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# The Voluntary Carbon Market **Explained**

**Chapter 13**



## Chapter 13: How does the voluntary carbon market support nature-based solutions?

Nature-based solutions (NbS) are actions to protect, sustainably manage, and restore ecosystems and their benefits for humans and nature. Identified as one of the most important and cost-effective tools to mitigate climate change, NbS could deliver about a [quarter](#) of the mitigation needed to keep warming below 1.5°C, while providing important social, economic, and ecological benefits.

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

The voluntary carbon market (VCM) supports NbS by providing finance for activities that sequester and avoid the emission of greenhouse gases (GHGs) through trading [carbon credits](#) generated by those activities. VCM [carbon standards](#) certify credits from three main classes of NbS: forestry, agriculture, and wetlands.



**Forestry** activities 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 and nested REDD+](#) programs.

Other types of forestry NbS that can generate carbon credits are Afforestation, Reforestation and Revegetation (ARR) and Improved Forest Management (IFM). ARR activities restore degraded forest land, reforest previously forested land, and convert non-forest land to forests through human intervention. IFM activities 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 activities 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. Restoring and avoiding the conversion of grasslands may also fall under agricultural NbS. Sustainable grassland management activities may include reducing land used for livestock grazing, avoiding 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 activities are often referred to as ‘blue carbon.’ Coastal NbS activities include

avoiding conversion or degradation of coastal ecosystems; restoring mangroves, marshes, and seagrasses; and enhancing the growth of kelp or shellfish. Peatland NbS activities include avoiding conversion or degradation of peatlands, rewetting drained peatlands, and restoring 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 activities need to be covered by methodologies that guide the quantification of GHG emission reductions and removals.

The Verified Carbon Standard (VCS), the Gold Standard for the Global Goals (GS4GG), the Climate Action Reserve (CAR), and the ACR certify credits from NbS projects and programs. Plan Vivo (PV) certifies NbS projects that benefit Indigenous Peoples, local communities, and smallholder farmers. There are also standards that exclusively certify credits from REDD+ programs. The NbS project types and methodologies for which VCS, GS4GG, CAR, ACR, and PV issue credits (as of July 2023) and the standards that certify REDD+ are detailed in Table 13.1.

**Table 13.1 NbS methodologies under carbon standards**

Standard	Forestry	Agriculture	Wetlands
Verified Carbon Standard (VCS)	<p>VCS has a range of REDD+ methodologies and is in the process of consolidating all REDD+ methodologies and other methodologies for certifying activities that avoid unplanned deforestation or forest degradation.</p> <p>VCS has IFM methodologies for: extension of rotation age; avoided ecosystem conversion; preventing planned degradation; reduced impact logging; fire management; conversion of low-productive forest to high-productive forest; and conversion from logged to protected forest; tropical, temperate, and boreal forest ecosystems; and for Canadian and other national forests.</p>	<p>VCS has methodologies for improved agricultural land management; N2O emission reductions in crops; sustainable grassland management; fire and grazing for grasslands management; reduction of methane emissions from ruminants; and use of organic bedding material.</p>	<p>VCS has methodologies for avoided planned land-use conversion in peat swamp forests; coastal wetland creation; rewetting drained tropical peatlands; rewetting drained temperate peatlands; tidal wetland and seagrass restoration.</p>
Gold Standard for the Global Goals (GS4GG)	<p>GS4GG has methodologies for afforestation and reforestation.</p> <p>GS4GG does not</p>	<p>GS4GG has methodologies for increased soil carbon; low tillage; methane reduction;</p>	<p>GS4GG does not have wetlands methodologies.</p>



