



AFRICAN NARRATIVES

# Carbon Markets in West Africa : Challenges, Potential, and Paths to Development

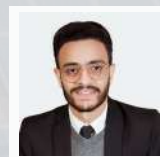


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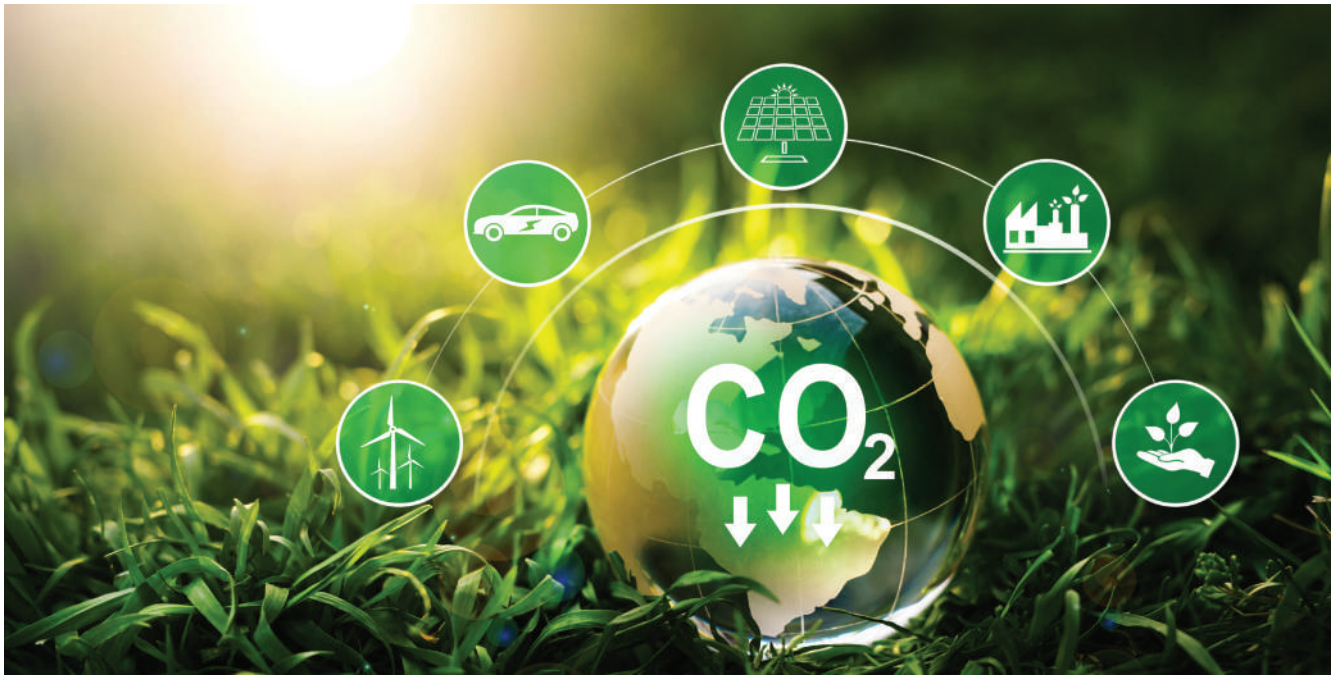
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## Executive Summary

# Carbon Trading Markets: Challenges for West Africa

This paper examines the significance of carbon markets as a crucial instrument for addressing climate change, with a specific focus on West Africa, a region contending with substantial environmental and economic repercussions. These markets are instrumental in fostering sustainable development by facilitating the reduction of greenhouse gas emissions, supporting clean energy projects, and generating employment opportunities that align economic growth with environmental preservation. Carbon markets are defined as systems for trading carbon credits to meet emission limits and are categorized into mandatory markets, which are regulated by governments, and voluntary markets, accessible to companies and individuals. The paper reviews successful international examples, such as the European Union's system and

California's program. It highlights that while West Africa has initiated preliminary steps through initiatives like the African Carbon Markets Initiative (ACMI), the region confronts considerable challenges. These include inadequate infrastructure, a lack of comprehensive legislation, and limited financial and human resources. To enhance the effectiveness of these markets, the paper suggests strengthening governance frameworks, improving regional cooperation, and investing in necessary technologies and infrastructure. It posits that the development of robust carbon markets can help West Africa balance economic development with environmental protection, thereby contributing significantly to global efforts to mitigate climate change.



