifying strong social-ecological benefits and contributions to SDGs.

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### How do governments and carbon standard organizations interact?

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Most VCM standards operate outside of government regulation. However, as governments seek to enhance VCM impact and policy alignment, interaction between governments and standard organizations is expected to grow.

**Governments** benefit from collaboration with private standard organizations because standards provide technical expertise for robust GHG accounting and management of carbon offset projects. Working with standards can lower countries' costs associating with tracking and trading credits.

To access VCM-based finance directly, **governments** can generate and market VCM carbon credits. Governments that implement national programs, such as **REDD+ jurisdictional programs**, sell credits generated using methodologies provided by standards. Governments can also promote the integration of VCM projects into national systems to attract investments into projects. integration can preserve and strengthen the environmental integrity of projects. For example, in the case of **REDD+**, standards such as Verra's Jurisdictional and Nested REDD+ (**JNR**) Framework or **ART/TREES** promote the integration of projects into larger-scale programs.

Another form of interaction is governments' use of voluntary carbon standards to support their domestic climate regulations, with some governments opting for private standards in their public rules. For example, the US State of **California** accepted offsets generated by voluntary standards (CAR and ACR) and eventually delegated the creation of its mandatory carbon market to the governing body of the CAR. Countries such as **Colombia** and **South Africa** recognize credits from GHG carbon crediting programs (i.e., VCS) for liable entities to meet carbon tax obligations and build on the architecture of private standards. The Carbon Offsetting and Reduction Scheme for International

Aviation (**CORSIA**) also allows liable entities to use VCM carbon credits for approved GHG emission reduction or removal activities, if backed by **corresponding adjustments**.

Governments may increase interactions with standards to accelerate implementation of the **Paris Agreement** and to encourage voluntary action. Voluntary carbon finance can be used to fill mitigation gaps for sectors not covered in Nationally Determined Contributions (NDCs) or to help countries to meet mitigation targets for sectors that are covered by NDCs. In some cases, particularly in carbon-intensive economies, the recognition of voluntary standards by governments increased the investment into VCM projects in their domestic economies. Proactive engagement with standards can attract investments into national mitigation opportunity. Governments increase the availability of credits by permitting more types of projects and can rely on greater liquidity with a larger carbon market to attract finance that supports meeting climate goals.

### Further Reading

1. Bravo, F., Mikolajczyk, S., & Mongendre, L. (2021). *The Voluntary Carbon Market Dashboard* [Text]. Climate Focus. <https://www.climatefocus.com/initiatives/voluntary-carbon-market-dashboard>
2. Chagas, T., Galt, H., Lee, D., Neeff, T., & Streck, C. (2020). *A close look at the quality of REDD+ carbon credits*. <https://www.climatefocus.com/sites/default/files/A%20close%20look%20at%20the%20quality%20of%20REDD%2B%20carbon%20credits%20%282020%29%20V2.0.pdf>
3. Green, J. F. (2017). *Blurred Lines: Public-Private Interactions in Carbon Regulations*. *International Interactions*, 43(1), 103–128. <https://doi.org/10.1080/03050629.2016.1210943>

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# The Voluntary Carbon Market Explained

## Chapter 8



**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

## Chapter 8: How are carbon credits generated?

Carbon credits are tradable, certified greenhouse gas (GHG) emission reductions or removals. Carbon standards issue carbon credits to registry accounts. Each voluntary carbon market (VCM) carbon credit represents one ton of GHG emissions removed from the atmosphere or one ton of GHG that has not been emitted, as compared to a baseline.

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### How do baseline-and-credit systems work?

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GHG emission reductions or removals are measured using VCM protocols and methodologies. The VCM generates carbon credits through a baseline-and-credit system that compares actual GHG emissions to a counterfactual baseline emissions scenario. The differences between actual and counterfactual emissions are accounted for as GHG emission reductions and removals that would not have occurred in a business-as-usual scenario.

To generate **carbon credits** in the VCM, project or program proponents (i.e., the public or private entities designing the mitigation activities) must demonstrate that project or program activities lead to GHG emission reductions and removals beyond those that would have occurred in the absence of the carbon activity. A baseline or reference level must be developed, against which emission reductions or removals are quantified. Baselines describe a counterfactual scenario that will not *actually* occur, but *would have* occurred in an alternative reality without the VCM project or program. This makes the definition of **conservative reference scenarios**

essential for the credibility of baselines.

Standards require that programs and projects pass an **additionality** test to demonstrate that project or program activities face barriers that would prevent them from otherwise going ahead. In other words, activities and **credits are additional** if they would not have happened in the absence of carbon finance. To demonstrate additionality, program or project proponents must follow the rules, procedures, and methodologies of the VCM Standard under which they choose to certify their activities.

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### How does government action relate to VCM baselines?

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National **policies, laws, and regulations** must be taken into account when testing additionality and developing baselines. For example, if there is regulation in place to require certain emission reduction practices—and strong enforcement of those regulations—then VCM projects that seek to provide incentives for those same practices would not be additional, as the regulated emission reductions would have likely taken place in the absence of the VCM project. In the case of **jurisdictional programs**, some standards require governments to show that ‘additional’ policies and measures have been adopted to achieve GHG emission reductions and removals below jurisdictional reference levels.

Under the **Paris Agreement**, all countries have the obligation to develop increasingly comprehensive and

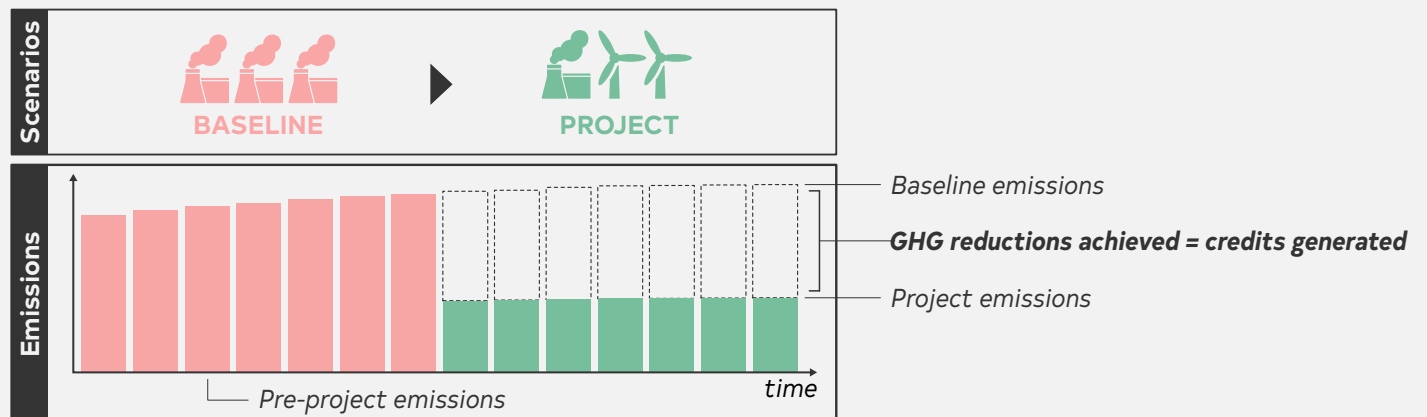
**Box 8.1: Baseline-and-credit systems vs. cap-and-trade systems**

Tradable carbon units are either carbon credits generated through baseline-and-credit systems, or emissions permits allocated under cap-and-trade systems. Most compliance GHG emission trading systems are regulated cap-and-trade systems whereas baseline-and-credit systems can be applied to both compliance and voluntary markets. The VCM is organized as a baseline-and-credit system. The table below provides an overview of the most important differences between baseline-and-credit and cap-and-trade systems.

Feature/ Mechanism	Baseline-and-credit	Cap-and-trade
Traded commodity	Credits: climate benefits (i.e., GHG emission reductions and removals) that exceed an established baseline.	Allowances: tradable permits to emit GHGs.
Quantity of commodity available	No limit on how many climate benefits can be generated below an established baseline.	Limited and determined by the overall cap, which is set by regulators.
Emission sources covered	Those approved by <b>standards</b> and for which accounting methodologies are available.	Emissions from sources and installations that are identified by law.
Emissions impact	The emissions impact of the trade in credits is neutral when credits are used to offset emissions, i.e., to compensate for emissions occurring elsewhere. <b>Trade in credits</b> may lead to a decrease in overall emissions if the credits are bought for non-offsetting purposes. The emissions impact of baseline-and-credit systems depends on the use of carbon credits by corporates, governments, and civil society in the context of credible mitigation strategies.	The emissions impact of the trade in allowances is neutral when allowances are used as permits to offset emissions. The emissions impact of the entire cap-and-trade system depends on a tightening of the emissions cap over time.

Figure 8.1 shows an example of a project in which transitioning from conventional power plant to wind power generation results in the achievement of emissions reductions relative to the baseline power plant emissions that would have occurred without the project.

**Figure 8.1** | Example of a baseline-and-credit system





ambitious Nationally Determined Contributions (NDCs) that inform national climate targets and plans. This presents an essential challenge for carbon market mechanisms because additionality may need to consider the host country's NDC. However, NDCs are often aspirational statements that are not backed by concrete policies and implementation plans. NDCs are also often conditional on additional financing. NDCs that are not being implemented may not need to be considered in VCM baselines or additionality tests.