	<p>issue REDD+ credits due to concerns about environmental integrity.</p>	<p>livestock; and reduced erosion impacts on water.</p>	
ACR	<p>ACR has methodologies for ARR of degraded lands; IFM on Canadian and non-federal U.S. lands; and IFM on small non-industrial private forestlands.</p>	<p>ACR has methodologies for avoided conversion of grass- and shrublands to crop production.</p>	<p>ACR has methodologies for restoration of California deltaic and coastal wetlands; and restoration of Pocosin wetlands.</p>
Climate Action Reserve (CAR)	<p>CAR has protocols for IFM, reforestation, and avoided conversion for forests in Mexico, Panama, Guatemala, and the United States, including in urban areas of the United States.</p>	<p>CAR has protocols for biochar production and avoided conversion of grasslands in the U.S. and Canada; soil enrichment, nitrogen management, and improved rice cultivation in the U.S.; reduced emissions from livestock in the U.S. and Mexico.</p>	<p>CAR does not have protocols for wetlands.</p>
Plan Vivo (PV)	<p>PV has approved approaches for REDD+ in community-managed lands; prevention of deforestation; afforestation; reforestation; and agroforestry.</p>	<p>PV has approved approaches for agricultural land management and agroforestry.</p>	<p>PV does not have approved approaches for wetlands.</p>
Jurisdictional and Nested REDD+ (JNR) Framework	<p>JNR exclusively certifies jurisdictional-scale REDD+ credits. So far, no credits have</p>	<p>JNR and ART/TREES do not provide methodologies for Agriculture or Wetlands. However, REDD+ activities may</p>	

	been issued under JNR.	include peatlands, mangroves or other wetland ecosystems.
Architecture for REDD+ Transactions' The REDD+ Environmental Excellence Standard (ART/TREES)	ART/TREES certifies jurisdictional-scale REDD+ programs from national, subnational, and Indigenous-managed areas. So far, only one ART/TREES program is issuing credits.	

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), the Sustainable Development Verified Impact Standard (SD VISta), and the GS4GG allow the certification of socio-economic benefits. There are also new standards under development that would issue credits representing protection of biodiversity and of high-integrity forests. Purchasers of SDG, biodiversity, or high-integrity forest credits would use the credits to show contributions to these benefits, but not to offset emissions or other harms.

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### What is the state of NbS in the VCM?

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From 2018 to 2021, the voluntary market for NbS expanded rapidly, hitting a high of 160.3 million credits issued in 2021. In 2022, NbS issuances decreased. Renewable energy overtook NbS as the VCM activity category with the largest number of issuances. This aligns with the overall trend of fewer VCM credit issuances in 2022 than in 2021. However, issuances remain high in comparison to historical levels. Together, NbS and renewable energy accounted for two thirds of the issuances in 2022 and, while NbS issuances were lower in 2022 than in 2021, 2022 had the second highest level of NbS issuances of any year (see Figure 13.1).

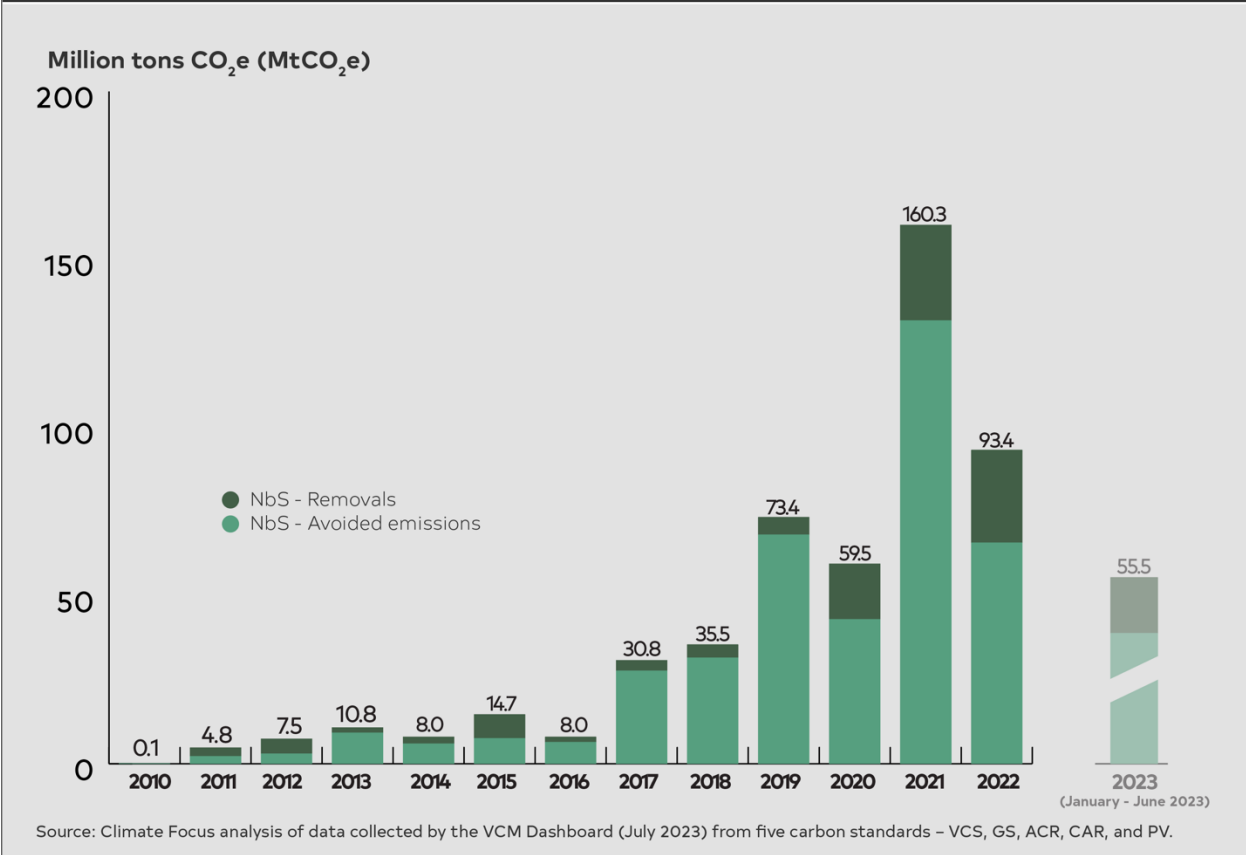
Demand for NbS credits in the VCM has expanded rapidly in the last few years. Voluntary buyers are attracted to the multiple social-

