

Carbon Markets for Africa: A Primer

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Climate finance has continued to be the Achilles heel of the Paris Agreement, resulting in the limited implementation of climate mitigation and adaptation actions. In Africa, whose priority is adaptation, vulnerability is exacerbated by the impacts of extreme weather and climate events and the absence of compensation for loss and damage. Current levels of climate finance are way below what is required to implement the continent's NDCs which are dependent on the provision of conditional funds. The continent requires US\$3 trillion to implement its NDCs, yet less than US\$20 billion has been made available to Africa between 2016 and 2019. The limited flows of public funds are further constrained by the long-term impacts of the COVID pandemic on the global economy, as well as by the Ukraine war. This has led to efforts to secure private sector investment in the climate response. In this regard, voluntary carbon markets can play a crucial role in filling this financial gap. However, carbon markets remain relatively underdeveloped in Africa, with considerable potential for expansion.

Carbon markets offer an incredible opportunity to unlock billions for the climate finance needs of African economies while expanding energy access, creating jobs, protecting biodiversity, and driving climate action. However, for various historical and structural reasons, Africa currently produces only a tiny percentage of its carbon credit potential (UNFCCC).

The Kyoto Protocol (1997) introduced carbon trading as a mechanism to facilitate emissions reduction by Annex 1 countries (38 industrialized countries). Carbon markets provide incentives to mitigate emissions by enabling parties to trade *carbon credits* generated by reducing or removing GHGs from the atmosphere, such as by switching from fossil fuels to renewable energy or enhancing or conserving carbon stocks in ecosystems such as forests, wetlands, or the soil.

In terms of the Protocol, the Annex 1 countries were to reduce their greenhouse gas emissions between the years 2008 to 2012 to levels 5.2% lower than their emissions of 1990, the baseline year. Kyoto introduced 3 mechanisms to facilitate emissions reduction through carbon trading:

1. The Clean Development Mechanism (CDM) <https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism>
 - The CDM allowed industrialized countries to implement an emissions reduction project in a developing country and, in doing so, generate a marketable Certified Emissions Reduction (CER) credit.
2. Reducing Emissions from Deforestation and Forest Degradation (REDD+) <https://redd.unfccc.int/>
 - REDD+ is a framework for carbon removal projects aimed at removing GHG Emissions already released into the atmosphere by using nature-based methods, in this case managing forests.
3. Joint Implementation (JI) <https://unfccc.int/process/the-kyoto-protocol/mechanisms/joint-implementation>
 - The JI allows industrialized countries to collaborate jointly with each other in pursuing and implementing emissions reduction projects to meet their Kyoto targets (i.e. carbon trading among industrialized countries).

Carbon trading involves the buying and selling of carbon credits between companies or other entities. A carbon credit is a tradeable permit that represents the right to emit one metric ton of carbon dioxide or other greenhouse gases. The value of the credit is based on the ability of the country to store the carbon or to prevent it from being released into the atmosphere.

In carbon trading, carbon is given an economic value, allowing people, companies, or nations to trade it. If a nation buys carbon, it is buying the right to burn it, and a nation selling carbon gives up its rights to burn it. Under Kyoto, industrialized nations that had mitigation targets bought emission rights from other nations whose industries do not produce as much of these gases.

A key aspect of a carbon credit is that it must be additional. A reduction in GHG Emissions is deemed “additional” only if the reduction would not have taken place in the absence of the incentive created by the carbon market.

Various institutional mechanisms were developed to facilitate carbon trading in the context of the Kyoto Protocol, including:

- Certified Emissions reduction Credit (CER) - a marketable carbon credit generated by the Clean Development Mechanism (CDM) that represents the equivalent of offsetting one metric ton of carbon dioxide. A CER can be traded or sold to count towards meeting an industrialized country’s GHG Emissions–reduction targets under the Kyoto Protocol.
- Emissions Reduction Purchase Agreement (ERPA) - A legally binding contract between buyers and sellers of carbon offsets.
- The International Emissions Trading (IET) Mechanism - One of three market-based mechanisms introduced by the Kyoto Protocol to assist countries in finding ways to meet their targets. The IET mechanism allowed industrialized countries with unused, excess carbon allowances to sell these excess allowances to other industrialized countries that exceeded their targets
- Validation and Verification Body (VVB) - An independent third party pre-approved by the carbon offset registry that conducts an audit of the project design during the auditing stage of the carbon offset certification process

There are two types of carbon markets, voluntary and compliance. Voluntary markets are incentive-based markets that allow individuals and entities to purchase VCC’S to compensate for any residual or unavoidable carbon emissions on a voluntary basis. Strategies to avoid, reduce and substitute harmful greenhouse gases must come before offsetting, but there are emissions being produced that are unavoidable due to a lack of current technology and cost. Each credit represents one tonne of CO₂ (or equivalent GHG) reduced or removed that has been independently verified. In 2021, the voluntary carbon market grew at a record pace, reaching \$2 billion—four times its value in 2020—and the pace of purchases is still accelerating. By 2030, the market is expected to reach between \$10 billion and \$40 billion.