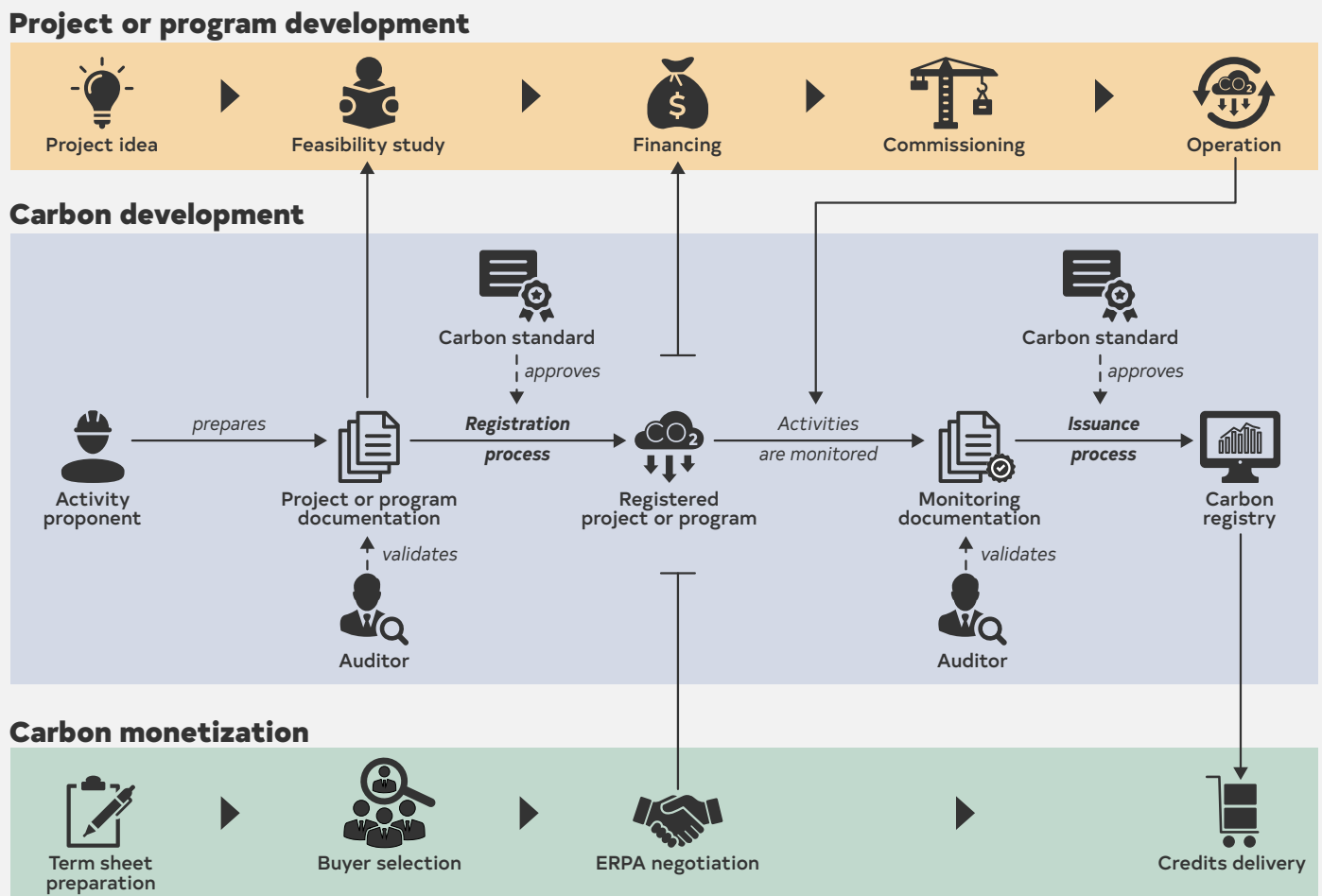
Governments can encourage the development of VCM projects in sectors or regions where VCM activities would clearly be additional. This is the case for sectors or regions not yet adequately covered by government regulation.

Governments can also encourage VCM projects in sectors that are covered by conditional NDC targets, which depend on external financing. In this way, government engagement with the VCM can ensure that VCM projects complement public efforts to mitigate climate change.

## What does the VCM project or program cycle look like?

The process through which VCM projects or programs are designed, climate benefits are generated, and carbon credits are issued and traded is called the project or program cycle. This project or program cycle generally consists of the steps shown in Figure 8.2 and described in more detail below. The cycle for standards that certify projects

**Figure 8.2 | VCM Project or Program Cycle**



(e.g., **Verified Carbon Standard** and **Gold Standard**) and the cycle for those that certify jurisdictional programs (e.g., Jurisdictional and Nested REDD+ — **JNR**— and Architecture for REDD+ Transactions The REDD+ Environmental Excellence Standard—**ART/TREES**) follow comparable steps. A distinct feature of ART/TREES is that program proponents—called participants—must be a national government or subnational entity with jurisdiction. JNR also requires jurisdictional-level proponents, and provides different requirements for nested or jurisdictional projects or programs.

**Planning:** Private or public proponents of mitigation activities choose a **VCM standard** and an approved methodology with which to develop the project or program activities. Stakeholders are identified. Feasibility studies and stakeholder consultations may be conducted or initiated during this step.

**Design:** Proponents prepare the project or program documentation according to the guidelines of the carbon standard under which they wish for the climate benefits from a project or program to be certified. The documentation must demonstrate that the VCM project has applied the chosen methodologies correctly and met the associated requirements.

**Validation:** To be registered, a project or program must be validated by an independent third-party auditor, often known as a Validation/Verification Body (VVB). Validation reports are submitted following an audit of the activity design documents, which typically includes a site visit and consultation with stakeholders.

**Registration:** Prior to registration, validation reports are reviewed by the standard. A project or program is registered if it meets the rules and requirements of the standard under which it is certified. Projects can begin implementation after registration.

**Implementation:** A project or program is implemented as laid out in the documents submitted for registration and validation.

**Monitoring:** Project or program activities are monitored to ensure that emission reductions are generated as described in project documents. Project developers prepare and follow a monitoring plan and record emissions reductions in periodic monitoring reports.

**Verification:** Project or program periodic monitoring reports are verified by an independent, third-party auditor and by the carbon standard under which the project is certified. Verification is required for the issuance of carbon credits.

**Issuance:** After the regulatory body of the carbon standard approves credit issuances, carbon credits are deposited into the proponent's account on the registry of the carbon standard. Carbon credits can be sold, traded, retired, and canceled after they have been issued. The terms of the sale are established in an Emission Reductions Purchase Agreement (ERPA). The sale of carbon credits is recorded in the registry of the carbon standard, which enables the transfer of credits between accounts and the tracing of transactions.

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## Chapter 9

**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Chapter 9: How are carbon credits used?

Carbon credits in the voluntary carbon market (VCM) are used to voluntarily offset greenhouse gas (GHG) emissions beyond any offsetting or GHG reductions and removals mandated by policy. Carbon credits may also be purchased and retired without offsetting, which drives reductions in overall GHG emissions and may enable buyers to claim other social and environmental contributions.

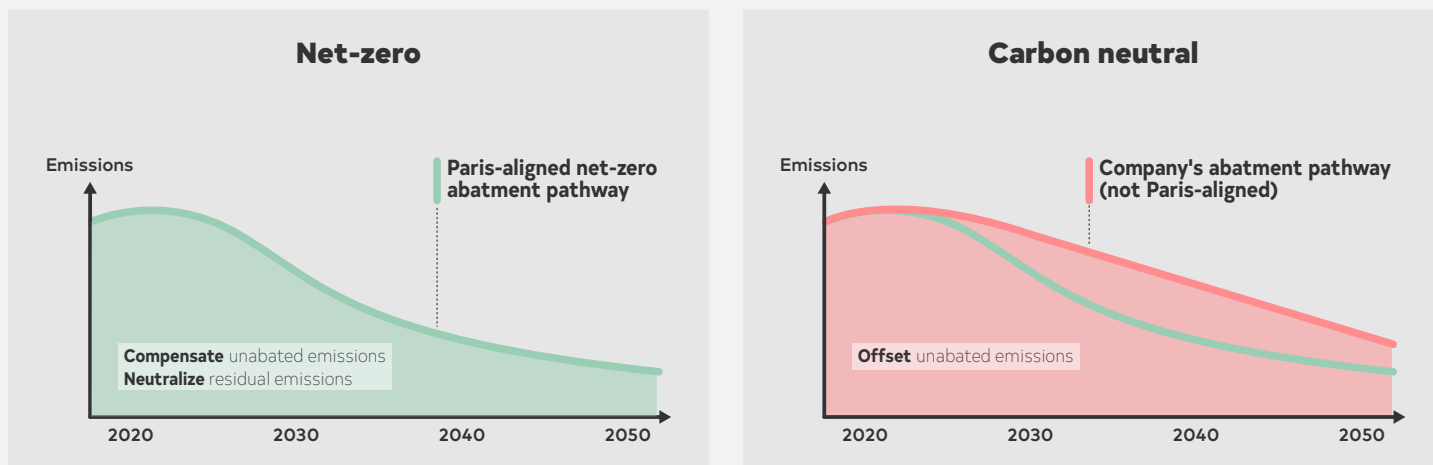
### What is an offset and how are carbon credits used as offsets?

Most **carbon credits** are used to offset GHG emissions that are emitted by business, governing, livelihoods, and leisure activities. “Offsetting” counteracts the harm of GHG emissions by reducing or removing GHG emissions of equal proportion. In the case of GHG offsetting, carbon credits, which represent **verified emission reductions or removals**, are used by emitters to compensate for GHG

emissions. Carbon credits are often referred to as “offsets,” although not all carbon credits are used to offset GHG emissions (as discussed on page 3).

Carbon offsetting can be part of regulated emissions trading systems. For example, under the **Colombian Carbon Tax**, VCM carbon credits can be used by liable entities to offset carbon tax obligations. However, most of the carbon credits generated in the VCM are used by companies to voluntarily offset emissions to meet corporate climate pledges or to offer ‘carbon neutral’ goods and services. As shown in figure 9.1, companies may use carbon credits toward net-zero targets to compensate for unabated emissions and neutralize residual emissions in alignment with the Paris Agreement or toward offsetting of unabated emissions toward carbon neutral goals that are not aligned with the Paris Agreement.

**Figure 9.1** | Net-zero (Paris-aligned) and carbon neutral (non Paris-aligned) strategies



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## What are corporate climate targets?

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More and more companies are setting voluntary climate targets. Corporate climate targets are commitments to reduce some or all of a company's emissions by a certain date in the future. As of September 2021, more than 3,000 companies had joined the United Nation's **Race to Zero campaign** and more than 900 companies had set science-based emission reduction targets following the guidelines of the **Science Based Targets initiative (SBTi)**. Companies buy carbon credits on the VCM to offset GHGs that have been emitted above their reduction target or to be able to claim carbon neutrality. Offsetting is often employed to compensate for those emissions that the company is not (yet) able to reduce internally. When a company has purchased enough carbon credits to offset all emissions generated over a given timeframe, it can claim to be carbon neutral for that period. The Taskforce on Scaling Voluntary Carbon Markets (**TSVCM**) estimated that for this growing demand for carbon credits to be met, the VCM should grow at least **15-fold by 2030 to USD 50 billion**.

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## What are 'carbon neutral' goods and services?

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Corporations use 'carbon neutral' statements to market their products and services. To market a product or service as carbon neutral, companies should comply with the requirements of a carbon neutrality standard such as the **Carbon Neutral Protocol** or **Publicly Available Specification (PAS) 2060**.

This typically involves reducing emissions as much as possible, and then buying enough carbon credits to offset the remaining emissions associated with delivering a good or service. Alternatively, companies can offer consumers the option to individually offset the emissions associated with the good or service they wish to purchase by paying a higher price. For example, airlines offer the option to buy carbon credits to offset GHG emissions from flying.

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## What are the advantages and limitations of carbon offsetting?

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Offsetting an environmental harm with an equivalent good offers a compelling opportunity to compensate for harm done at a price that is lower than the cost of eliminating or abating the original source of harm. Where companies can invest in alternatives rather than directly reducing or removing GHG emissions in their operations or activities, they can save money in achieving environmental targets. In the case of the VCM, carbon offsetting has the additional advantage that verified carbon credits can channel finance to communities and projects where finance is needed, giving buyers a compelling social responsibility narrative to promote. Carbon offsetting through the VCM can contribute to the achievement of host countries' **Nationally Determined Contributions (NDCs)** and Sustainable Development Goals (SDGs), a benefit that is recognized by some **carbon standards**. Governments can engage strategically with the VCM by encouraging the development of projects and programs that align with national priorities, channel finance where it is needed, and contribute to the achievement of SDGs.