## Key Points of the Study

- **Poor Infrastructure:**

The study identifies inadequate infrastructure as a primary barrier to the development of carbon markets in West Africa. This includes the absence of effective monitoring and reporting systems, which curtails the ability to accurately measure emissions and oversee carbon trading activities.

- **Lack of Regulatory Legislation:**

The existing legal framework is characterized by weak regulation and ambiguous operational mechanisms. This deficiency diminishes investor confidence and limits the attractiveness of the market.

- **Limited Funding and Human Resources:**

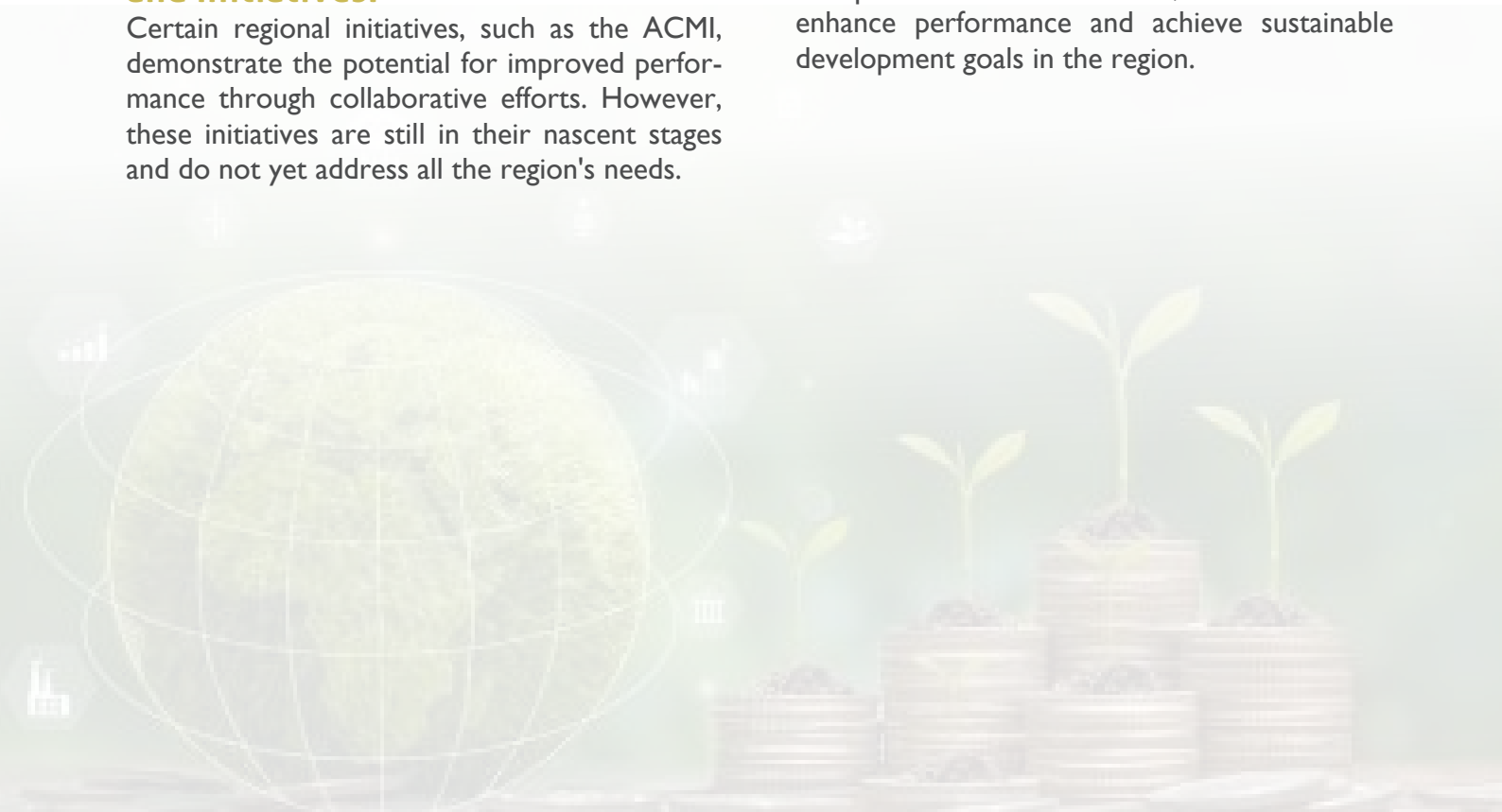
The findings confirm that insufficient financing and a scarcity of trained human capital pose major obstacles to the advancement of carbon markets. In many West African nations, other development priorities often overshadow climate action initiatives.