environmental benefits and the large credit inventories of NbS activities. However, carbon markets **historically excluded NbS credits** due to concerns about permanence, conservative baselines, and additionality. Recently, these concerns have resurfaced and decreased buyer interest in NbS credits. Commenters have pointed to issues such as an **increasingly large and chaotic mix** of codes, principles, and protocols developed for the VCM by a growing number of initiatives and organizations; the **unclear relation** of carbon credits to **Article 6 of the Paris Agreement**; and concerns about whether NbS credits represent **real and**

**additional emission reductions**. Ultimately, sustaining buyer interest for NbS credits depends on ensuring the **integrity** of NbS projects.

Investment in NbS is needed. NbS are essential to achieve global climate change mitigation goals, but they only receive a **small fraction** of global climate finance. NbS have the potential to reduce GHG emissions in the atmosphere by **8-14 gigatons** of carbon dioxide equivalent (CO<sub>2</sub>e) per year. Carbon markets are estimated to be able to **unlock at least 10 percent** of NbS' climate change mitigation potential by 2030. **43 percent** of the NbS potential is in agricultural NbS activities, followed by avoided

**Figure 13.1** | NbS carbon credits issued in the VCM



deforestation (32%), ARR (11%), IFM (7%), and wetlands (7%). To achieve this potential, carbon markets need to grow by **17 times** larger than 2021 levels by 2030. This requires private and public sector efforts.

Voluntary and private investment in NbS cannot replace public sector action. However, the ability of VCM activities 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 investments can provide urgently needed finance for activities like developing sustainable livelihood strategies and climate-smart agriculture, creating protected areas, or clarifying land ownership. Around **80 percent** of potential NbS activities are in developing and least-developed countries, making NbS through the VCM an attractive option for governments that may not have sufficient capacity to invest in mitigation projects. Biodiversity, high-integrity forest, and SDG non-offsetting credits traded on the VCM alongside carbon credits are increasingly important sources of finance.

**Governments** can attract more finance for NbS by clarifying land tenure, activities that need finance, and approvals and accounting procedures for VCM development in their countries. Clarification of land tenure and accounting rules could unlock as much as **35 percent** of currently-undeveloped NbS.

Governments are also engaging in **jurisdictional programs** to access finance to support ecosystem protection, climate-smart agriculture, and benefits to local communities. 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 the huge potential benefits of large-scale NbS can guide buyers to invest in these essential activities. Through **REDD+ nesting**, defined safeguards, and guidance on **benefit sharing**, governments can ensure that NbS VCM activities have high environmental and social integrity.

Investment in NbS and increasing the demand for NbS credits from the VCM can accelerate the implementation of NbS and secure needed climate, ecosystem services, biodiversity, and socio-economic benefits.

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## Further reading

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