Despite these benefits, there are important drawbacks to using carbon credits as offsets. First, carbon offsetting of GHG emissions with an equal quantity of carbon credits does not generate a climate benefit, unless the GHG reductions and removals generated through VCM activities are measured more conservatively than the original emissions. In the absence of strong VCM protocols and controls, the risk is that the opposite is the case and that offsets are not fully compensating for GHGs emitted.

Second, if companies can offset emissions for a cheaper price than it would cost them to reduce or remove GHG emissions in their own operations and supply chains, then companies may be disincentivized from taking climate action. In the same way, if carbon credits allow individuals to ease their guilt of doing carbon-intensive activities—such as flying—individuals may not change their behaviors.

Third, using VCM credits as offsets may come with a risk of **double claiming**. While opinions vary on whether VCM credits are at risk of being double claimed, in general, double claiming would displace corporate or government mitigation action.

**Corresponding adjustments** have been proposed as one way of addressing double claiming in the context of VCM credits and their relation to NDCs. There are also non-offset uses of carbon credits that can help to mitigate this risk, which are discussed below.

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## Are there any non-offset uses of carbon credits?

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Private actors, such as companies, non-governmental organizations (NGOs), and foundations, can avoid the pitfalls of offsetting and accelerate climate change mitigation if they do not use carbon credits as offsets. Instead of buying carbon credits to offset emissions, companies can buy carbon credits to contribute to broader climate finance, climate action goals, or corporate social responsibility goals. Non-offsetting carbon credits are acquired and canceled without being applied against carbon pledges or for the marketing of carbon neutral products.

Non-offset uses for VCM credits move away from the idea that some environmental harms could be permitted as long as they are offset by environmental goods. Instead, non-offset uses promote the achievement of environmental benefits. In addition, carbon credits that are not used as offsets can contribute directly to the achievement or overachievement of **host countries' climate commitments** without any risk of double claiming. In this way, non-offset uses for carbon credits represent a paradigm shift in which the VCM delivers finance for climate change mitigation and sustainable development benefits in a way that truly reduces global emissions.

## Further Reading

1. *Climate Focus. (2021). VCM Related Claims Categorization, Utilization, & Transparency Criteria. Voluntary Carbon Markets Integrity Initiative. <https://vcmintegrity.org/wp-content/uploads/2021/07/Criteria-for-Voluntary-Carbon-Markets-Related-Claims.pdf>*
2. *Schneider, L., Healy, S., Fallasch, F., De León, F., Rambharos, M., Schallert, B., Holler, J., Kizzier, K., Peterson, A., & Hanafi, A. (2020). What Makes a High Quality Carbon Credit. World Wildlife Fund (WWF-US), Environmental Defense Fund (EDF) and Oeko-Institut.*
3. *World Bank. (2016). Carbon Credits and Additionality: Past, Present, Future. (PMR Technical Note 13. Partnership for Market Readiness). <https://openknowledge.worldbank.org/bitstream/handle/10986/24295/K8835.pdf?sequence=2&isAllowed=y>*

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# The Voluntary Carbon Market Explained

## Chapter 10



**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting



## Chapter 10: How are carbon and community rights considered in the voluntary carbon market?

Carbon rights are important in the voluntary carbon market (VCM) because they determine who can participate in and benefit from VCM activities. Carbon rights are assigned based on control of an asset or control of a mitigation activity. The recognition of carbon rights is particularly important for Indigenous Peoples and local communities (IPLCs), who are the statutory or customary owners of many landscapes where VCM activities are developed. IPLCs may exercise their rights in the VCM as project proponents or partners, through **benefit sharing arrangements**, and through consultation processes.

### What are carbon rights?

Carbon rights assign to the holder the right to benefit from greenhouse gas (GHG) emission reductions or removals. Carbon rights are distinct from tradable carbon credits. **Carbon credits** represent GHG emission reductions or removals verified and issued in accordance with the rules of a particular **carbon standard**. Carbon rights define the underlying entitlement to benefit from GHG emission reductions or removals associated with an asset (e.g., land or forest) or activity (e.g., a VCM project). Those who hold carbon rights can **transact and claim** the proceeds from the sale of carbon credits. Carbon rights may also entitle holders to participate in **benefit sharing agreements**. The issue of carbon rights is particularly relevant and controversial in the context of **nature-based solutions (NbS)** and land sector carbon projects and programs. Uncertain, weak,

or absent land titles and forest tenure create uncertainty about who can benefit from carbon credits. Where carbon rights relate to land, they are often a contested and highly political matter.

### How are carbon rights determined?

In general, carbon rights can either be based on the legal **control of the underlying asset** or on the **legal control of the emission reduction and removal activity**:

**Control of the infrastructure or land asset** requires an entity to demonstrate that they hold property rights or entitlement—e.g., ownership, management, access, and usufruct or other use rights—over the asset that underpins the GHG emission reduction or removal activity. This can relate to the land or forest where a project or program is implemented or the physical infrastructure of an activity. When mitigation activities take place in the land sector, rights over assets are generally determined by the applicable land and forest tenure regime. As such, secure and clear land and forest tenure facilitates the assignment of clear carbon rights for **NbS** projects and programs.

**Control of the mitigation activity** requires an entity to demonstrate that they enable and control the GHG emission reduction or removal activity. Rights may be claimed based on providing services, finance, or technology (e.g., **by project developers and financiers**), by actively participating

in the GHG emission reduction or removal activities (e.g., local communities), or by having regulatory power (e.g., national or subnational governments). In non-NbS projects or programs, most carbon rights are based on the control of the mitigation activity. In the case of NbS activities, developers or governments obtain the right to quantify, monitor, and issue GHG emission reductions and removals generated on land they do not own in return for all or a portion of the carbon rights.

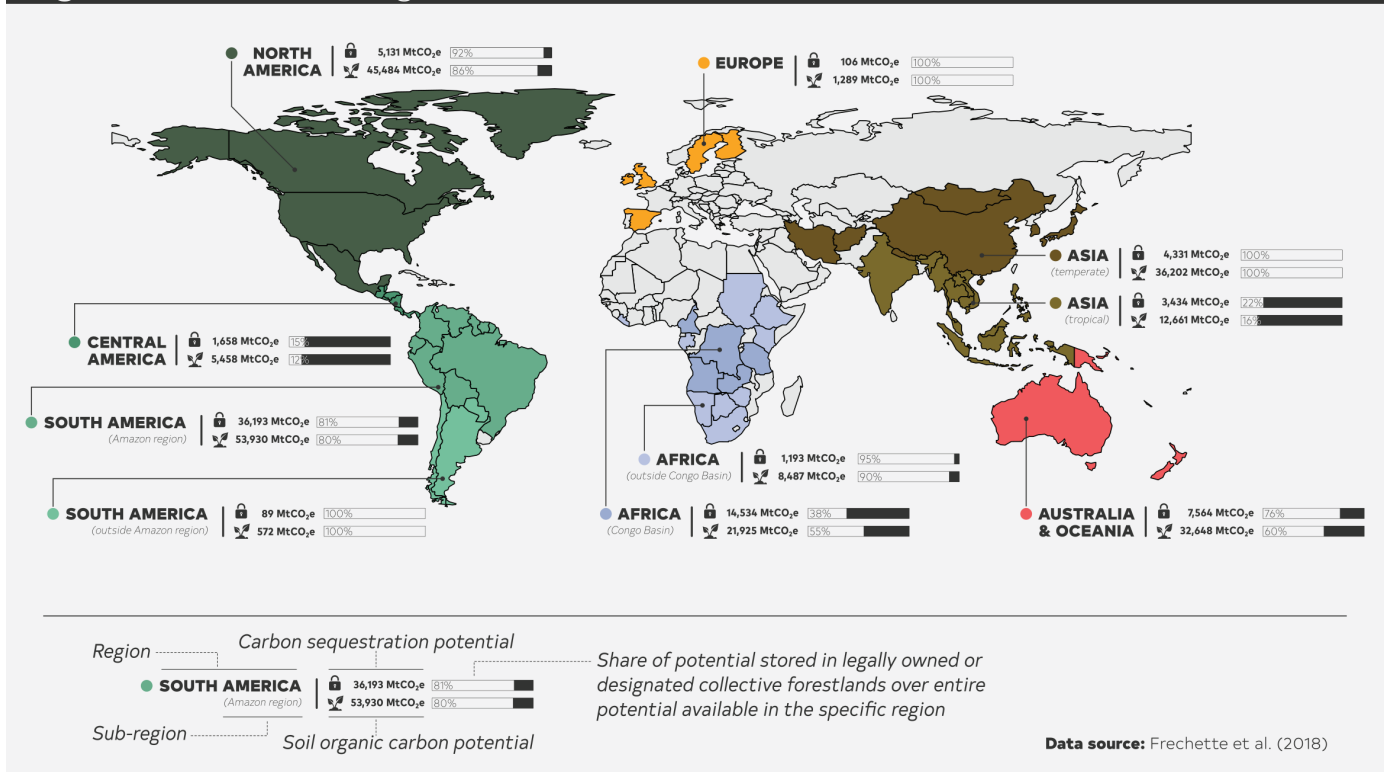
The assignment of carbon rights is not a straightforward task, especially when tenure rights are unclear or when the entity that has control over the asset is not the same entity as the one controlling the activity. This can occur, for instance, when communities hold forest property rights in a country but where governments are taking the lead in developing and implementing forestry VCM projects or programs. Clear, transparent, and participatory **benefit sharing arrangements** are crucial in these situations.

## How are the rights of Indigenous Peoples and local communities claimed and recognized in the VCM?

Globally, IPLCs are the formal, customary, or ancestral managers of large landscape and forest areas. Where IPLCs are able to **determine ecosystem management**, their territories exhibit high rates of **carbon storage**, **biodiversity**, and **other ecosystem services**, and **reduced deforestation and degradation**. Indigenous Peoples' lands are estimated to include **at least 36%** of intact forest ecosystems globally.

Figure 10.1 shows carbon storage in IPLC lands by continents and forest regions. IPLCs were estimated to manage **at least 17%**—or nearly 300 metric tons—of the total carbon stored in 64 countries globally, including in all of the major rainforest regions. Globally, the carbon stored in forest lands to which IPLCs have legal rights may be as much as **37.7 billion tonnes** of carbon. Depending on how tenure rights are allocated,

**Figure 10.1** | Carbon storage in IPLC lands



IPLC lands have potential to sequester **8.69 to 12.93 million tonnes of CO<sub>2</sub>** between 2020 and 2050.

The full and equitable participation of IPLCs is required for the successful implementation of VCM projects and programs in their territories. Where IPLCs hold rights over forests and assets, they can claim carbon rights. However, most countries fail to fully recognize or formalize the carbon rights of IPLCs by attributing to them control over natural resources or recognizing their services as stewards of these natural resources. Lack of rights can result in insufficient engagement with, weak **benefit sharing** for, and disenfranchisement or displacement of IPLCs.

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## How do Indigenous Peoples and local communities participate in the VCM?