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. 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 to implement projects that reduce GHG emissions or enhance GHG removals. Governments attract foreign direct investments and achieve additional mitigation through VCM investments.

Box 1: Voluntary Carbon Markets

The voluntary carbon market (VCM) is a carbon offsetting mechanism whereby private individuals, corporations and other actors issue, buy and sell carbon credits outside of regulated or mandatory carbon pricing instruments. The idea of private companies offsetting GHG emissions with carbon credits emerged in the late 1980s. 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. 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.

Carbon credits in the VCM are issued, accounted for at the project, program or jurisdiction 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 (VERRA) (69% of credits); the Gold Standard (20%); the Climate Action Reserve (8%), and American Carbon Registry (3%).

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 solutions (NbS)

The compliance market aims to establish a carbon price by laws or regulations which control the supply of allowances that are then distributed by national, regional, and global regimes. This can be accomplished through either a carbon tax or a cap-and-trade scheme, shifting economic incentives by making it more expensive to pollute. The value of the global carbon credit market reached approx. \$850 billion in 2021, a 164% increase from 2020. Currently, there are three major compliance market Emissions Trading Systems: the European Union’s Emissions Trading System (EU); the California Global Warming Solutions Act (USA); and the Chinese National Emission Trading System (China).

Box 2: Compliance Carbon Markets

Over 60 countries have to date implemented compliance carbon market mechanisms to meet their emissions reduction targets specified in the Nationally Determined Contributions (NDC). The European Union Emissions Trading System (EU ETS), established in 2005, is the world's first major carbon market. The EU ETS regulates around 11 thousand installations across different sectors from heat and power generation to energy intensive industry sectors. The EU ETS works on the cap-and-trade principle. A cap or limit is set on the total amount of specific greenhouse gases that can be emitted by the installations covered by the system. The cap is reduced over time so that total emissions fall.

An entity must surrender enough allowances to cover its emissions production on a yearly basis, otherwise fines are imposed. If an entity reduces its emissions, it can keep the spare allowances to cover its future needs or sell them to another party that is short of allowances. Entities can therefore trade emission allowances with one another as required.

The successor to the Kyoto Protocol, the Paris Agreement, introduces new modalities for carbon trading under Article 6. Article 6.2 creates the basis for trading in GHG emission reductions (or “mitigation outcomes”) across countries. Article 6.4 is similar to the Clean Development Mechanism. It establishes a mechanism for trading GHG emission reductions between countries under the supervision of the Conference of Parties. Article 6.8 facilitates non-market approaches to promote mitigation and adaptation through cooperation in finance, technology transfer, and capacity building, where no trading of emission reductions is involved.

The Article 6 ‘rule book’, agreed upon at the 2021 Glasgow Climate Change Summit, sets rules for a unified carbon trading market. global carbon trading now has a more structured framework for countries to follow. The rule book sets clear guidelines for how the carbon market will work for bilateral deals between countries and in a United Nations-supervised marketplace. To streamline accounting for credits between buying and selling countries/entities, the rule book established an accounting mechanism known as “corresponding adjustment,” to ensure that double counting of credits does not occur. The corresponding adjustments mechanism requires a host country to deduct (or “un-count”) a sold carbon offset from its own NDCs so that the buyer country can count the offset against its NDCs.

It is estimated (World Bank) that carbon trading could reduce the cost of implementing countries’ Nationally Determined Contributions (NDCs) by more than half – by as much as \$250 billion by 2030. In this regard, carbon trading could facilitate the removal of 50% more emissions (about 5 gigatons of carbon dioxide per year by 2030) at no additional cost.

Carbon credits are time bound and are retired at the expiration of their validity, meaning that the carbon offset can no longer be sold or traded on any exchange. Retirement occurs after the reduction in GHG Emissions has been deducted from the final owner’s carbon footprint.

Over time, carbon markets are expected to become redundant as every country gets to net zero emissions and the need to trade emissions diminishes.