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IPLCs can directly engage in the development of projects on their territories or enter into **benefit sharing agreements** with governments or project developers. IPLCs—often in cooperation with expert advisors from non-governmental organizations or the private sector—can determine project or program design, implementation, and terms. Depending on capacity, IPLCs may partner with other organizations for technical support and to facilitate credit trading. In the case of **ART/TREES** (Architecture for REDD+ [Reducing Emissions from Deforestation and Degradation Plus] Transactions, The REDD+ Environmental Excellence Standard), version 2.0 of the standard will allow the registration of subnational scale programs, including one or multiple Indigenous territories, until the end of 2030. In this case, Indigenous communities could be the proponents of VCM activities.

Alternatively, IPLCs can decide to enter into **benefit sharing agreements** with those proposing and designing GHG mitigation activities. **High-quality projects** include transparent benefit sharing agreements with IPLCs and other local stakeholders. **Jurisdictional REDD+ programs** and **NbS** sector projects often include benefit sharing agreements that ensure that IPLCs receive a share of **REDD+** payments. VCM project and program developers need to follow benefit sharing requirements set by governments in host countries. Inclusion in benefit sharing plans set by governments does not confer carbon rights to IPLCs.

### **IPLCs' land, resource and carbon rights must be considered from the beginning of project or program development.**

Activity proponents working with IPLCs must budget and invest sufficient time and financial resources to build trust with local communities. When engagement is done effectively, VCM projects and programs can strengthen the position of IPLCs in negotiating, securing, and maintaining land and resource rights. When IPLCs have recognized land and forest rights, they are able to counter ecosystem conversion and degradation, which benefits both communities and climate change mitigation goals.

For any project or program that engages or impacts IPLCs, **carbon standards** require that communities be consulted in all stages of activity development. Project and program developers must demonstrate compliance with Indigenous Peoples' right to Free, Prior and Informed Consent (FPIC) as required by the United Nations Declaration on the Rights of Indigenous Peoples. FPIC gives Indigenous Peoples the right to grant or withhold consent to projects that will impact them or take place on their territories.

## Further Reading

1. Fa, J., Watson, J., Leiper, I., Potapov, P., Evans, T., Burgess, N., Molnár, Z., Fernández-Llamazares, Á., Duncan, T., Wang, S., Austin, B., Jonas, H., Robinson, C., Malmer, P., Zander, K., Jackson, M., Ellis, E., Brondízio, E., & Garnett, S. (2020). Importance of Indigenous Peoples' lands for the conservation of Intact Forest Landscapes. *Frontiers in Ecology and the Environment*, 18. <https://doi.org/10.1002/fee.2148>
2. Frechette, A., Ginsburg, C., & Walker, W. (2018). A Global Baseline of Carbon Storage in Collective Lands. *Rights and Resources Initiative*. [https://rightsandresources.org/wp-content/uploads/2018/09/A-Global-Baseline\\_RI\\_Sept-2018.pdf](https://rightsandresources.org/wp-content/uploads/2018/09/A-Global-Baseline_RI_Sept-2018.pdf)
3. Lofts, K., Frechette, A., & Kumar, K. (2021). Status of Legal Recognition of Indigenous Peoples', Local Communities' and Afro-descendant Peoples' Rights to Carbon Stored in Tropical Lands and Forests. *Rights and Resources Initiative and McGill University*. <https://doi.org/10.53892/KMMW8052>
4. Streck, C. (2020). Who Owns REDD+? Carbon Markets, Carbon Rights and Entitlements to REDD+ Finance. *Forests*, 11(9), <https://doi.org/10.3390/f11090959>
5. Sze, J. S., Carrasco, L. R., Childs, D., & Edwards, D. P. (2021). Reduced deforestation and degradation in Indigenous Lands pan-tropically. *Nature Sustainability*, 1–8. <https://doi.org/10.1038/s41893-021-00815-2>

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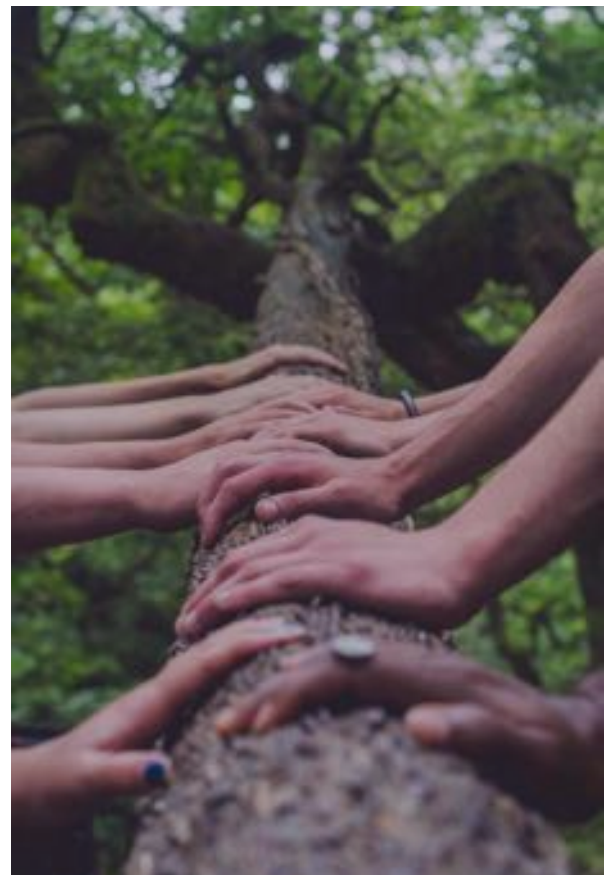
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# The Voluntary Carbon Market Explained

## Chapter 11



**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

## Chapter 11: How are VCM benefits shared with local communities?

Local communities, Indigenous Peoples, landowners, and other stakeholders involved in carbon projects or programs may receive benefits directly from the sale of carbon credits or through benefit sharing arrangements. Benefit sharing arrangements identify how monetary and non-monetary benefits will be allocated to which stakeholders and how the distribution will take place.

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### What is benefit sharing?

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Benefit sharing is the allocation of the proceeds from the commercialization of **carbon credits** to local stakeholders involved in a carbon project or program. The goal of benefit sharing is to reward local actors for past contributions to greenhouse gas emission reductions and removals and to incentivize future contributions to climate change mitigation activities. It can also be used to avoid future emissions by, for example, rewarding conservation and good stewardship of ecosystems. In addition to incentivizing relevant actors to participate in and support the implementation of carbon projects and programs, benefit sharing aims to increase the legitimacy of carbon markets by providing tangible benefits from activities that involve or affect local stakeholders.

Benefit sharing is primarily used in **nature-based solutions (NBS)** projects, such as avoided deforestation or community forest projects, but also applies to other community-based carbon activities.

Benefit sharing arrangements are often designed to reward and incentivize the activities of Indigenous Peoples, dependent communities, smallholder farmers and other actors whose livelihoods intersect with forest conservation and sustainable land management activities. Benefit sharing arrangements outline who will bear the costs and benefits of carbon projects and programs, through which institutional arrangements, and under which conditions, as well as how decisions are made and implemented. When agreements are established in an inclusive, transparent, and equitable manner, actors are more likely to participate in carbon projects or programs.

Benefit sharing is relevant to governments in two ways:

1. Governments are required to develop government-driven benefit sharing mechanisms for jurisdictional programs and project activities that they sponsor.
2. Governments can regulate private benefit sharing by creating guidelines for benefit sharing best practices.

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### What are the best practices for benefit sharing?

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Benefit sharing agreements should be based on the right to Free, Prior and Informed Consent (FPIC) of **Indigenous Peoples and local communities** (IPLCs). Consequently, benefit sharing negotiations should start with a clear understanding of land and resource rights, the needs

and priorities of affected peoples and communities, and potential barriers to participation.

The **Designing Benefit Sharing Arrangements: A Resource for Countries platform** from the World Bank Forest Carbon Partnership Facility (FCPF) and the BioCarbon Fund Initiative for Sustainable Forest Landscapes (BioCF ISFL) outlines the following key elements and approaches for benefit sharing arrangements:



**Project or program managers need to identify all relevant beneficiaries.**

Beneficiaries include groups who are contributing directly to generating or sustaining emission reductions and removals, have historically managed land or contributed to avoided emissions in the project or program area, and those who require incentives to contribute to mitigation goals. Beneficiaries may include IPLCs, government entities, private landowners, and any actors who engage either in behavior that should be rewarded (e.g., conservation) or behavior that should be changed (e.g., deforestation).



**Benefit sharing arrangements should be transparent.** They should reveal risks, challenges, successes, and rewards of mitigation activities as well as how benefits are allocated between stakeholders. Where there are existing

or potential conflicting interests, these should be discussed openly with beneficiaries. Managing expectations is essential to maintain trust and legitimacy for stakeholders. Formal and informal, statutory and customary land and carbon rights inform benefit sharing arrangements and facilitate effective benefit distribution. Cost-benefit analyses can help stakeholders understand and make informed decisions about their role in the mitigation activity.



**Successful benefit sharing depends on effective, extensive, and frequent consultations with stakeholders.**

Consultations build and maintain trust and ensure that arrangements continue to meet beneficiaries' needs. Through consultation, beneficiaries should set criteria for their participation in mitigation activities to ensure that benefits reflect stakeholders' needs and priorities. Consultations should be initiated before the activity is implemented and occur regularly throughout all stages of a project or program so that benefit sharing arrangements can be revised based on changing conditions and project outcomes.



**Benefit sharing should be linked to the contributions from stakeholders to mitigation activities.** Benefits can compensate transaction, implementation and opportunity costs incurred by stakeholders.

Benefits can be output-based, in which case local stakeholders are rewarded for achieving mitigation or conservation outcomes, or input-based, in which case local stakeholders receive benefits for carrying out activities that maintain ecosystems.



Benefits can be monetary or non-monetary. Non-monetary benefits may include training, capacity-building, provision of infrastructure or social services, agricultural inputs, technology, strengthened land tenure or governance, access to ecosystem services, and introduction of alternative livelihood or revenue-generating activities.



**Benefit sharing arrangements can also mitigate existing inequalities in beneficiary communities.**

This can be done by involving Indigenous Peoples, smallholders, forest communities and other historically marginalized groups even if they are not agents of deforestation. Benefit sharing can help to redress socioeconomic inequality, recognize land and carbon rights, and sustain climate change mitigation outcomes. When benefit sharing does not address inequalities, it can exacerbate existing socioeconomic divisions, land tenure insecurity, gender discrimination, and elite capture of resources. Benefits may include capacity-building needed for stakeholders to achieve or receive benefits.

**Sufficient financial, administrative, and technical resources to implement and maintain benefit sharing arrangements must be budgeted.**

Benefit distribution is determined by differentiated beneficiary groups and the mechanisms required to share different types of benefits. Benefits may be distributed based on future or past contributions to reduced or avoided emissions, beneficiaries' level of need for incentives, and/or indicators such as Sustainable Development Goals. Project and program implementers should be prepared to provide upfront resources to design and fully implement consultations and benefit sharing arrangements. Engaging existing institutions and payment for ecosystem services programs can reduce start up and transaction costs.

**It is important to remember that there is no one-size-fits-all for benefit sharing.**

Arrangements should be developed based on the specific land tenure, governance, land use, historical and political conditions. They depend to a large extent on local circumstances and conditions. Therefore, benefit sharing arrangements should not be scaled up or applied from one project to another without careful prior assessment and consultation.



## Further Reading

1. FCPF. (2018). *REDD+ Benefit Sharing. Forest Carbon Partnership Facility.* <https://www.forestcarbonpartnership.org/redd-benefit-sharing>
2. FCPF and BioCF ISFL. (2020). *Designing Benefit Sharing Arrangements: A Resource for Countries.* <https://www.forestcarbonpartnership.org/bio-carbon/en/index.html>
3. Loft, L., Pham, T. T., & Luttrell, C. (2014). *Lessons from Payments for Ecosystem Services for REDD+ Benefit-Sharing Mechanisms (CIFOR Infobriefs).* Center for International Forestry Research (CIFOR). <https://doi.org/10.17528/cifor/004488>
4. O’Gara, K. (2020, September 9). *Guest blog: Reaping the rewards of well-designed benefit sharing arrangements.* UN-REDD Programme. <https://www.un-redd.org/post/reaping-the-rewards-of-well-designed-benefit-sharing-arrangements>
5. Parizat, R. (2020, February 25). *Getting the incentives right on forest protection—Guest blog.* UN-REDD Programme. <https://www.un-redd.org/post/getting-the-incentives-right-on-forest-protection-guest-blog>
6. Streck, C. (2020). *Who Owns REDD+? Carbon Markets, Carbon Rights and Entitlements to REDD+ Finance.* *Forests*, 11(9), <https://doi.org/10.3390/f11090959>
7. World Bank Group. (2019). *Benefit Sharing at Scale: Good Practices for Results-Based Land Use Programs.* International Bank for Reconstruction and Development / The World Bank. [https://openknowledge.worldbank.org/handle/10986/32765?CID=CCG\\_TT\\_climate\\_exchange\\_EN\\_EXT](https://openknowledge.worldbank.org/handle/10986/32765?CID=CCG_TT_climate_exchange_EN_EXT)

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# The Voluntary Carbon Market **Explained**

## Chapter 12



**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

## Chapter 12: How does the VCM support nature-based solutions?

Nature-based solutions (NbS) are actions to protect, sustainably manage, and restore ecosystems with their benefits for humans and nature. Identified as one of the most important and cost-effective tools to mitigate climate change while providing important social, economic, and ecological benefits, NbS could deliver about one-third of the emission reductions and removals needed to keep warming below 1.5°C (as estimated by Roe et al. 2019 and Griscom et al. 2017, see *further reading* below).

### Which NbS activities are supported by the VCM?

The voluntary carbon market (VCM) supports NbS through the development of projects or programs that sequester and avoid the emission of greenhouse gases (GHGs) and trade of carbon credits generated by those activities. The VCM NbS projects or programs that can be certified by VCM **carbon standards** fall into three main classes: forestry, agriculture, and wetlands.



**Forestry** projects and programs provide the vast majority of NbS credits in the VCM. Avoided forest conversion and reforestation are the NbS with greatest potential to deliver climate change mitigation as well as multiple other ecological and social benefits.

The largest supply of VCM credits come from “Reducing Emissions from Deforestation and Degradation plus conservation, sustainable management, and enhancement of forest stocks” (**REDD+**) activities. REDD+ may be developed to generate carbon credits at an individual project scale (e.g., avoided deforestation projects) or at the scale of **jurisdictional REDD+ programs**.

Other types of forestry NbS that can generate carbon credits are Afforestation, Reforestation and Revegetation (ARR) and Improved Forest Management (IFM). ARR projects restore degraded forest land, reforest previously forested land, and convert non-forest land to forests through human intervention. IFM projects increase carbon stocks or reduce GHG emissions in both natural forests and plantations, through activities such as reduced-impact logging and extended harvest cycles.



**Agricultural** NbS projects and programs include regenerative agriculture practices that sequester soil carbon, such as no-tillage, cover crop rotation and biochar. Agricultural NbS also includes activities that reduce emissions of methane and nitrous oxide, such as livestock and fertilizer management. Another type of agricultural NbS that can generate carbon credits is agroforestry—when trees are planted in

the same land areas used for crops or livestock. Projects to restore and avoid the conversion of grasslands may also fall under agricultural NbS. Sustainable grassland management projects may include reducing land used for livestock grazing, avoided conversion to crop production, managing for fire and drought, building or restoring soil carbon, and planting of vegetation.



**Wetlands**—including coastal wetlands (mangroves, marshes and seagrass) and peatlands—hold the greatest amount of carbon stocks per unit area of any ecosystem. Wetlands are important carbon sinks and can become major sources of emissions when damaged or converted. Thus, avoided impacts on and restoration of wetlands are important climate change mitigation strategies. Coastal wetland NbS projects or program activities are often referred to as ‘blue carbon,’ and include avoided conversion or degradation of coastal ecosystems; restoration of mangroves, marshes, and seagrasses; and enhancing the growth of kelp or shellfish. Peatland NbS activities include avoided conversion or degradation of peatlands, rewetting of drained peatlands, and restoration of peatland vegetation.

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### Which standards certify NbS credits?

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To generate credits that are tradable in the VCM, NbS projects and programs need to be covered by methodologies that guide the quantification of GHG emission reductions and removals.

The Verified Carbon Standard (**VCS**), the Gold Standard (**GS**), the Climate Action Reserve (**CAR**), and the American Carbon Registry (**ACR**) certify credits from NbS projects and programs. There are also standards that exclusively certify credits from **REDD+ programs**. The NbS project types and methodologies for which VCS, GS, CAR, and ACR issue credits (as of October 2021) and the standards that certify REDD+ are detailed in Table 12.1.

NbS projects often provide social, ecological and sustainable development benefits in addition to climate benefits and can support the achievement of Sustainable Development Goals (SDGs). **Standards** that credit SDG benefits of projects through labels or the issuance of tradable assets are still relatively new, and robust methodologies are under development. The Climate, Community and Biodiversity Standard (**CCB**) and the Sustainable Development Verified Impact Standard (**SD VISTa**) and the Gold Standard for the Global Goals (**GS4GG**) allow the certification of socio-economic benefits.

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### What is the demand for NbS credits in the VCM?

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Although NbS are essential to achieve global climate change mitigation goals, compliance carbon markets have historically excluded NbS credits due to **concerns about permanence, conservative baselines, and additionality**. However, in the last few years, demand for NbS credits in the VCM has expanded rapidly (see Figure 12.1) as voluntary buyers are attracted to the multiple social-environmental benefits and the large inventories of NbS projects and programs. NbS credits are now preferred by voluntary buyers and the **supply of credits from NbS projects and programs is increasing**.

**Table 12.1: NbS project types for which standards issue credits**

Standard	Forestry	Agriculture	Wetlands
Verified Carbon Standard (VCS)	<p><b>REDD+</b> for avoiding planned and unplanned deforestation and degradation in forests and wetlands; mosaic and landscape-scale <b>REDD+</b>; improved forest management (IFM) through extension of rotation age; avoided ecosystem conversion; preventing planned degradation; IFM in temperate and boreal forests; IFM through reduced impacted logging; avoided degradation through fire management; Canadian forest carbon offsets (<b>Verra methodologies</b>)</p>	<p>Sustainable agricultural land management; soil carbon; N2O emission reductions in crops; sustainable grassland management; adjustment of fire and grazing for grasslands management; improved agricultural land management; grassland avoided ecosystem conversion; reduction of methane emissions from ruminants; use of organic bedding material (<b>Verra methodologies</b>)</p>	<p>Avoided planned conversion of peat swamp forests; coastal wetland creation; rewetting drained tropical and temperate peatlands; tidal wetland and seagrass restoration (<b>Verra methodologies</b>)</p>
Gold Standard (GS)	<p>Afforestation/ Reforestation (<b>GS impact quantification</b>) GS does not issue credits for REDD+ projects due to concerns about leakage and baseline uncertainty (<b>GS Nbs</b>)</p>	<p>Soil carbon; low tillage; methane reduction; livestock; water impacts (<b>GS impact quantification</b>)</p>	<p>Blue carbon (<b>GS Nbs</b>)</p>
American Carbon Registry (ACR)	<p>Afforestation/ Reforestation of degraded lands; IFM on Canadian and non-federal U.S. lands; IFM on non-industrial private lands (<b>ACR Methodologies</b>)</p>	<p>Avoided conversion of grass- and shrublands to crop production (<b>ACR Methodologies</b>)</p>	<p>Restoration of California deltaic and coastal wetlands; Restoration of Pocosin wetlands (<b>ACR Methodologies</b>)</p>
Climate Action Reserve (CAR)	<p>Forests; Mexican forests; urban forest management and tree planting (<b>CAR Protocols</b>)</p>	<p>Biochar; grasslands; Canadian grasslands; livestock in Mexico and in the U.S.; nitrogen management; rice cultivation (<b>CAR Protocols</b>)</p>	<p>No protocols for wetlands (<b>CAR Protocols</b>)</p>

**Table 12.1: NbS project types for which standards issue credits continued**

Standard	Forestry	Agriculture	Wetlands
Jurisdictional and Nested REDD+ Framework (JNR)	<p><b>JNR</b> and <b>ART/TREES</b> specifically provide methodologies to certify jurisdictional-scale <b>REDD+ credits</b>. So far, no credits have been issued under JNR or ART/TREES.</p>	<p>JNR and ART/TREES do not provide methodologies for Agriculture or Wetlands. However, <b>REDD+</b> activities may include peatlands, mangroves or other wetland ecosystems.</p>	
Architecture for REDD+ Transactions' The REDD+ Environmental Excellence Standard (ART/TREES)			