The Africa Carbon Markets Initiative (ACMI)

The Africa Carbon Markets Initiative (ACMI) was launched at COP27 in Egypt to support the growth of voluntary carbon markets on the continent. The initiative was inaugurated in collaboration with The Global Energy Alliance for People and Planet (GEAPP), Sustainable Energy for All (SEforALL), and the UN Economic Commission for Africa, with the support of the UN Climate Change High-Level Champions – Dr. Mahmoud Mohieldin and Nigel Topping.

ACMI’s specific objectives include:

- Expanding African voluntary carbon markets to produce 300 million carbon credits annually by 2030, and 1.5 billion credits annually by 2050.
- Unlock \$6 billion in revenue by 2030 and over \$120 billion by 2050.
- Support 30 million jobs by 2030 and over 110 million jobs by 2050.
- Distribute revenue equitably and transparently with local communities.

The ACMI Roadmap report identifies 13 action programs to support the growth of voluntary carbon markets (VCMs) across Africa. <https://www.seforall.org/publications/africa-carbon-markets->

[initiative-roadmap-report](#). By January 2023, 7 countries have signed up including Kenya, Gabon, Malawi, Mozambique, Togo, Nigeria, Burundi, and Rwanda.

Africa has the potential for carbon credits projects in nature-based solutions (especially forest carbon), renewable energy projects, and cookstoves. Potential also exists for innovative project types that don't yet have a market and can substantively contribute to economic prosperity, livelihoods, and environmental preservation across the continent (e.g., diesel decommissioning or biodiversity credits). In the lead-up to COP28 ACMI's action programs aim to accelerate Africa's participation in the global carbon market by:

- Launching country activation plans for multiple countries.
- Advancing market commitments with an ambition of up to \$ 1 billion for the purchase of high-integrity African credits.
- Developing projects based on new methodologies and the realities of Africa such as diesel replacement credits and biodiversity credits.
- Increasing a significant volume of credits on the continent.

However, challenges remain regarding carbon pricing. Countries could raise approx. US\$82 billion/year from carbon trading at a price of US\$120/tCO₂. However, since the Kyoto Protocol, the price of carbon in Africa has consistently remained under US\$10/tCO₂. This can be resolved by the establishment of a high-efficacy carbon registry, as well as the development of appropriate regimes to govern carbon trading in all countries, and in line with the provisions of Article 6.

ECA and the Congo Basin Blue Fund of the Congo Basin Climate Commission (CBCC) have developed a **Model regional carbon registry and harmonized protocol**. The Protocol has 16 CBCC country members: Angola, Burundi, Cameroon, CAR, Chad, DRC, Gabon, Equatorial Guinea, Kenya, Rep. Congo, Rwanda, Sao Tome & Príncipe, South-Sudan, Tanzania, Uganda, and Zambia.

The harmonized protocol for GHG accounting and reporting was developed based on the best internationally available standards and protocols in the world. It includes a project development template, and other toolkits, and covers

- Eligibility criteria: project governance structure, project finance, land ownership, land tenure rights, benefit sharing plan, additionality, permanence issues, mitigation strategy for double-counting, fraud, etc.
- Methodology for establishing baselines, Monitoring, Review, and Verification (MRV)

The protocol applies to the most productive sectors, including Agriculture, Forestry, and Land Use (AFOLU), energy, waste management, and agriculture emissions. It is well-aligned with NDCs and SDGs.

<https://repository.uneca.org/bitstream/handle/10855/49405/b12024326.pdf?sequence=1&isAllowed=y>

The Congo Basin Climate Commission CCBC Registry is a first on the continent. It registers carbon offset projects from the CBCC region and beyond. In particular, the CBCC Registry:

- Issues high-quality credits for verified and certified offsets following CBCC Harmonized Protocol

- Increases transparency and integrity in CBCC regional market
- Allows governments' surveillance and oversight on exchanges of international mitigation outcomes from the CBCC region to ensure alignment with NDCs as promoted by the (regional) CBCC harmonized protocol
- Allows the government to access data on climate actions and report of NDCs to UNFCCC at lower costs
- Allows international exchange of carbon credits incl. trade in regional exchange markets
- Boosts harmonization and integration in the regional carbon market, reducing market fragmentation
- Facilitates the linkages between the supplies of credits from CBCC and global exchange/stock markets
- Facilitates cross-border production sharing (co-investment, projects and credits co-ownership, regional VC
- Facilitates the establishment of a common price in a region.

The CBCC Registry allows registration of projects that generate offsets, including reduction, avoidance, and removal of carbon dioxide. It fast-tracks the flows of certified credits, including issuance, retirement, transfer, and other means. It allows the exchange of credits between project developers and buyers, in addition to facilitating access to quality information about climate actions for policymakers, regulators, and standard-setting organizations.