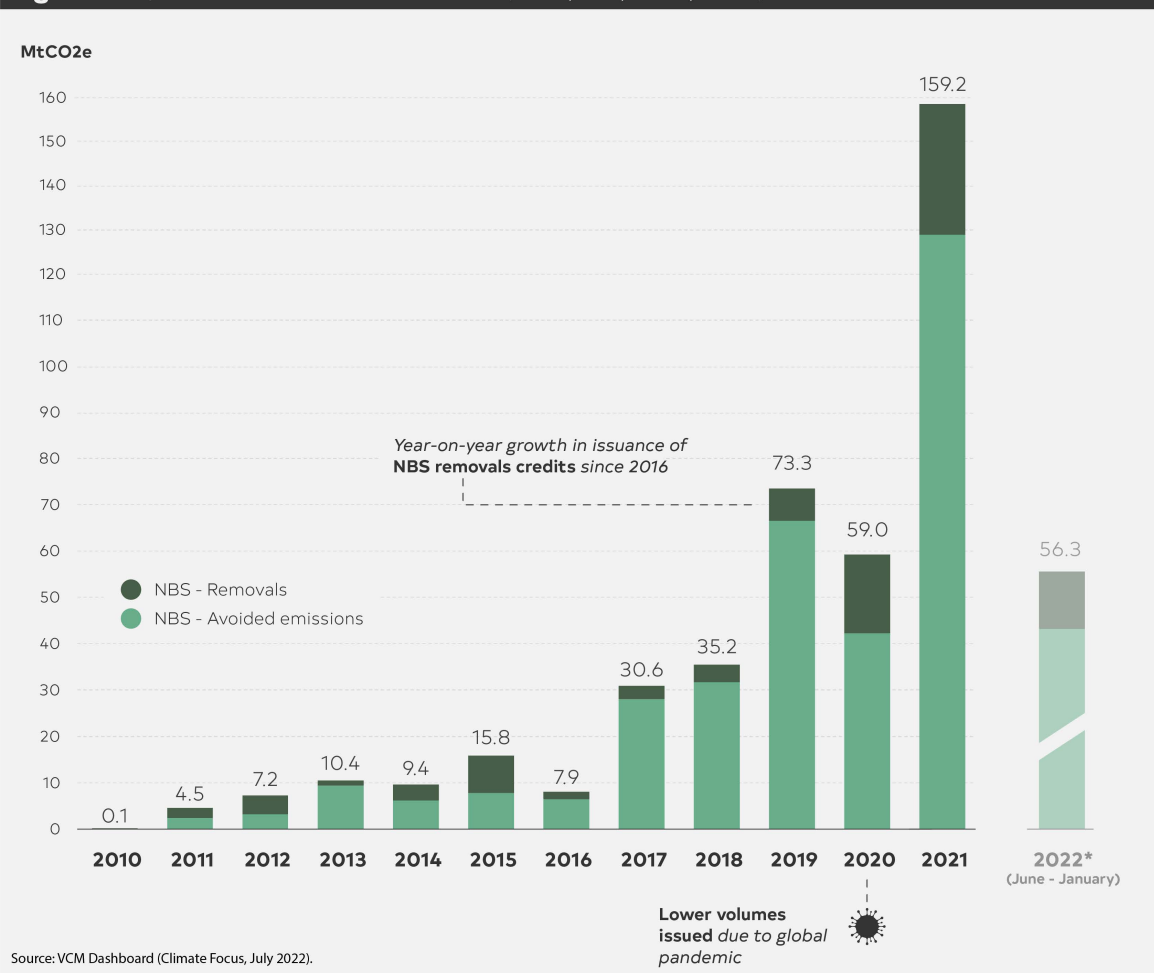
The **Taskforce on Scaling the Voluntary Carbon Market** estimates that the VCM needs to grow to 15 times its current size by 2030 to keep global warming below 1.5°C, and that at least two-thirds of carbon credits generated per year should come from NbS. Investment and demand for credits from the VCM at this scale would accelerate NbS and secure needed climate, ecosystem services, biodiversity, and socio-economic benefits.

There are also questions about the types of NbS credits that buyers demand and that the VCM can support. **Private sector buyers** may prefer project-level credits over jurisdictional-level credits because the climate and socio-economic impacts at the project level are easier to understand, audit, and communicate. Clear narratives about huge potential benefits of large-scale NbS can guide buyers to invest in these essential activities.

Governments can engage in jurisdictional programs to access payments that support forest governance and public programs. As adopting and implementing public policies takes time, governments can support investment in carbon projects and programs in areas where ecosystems are lost rapidly and where the reach of public institutions is weak.

Carbon projects and programs in the VCM should never replace public action. However, the ability of VCM projects and programs to be designed and implemented relatively quickly and in areas out of reach of public policy makes them an important source of finance for and driver of climate change mitigation. VCM activities also attract foreign direct investments in hard currencies into sectors that are often cut off from financial services and credit access. Through REDD+ nesting, defined safeguards, and guidance on benefit sharing, governments can ensure that carbon projects are of environmental and social integrity.

**Figure 12.1** | NBS carbon credits issued (VCS, GS, ACR, CAR)



### Box 12.1: High Forest Low Deforestation (HFLD) Countries

Under VCM rules, GHG emission reductions and consequent results-based payments for avoided deforestation or degradation can only be generated where there are measured, evident threats to forests. Credits traded in the VCM represent reductions in GHG emissions calculated against a counterfactual baseline scenario. This means that VCM credits are not designed to incentivize or fund forest conservation in areas with low rates of deforestation, such as HFLD countries. The underlying logic of carbon markets therefore leaves limited scope for conservation projects and programs to access carbon finance.

However, there is interest in finding incentives for HFLD countries that could enable access to market finance. The **ART/TREES** standard (version 2.0) provides for carbon market payments for HFLD countries, but it remains to be seen how the proposed rules are applied by countries. Additionally, mechanisms outside of the VCM should be developed to support HFLD areas for the service of providing vital carbon sinks and safeguarding natural ecosystems and biodiversity. Such mechanisms could be implemented in the context of the **Warsaw Framework for REDD+**, which explicitly recognizes the importance of conservation. Conservation could be rewarded through alternative finance or results-based payments.

## Further Reading

1. Gehrig-Fasel, J., Gehrid, M., & Hewlett, O. (2021). *Nature-based Solutions in Carbon Markets*. [https://www.carbon-mechanisms.de/fileadmin/media/dokumente/Publikationen/Bericht/NbS\\_Carbon\\_Markets\\_2021\\_04\\_29\\_final\\_5515\\_.pdf](https://www.carbon-mechanisms.de/fileadmin/media/dokumente/Publikationen/Bericht/NbS_Carbon_Markets_2021_04_29_final_5515_.pdf)
2. Griscom, B. W., Adams, J., Ellis, P. W., Houghton, R. A., Lomax, G., Miteva, D. A., Schlesinger, W. H., Shoch, D., Siikamäki, J. V., Smith, P., Woodbury, P., Zganjar, C., Blackman, A., Campari, J., Conant, R. T., Delgado, C., Elias, P., Gopalakrishna, T., Hamsik, M. R., ... Fargione, J. (2017). *Natural climate solutions*. *Proceedings of the National Academy of Sciences*, 114(44), 11645–11650. <https://doi.org/10.1073/pnas.1710465114>
3. *Nature-based Solutions*. (2020, January 31). IUCN. <https://www.iucn.org/theme/nature-based-solutions/about>
4. Roe, S., Streck, C., Beach, R., Busch, J., Chapman, M., Daioglou, V., Deppermann, A., Doelman, J., Emmet, J., Engelmann, J., Fricko, O., Frischmann, C., Funk, J., Grassi, G., Griscom, B., Havlik, P., Hanssen, S., Humpenöder, F., Landholm, D., ...Lawrence, D. (2021). *Land-based measures to mitigate climate change: Potential and feasibility by country*. *Global Change Biology*, 00, 1–34.
5. Roe, S., Streck, C., Obersteiner, M., Frank, S., Griscom, B., Drouet, L., Fricko, O., Gusti, M., Harris, N., Hasegawa, T., Hausfather, Z., Havlík, P., House, J., Nabuurs, G.-J., Popp, A., Sánchez, M. J. S., Sanderman, J., Smith, P., Stehfest, E., & Lawrence, D. (2019). *Contribution of the land sector to a 1.5 °C world*. *Nature Climate Change*, 9(11), 817–828. <https://doi.org/10.1038/s41558-019-0591-9>
6. *Taskforce on Scaling Voluntary Carbon Markets*. (2021). *Final Report*. [https://www.iif.com/Portals/1/Files/TSVCM\\_Report.pdf](https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf)

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**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

# The Voluntary Carbon Market **Explained**

**Chapter 13**



## Chapter 13: How does the voluntary carbon market incorporate REDD+?

The voluntary carbon market (VCM) incorporates Reducing Emissions from Deforestation and Degradation plus (REDD+) through the certification and trade of carbon credits that are generated by projects and programs that seek to reduce deforestation. Carbon standards have developed methodologies to certify certain types of REDD+ activities, including standards focused specifically on the certification of jurisdictional-scale REDD+.

### What is REDD+?

REDD+ stands for the international framework of “Reducing Emissions from Deforestation and Degradation plus conservation, sustainable management, and enhancement of forest stocks.” REDD+ describes an incentive framework under the United Nations Framework Convention on Climate Change (UNFCCC) for developing countries to reduce forest emissions and increase the sequestration of carbon in forests. In 2013, the Conference of the Parties (COP) to the UNFCCC adopted the “Warsaw Framework for REDD+ (WFR),” a set of seven UNFCCC decisions, as the rules governing REDD+. The WFR provides criteria for developing countries to implement REDD+, measure results, implement safeguards, and access finance. Countries are encouraged to develop national or jurisdictional programs to guide implementation of REDD+. National REDD+ programs define measures to address deforestation, conserve and enhance forest carbon stocks, establish a forest reference emissions level, establish forest monitoring systems, and define **benefit sharing** and safeguards.

The WFR requires that countries develop national accounting frameworks for REDD+. Subnational accounting and implementation can serve as interim steps towards national implementation. Participating countries can decide on the REDD+ measures they will take to reduce deforestation and degradation, enhance forest carbon stocks, or sustainably manage forests. Participation in market-based approaches, including the VCM, is one way that countries can achieve REDD+ results. Figure 13.1 provides an overview of the development of REDD+.

Governments can support jurisdictional REDD+ programs under **carbon market standards** such as Verra’s Jurisdictional and **Nested REDD+ Framework (JNR)** and the **Architecture for REDD+ Transactions’ The REDD+ Environmental Excellence Standard (ART/TREES)**. Governments can also support project-level REDD+ activities on their territory as part of public measures to reduce deforestation and forest degradation or to encourage private project developers to develop and finance projects and programs that contribute to REDD+ outcomes.

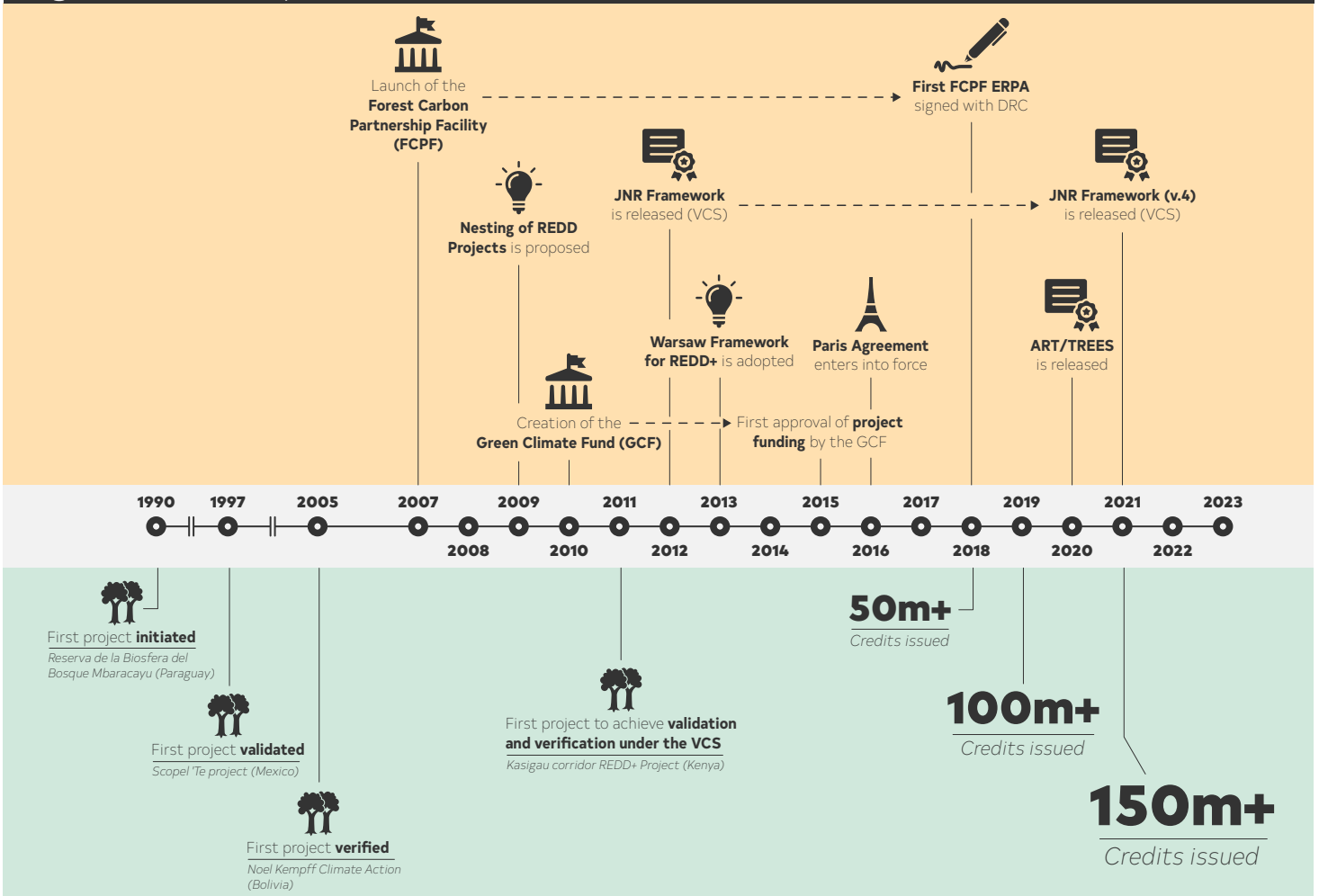
Governments can facilitate REDD+ investments in the context of jurisdictional programs or projects by clarifying and securing land, resource, and **carbon rights**. To encourage VCM investment, countries can develop regulatory environments that facilitate direct investment in REDD+ through the VCM. Government agencies may also be project developers or partners.

Government agencies can partner with local landowners, civil society organizations, or communities to develop REDD+ projects and sell credits.

The WFR creates the necessary architecture to reward developing countries through results-based payments for REDD+ benefits. The WFR also recognizes that market-based finance such as the VCM may require additional criteria to receive payments, such as independent verification of results. The Paris Agreement opens the possibility for forest carbon and REDD+ credits to be transacted under the modalities that govern **cooperative approaches under Article 6** of the Agreement.

Countries can develop cooperative REDD+ programs under Article 6.2 of the Paris Agreement, and REDD+ projects may be accredited under Article 6.4 of the Paris Agreement, provided they meet the mechanism's requirements and are approved by governments. Private actors can seek authorization to participate in such programs and projects under both Article 6.2 and 6.4. While REDD+ programs can also continue under the VCM, **authorization under Article 6** is necessary if participants want to ensure that greenhouse gas (GHG) reductions are backed by "**corresponding adjustments**" and do not count against the host country's nationally determined contributions.

**Figure 13.1 | Development of REDD+**



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## How is REDD+ integrated in the VCM?

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REDD+ is one category of **nature-based solution (NbS)** carbon projects or programs. REDD+ can include avoided deforestation (AD), integrated forest management (IFM), and afforestation, reforestation and regeneration (ARR) project types. REDD+ can be developed at a project level or a jurisdictional or program level. As of September 2021, there were 356 VCM REDD+ projects (AD, IFM and ARR) in 51 countries. Verra's Verified Carbon Standard (VCS) has **eight methodologies** that support REDD+. REDD+ has become more popular among voluntary buyers in recent years, with a huge jump in credit issues in the last five years (**2017-2021**) compared to all the preceding years. The annual credit issuance for REDD+ **grew by 40 times** between 2016, when 5.4 million credits were issued, and the first 10 months of 2021, which saw the issuance of 83.5 million REDD+ credits, exceeding all previous years.

Jurisdictional and Nested REDD+ Framework (**JNR**) and Architecture for REDD+ Transactions' The REDD+ Environmental Excellence Standard (**ART/TREES**) provide methodologies to certify jurisdictional-scale REDD+ credits that can be traded in the VCM. JNR is offered and managed by Verra. ART/TREES is a new independent standard. The first Letters of Intent for transactions involving jurisdictional credits certified under ART/TREES were signed in November 2021 at the UNFCCC 26th Conference of the Parties (COP26). So far, no credits have been issued under JNR or ART/TREES.

Purchase programs for national REDD+ credits often define their own program rules. The World Bank's Forestry Carbon

Partnership Facility (**FCPF**) has two trust funds—the Readiness Fund and the Carbon Fund—that provide finance for national REDD+ strategies and large-scale REDD+ programs, respectively. Like private standards, the FCPF has defined rules, in the form of a methodological framework, to certify emission reductions from REDD+ programs. As of December 2021, the FCPF Carbon Fund had signed Emission Reduction Payment Agreements (ERPAs) with **15 countries**. Similarly, the Green Climate Fund allocates funds with respect to the three REDD+ phases of readiness, implementation, and results-based payments (RBP), with its own “Performance measurement framework for REDD+.” As of December 2021, the Green Climate Fund had supported the REDD+ efforts of **8 countries**.

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## Is government implementation of the WFR and REDD+ compatible with engagement in the VCM?

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REDD+, as defined by the WFR, is a results-based payment mechanism, like the VCM. However, reporting requirements under the WFR are insufficient to generate high-quality tradable GHG emission reduction and removal credits. For credits from REDD+ to be traded on the VCM, results must meet the monitoring, validation and verification requirements from **VCM standard-setting bodies**.

In the past, there has been more demand for project-level credits than for jurisdictional credits. Jurisdictional-level REDD+ received RBP from bilateral or multilateral agencies, and eligible individual REDD+ projects received payment through the VCM or compliance markets. Recently, credits from jurisdictional REDD+ are becoming more popular in the VCM.

Some private programs, such as the International Civil Aviation Organization's "Carbon Offsetting and Reduction Scheme for International Aviation" (**ICAO CORSIA**), have exclusively authorized jurisdictional-scale REDD+ credits. In 2021, the Lowering Emissions by Accelerating Forest finance (**LEAF**) Coalition, a coalition of public and private buyers, mobilized USD1 billion for jurisdictional REDD+ credits. Other buyers continue to prefer project-based REDD+ projects, which are faster to implement and for which risks are easier to control.

REDD+ programs and projects come with significant environmental and social benefits. However, they are not without risks. REDD+ projects have had inflated baselines and credit expectations, and jurisdictional programs face the risk of policy reversal that undermines forest activities. Projects and programs have been criticized for failure to involve local populations in the project or program design and benefit sharing or where emissions have been displaced rather than reduced. Despite risks, well-designed REDD+ programs have an important role to play in countries' efforts to meet their Nationally Determined Contributions (NDCs) under the Paris Agreement. Jurisdictional-level REDD+ builds on governments' ability to influence land use and land use change through policies. VCM projects can complement these efforts by attracting finance quickly to areas where forest is lost, and where the reach of public policies is limited.

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## Further Reading

1. Chagas, T., Galt, H., Lee, D., Neeff, T., & Streck, C. (2020). A close look at the quality of REDD+ carbon credits. <https://www.climatefocus.com/sites/default/files/A%20close%20look%20at%20the%20quality%20of%20REDD%2B%20carbon%20credits%20%282020%29%20V2.0.pdf>
2. Hamrick, K., Webb, C., & Ellis, R. (2021). Nesting REDD+: Pathways to Bridge Project and Jurisdictional Programs. The Nature Conservancy. [https://www.nature.org/content/dam/tnc/nature/en/documents/REDDPlus\\_PathwaystoBridgeProjectandJurisdictionalPrograms.pdf](https://www.nature.org/content/dam/tnc/nature/en/documents/REDDPlus_PathwaystoBridgeProjectandJurisdictionalPrograms.pdf)
3. Schwartzman, S., Lubowski, R. N., Pacala, S. W., Keohane, N. O., Kerr, S., Oppenheimer, M., & Hamburg, S. P. (2021). Environmental integrity of emissions reductions depends on scale and systemic changes, not sector of origin. *Environmental Research Letters*, 16(9), 091001. <https://doi.org/10.1088/1748-9326/ac18e8>
4. Seymour, F. (2020). INSIDER: 4 Reasons Why a Jurisdictional Approach for REDD+ Crediting Is Superior to a Project-Based Approach. <https://www.wri.org/insights/insider-4-reasons-why-jurisdictional-approach-redd-crediting-superior-project-based>
5. Wunder, S., Duchelle, A. E., Sassi, C. de, Sills, E. O., Simonet, G., & Sunderlin, W. D. (2020). REDD+ in Theory and Practice: How Lessons From Local Projects Can Inform Jurisdictional Approaches. *Frontiers in Forests and Global Change*, 3, 11. <https://doi.org/10.3389/ffgc.2020.00011>

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**Introduction**

**Chapter 1**  
About the VCM

**Chapter 2**  
Role of Governments in the VCM

**Chapter 3**  
VCM and the Paris Agreement

**Chapter 4**  
GHG Accounting in the VCM

**Chapter 5**  
About Carbon Credits

**Chapter 6**  
High-Quality Carbon Credits

**Chapter 7**  
Carbon Standards

**Chapter 8**  
Carbon Credit Generation

**Chapter 9**  
Carbon Credit Uses

**Chapter 10**  
Carbon and Community Rights

**Chapter 11**  
Benefit Sharing

**Chapter 12**  
Nature-based Solutions

**Chapter 13**  
REDD+ in the VCM

**Chapter 14**  
REDD+ Nesting

# The Voluntary Carbon Market **Explained**

**Chapter 14**



## Chapter 14: How does REDD+ nesting work?

Countries may want to integrate Reducing Emissions from Deforestation and Degradation (REDD+) activities across different scales in order to support jurisdictional programs and voluntary carbon market (VCM) projects. 'Nesting' provides countries with a toolbox for harmonizing and supporting REDD+ at different investment and governance levels.

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### What is nesting?

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Nesting harmonizes land-use activities implemented at different scales, integrates the accounting frameworks for different **REDD+** activities, helps to manage leakage, and enforces environmental safeguards across programs and projects. Nested REDD+ systems align **accounting** and reporting of greenhouse gas (GHG) emission reductions and removals from **Avoided Deforestation (AD) projects and jurisdictional REDD+ programs**. In doing so, nesting enables REDD+ implementation at different scales by creating incentives for both public and private actors. Governments are best equipped to establish long-term sustainable land use systems, fight illegal activities and corruption, and grant secure **land rights for Indigenous peoples and local communities (IPLCs)**. Project developers and local partners on the ground can design and implement local solutions and establish **benefit sharing arrangements** for specific socio-ecological contexts. Companies can provide the investments and quickly disburse payments to accelerate climate change mitigation, while complying with regulations that push them to

reduce emissions and deforestation in their supply chains.

Nested systems are likely to play a major role in the design and implementation of REDD+ going forward. Effective nesting systems that generate high-quality carbon credits will help to attract private finance for forest conservation and climate change mitigation interventions. The ideal nesting arrangement aligns privately funded projects with jurisdictional REDD+ programs to protect forests at scale while maximizing cooperation between private and public actors.

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### Why would governments engage in nesting?

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Governments choose to engage in nesting because they want to align **project level accounting** with jurisdictional **REDD+ programs**. Nesting is implemented to incentivize direct private investment into REDD+ while increasing the integrity of REDD+ projects through conservative baselines and accounting of leakage across an entire jurisdiction. Nesting can help countries to meet results-based payment goals under international or multilateral agreements, access finance for climate and forests goals, strengthen national REDD+ strategy, and generate jurisdictional-level carbon credits to sell in the VCM. Nested REDD+ may be more attractive to voluntary buyers because **quality concerns** associated with inflated project baselines, leakage, permanence, and safeguards are thought to be better addressed through larger-scale

programs, while investments are allowed to flow to distinct project activities. However, the **quality of credits** from nested REDD+ programs depends on the integrity of national accounting methods and the ability to enforce regulation. The credibility of REDD+ programs depends on conservative forest emissions reference levels (FRELs), robust measurement, reporting and verification, and enforceable safeguards across all implementation levels.

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### How should nesting be designed?

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Governments should identify clear policy objectives before designing a nested system. Local circumstances and policy preferences will determine how a country chooses to nest projects: the government may seek to control crediting and finance or prefer to encourage crediting and investment at the project scale.

Nested REDD+ can have varying degrees of government control. In centralized nesting systems, carbon credits are only issued at the national scale and projects participate in REDD+

through government-controlled **benefit sharing**. In decentralized nesting systems, credits are also generated at the project scale, and projects generate and market credits independently from the government. In countries where VCM project level activities are under implementation, or generally welcome, decentralized nesting is often the favored implementation modality since it accepts existing agreements and avoids legal controversy with participants in existing projects. Figure 14.1 shows how REDD+ can be structured as jurisdictional programs or stand-alone projects in a country with no nesting systems, or under centralized or decentralized nesting systems.

The two jurisdictional **REDD+ standards** —Verra’s Jurisdictional and Nested REDD (**JNR**) and the Architecture for REDD+ transactions (**ART/TREES**) — define criteria for nested REDD+. In both cases, governments have the choice between centralized or decentralized nested systems. While JNR offers detailed guidelines rules for nested REDD+, ART/TREES defines a number of scenarios but leaves the details for the participating governments to decide.

#### **Box 14.1: Is nesting required for REDD+ to generate credits that are traded in the VCM?**

No. REDD+ projects may be developed and generate tradable units without being nested if a country does not have a nesting approach. REDD+ can function as a jurisdictional program in which all activities are managed by the government, with no separate accounting or crediting, and payments are made through **benefit sharing arrangements**. However, nesting is a good strategy to ensure alignment between national forest policies and project-level activities to reduce deforestation. Nesting can be implemented in a stepwise approach, starting with the coordination of jurisdictional reference level and project baselines, and moving to a more comprehensive nesting system over time.



## What are the key features of nested REDD+ systems?

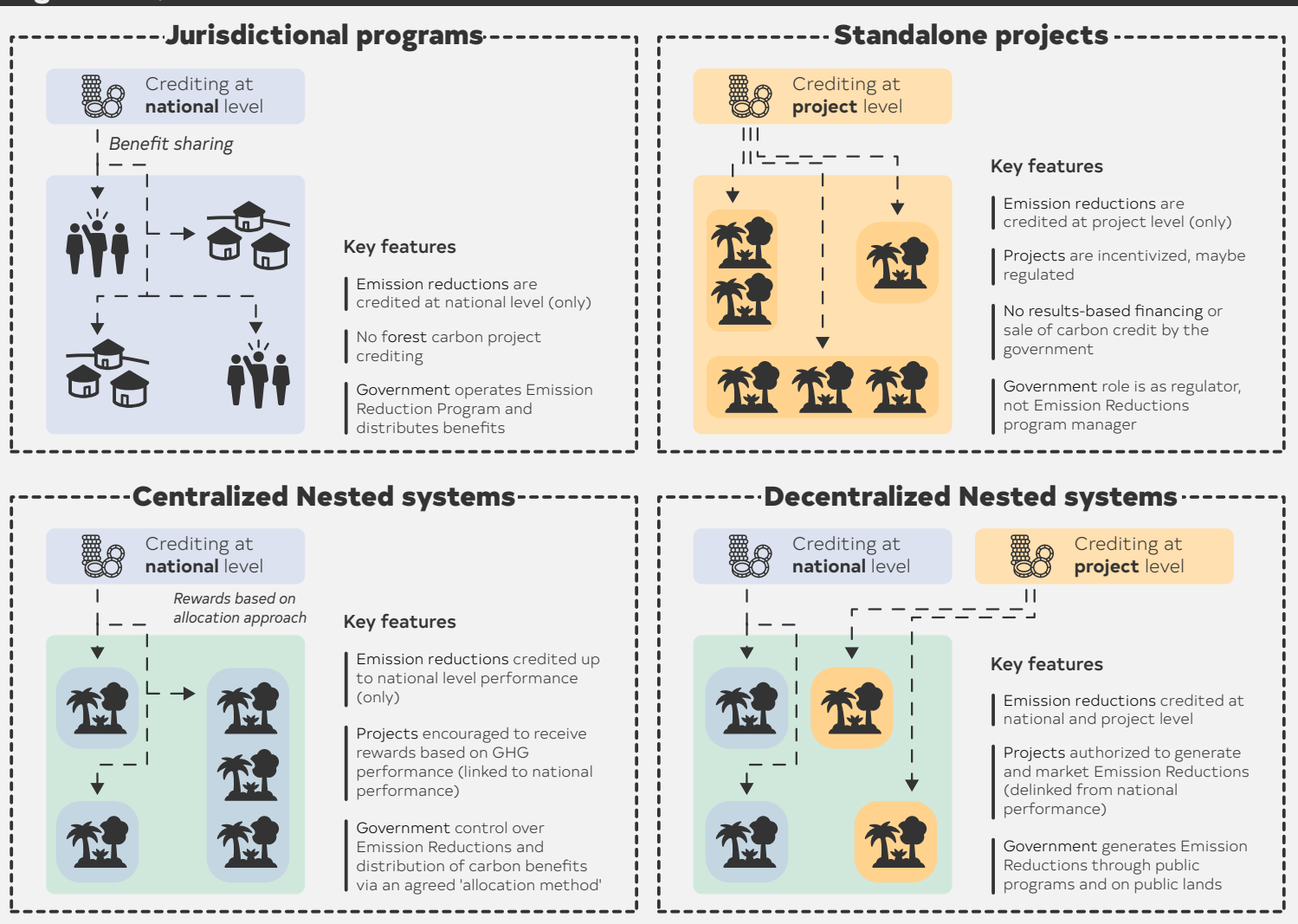
Nested systems require robust **accounting systems**, clarity on **land titles and carbon rights**, and institutional frameworks that support nested REDD+.



**Governments must have credible REDD+ carbon accounting in place.** To promote alignment in baseline setting across REDD+ projects and programs,

governments can mandate conformity in baseline and monitoring methodologies, allocate the FREL to ensure that project baselines do not exceed the jurisdictional baseline, or set maximum crediting levels for projects. Governments must also decide on the REDD+ activities that will be included in nesting, and establish definitions, data, and methods for estimating GHG emissions. For effective nested REDD+, governments must have the ability to track and register projects and credits, ensure consistency of data, and share this information transparently. Governments should also consider whether and when they will back REDD+ transactions with corresponding adjustments under **Paris Agreement Article 6**.

**Figure 14.1** | Structures for REDD+





**The rights to land and carbon benefits inform the design of nested REDD+ systems.**

Clarifying land tenure and associated **carbon rights** through laws or contracts facilitates the implementation of REDD+ nesting. Governments should consider legal rights of existing AD projects and how these rights need to be integrated in nested REDD+ systems. Depending on the land systems and rights of communities and individuals, governments may have to take into account future REDD+ projects and create measures for those projects to be legally nested in jurisdictional systems. Governments should also establish **benefit sharing** plans that detail how carbon finance from REDD+ projects and programs are distributed, and the monetary or non-monetary incentives that will be shared.



**Governments can implement safeguards for nested REDD+ activities.**

Participatory consultations with local actors are essential to successful integration of existing REDD+ projects with nested systems. Nested REDD+ should: align with the objectives of national forest programs and international agreements; be transparent and account for national legislation and sovereignty; respect the knowledge and **rights of Indigenous**

**Peoples and local communities;**

ensure the full and effective participation of relevant stakeholders; promote conservation of forests and biodiversity; address the risks of reversals; and avoid displacement of emissions. In addition to safeguards imposed by governments, private sector project developers or **carbon standards** may impose additional safeguard requirements.



**Government institutions should have clearly assigned responsibilities for the implementation of nesting.**

Institutional infrastructure is needed to manage the technical, financial, administrative, and supervisory aspects of nesting, and for the allocation of GHG emission reductions, management of funds and sharing of associated benefits. Government institutions are responsibility for monitoring, verifying, and accounting for jurisdictional emission reductions. Governments should consider creating registries, national monitoring systems, and other data management mechanisms to facilitate effective nesting implementation and institutional coordination.

Governments should also consider the risks inherent to nested systems, particularly the underperformance of jurisdictional programs or projects in generating GHG emission reductions and removals. Corporate buyers may prefer to trade credits directly with project developers or directly invest in projects because they are not able or willing to assume the risk of government implementation failure. However, governments can increase

corporate support for jurisdictional programs by establishing clear nesting rules and by defining rules that allocate the risk of non-performance at the project or jurisdictional levels. Methods to reduce risks depend on the type of nested REDD+ system, and may include strengthening institutions and governance to provide effective implementation, sharing of performance risk and establishing accountability mechanisms, securing multiple streams of finance, **compensating actors** negatively impacted by nesting (e.g. where **rights to carbon** are centralized and need to be compensated), including relevant stakeholders in REDD+ and benefit sharing designs, and using the most updated methodologies for calculating GHG emission reductions and removals.

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2. Streck, C., Lee, D., Cano, J., Fernandez, M., Llopis, P., Landholm, D., Reddy, R. C., & Espejo, A. (2021). *Nesting of REDD+ Initiatives: Manual for Policymakers* (No. AUS0002247). World Bank. <https://documents1.worldbank.org/curated/en/411571631769095604/pdf/Nesting-of-REDD-Initiatives-Manual-for-Policymakers.pdf>