- **Impact of Regional Cooperation and Initiatives:**

Certain regional initiatives, such as the ACMI, demonstrate the potential for improved performance through collaborative efforts. However, these initiatives are still in their nascent stages and do not yet address all the region's needs.

These points interact with a conceptual framework that links sustainable development objectives with environmental protection mechanisms. The identified weaknesses in infrastructure and legislation underscore the absence of strategic planning essential for activating carbon markets as an effective environmental and economic tool. To surmount these obstacles, sustainable investments must be directed towards infrastructure development, complemented by the training of human resources. Such measures would enhance market efficiency and bolster the competitiveness of West African countries in the global carbon market.

Furthermore, regional cooperation emerges as a critical factor for success. Unified efforts among countries can contribute to cost reduction and increased operational efficiency. The study recommends the adoption of long-term policies, encompassing transparent legislation and financial incentives, to stimulate investment in clean energy technologies. Drawing lessons from successful international models, like those of the European Union and California, is also advised to enhance performance and achieve sustainable development goals in the region.

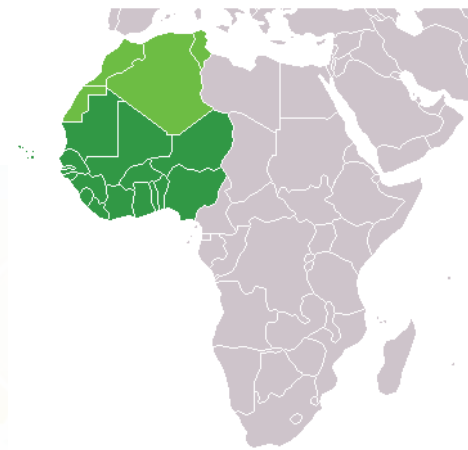


# Introduction

As the challenges posed by climate change and escalating greenhouse gas emissions intensify, carbon markets have emerged as a prominent tool that integrates environmental protection objectives with sustainable economic growth. These markets possess the capability to transform environmental responsibility into an economic opportunity, enabling countries and companies to reduce their emissions through a balanced system of carbon credit trading.

Carbon markets function on the principle of supply and demand, wherein companies that emit less than their allocated limits can sell surplus carbon credits to other entities that exceed their permitted emission levels. This mechanism enhances the efficiency of resource utilization and incentivizes companies to adopt more sustainable practices. Revenue generated from carbon credit trading can be channeled into financing emission reduction projects, thereby contributing to the achievement of global climate goals. These markets are broadly classified into two main types: mandatory markets, which compel participants to comply with government-stipulated standards, and voluntary markets, which allow companies and individuals to offset their emissions on a voluntary basis. This diversity reflects the necessity of adapting to the varying needs of different countries and companies in addressing the risks associated with climate change.

In West Africa, a region significantly affected by climate change and confronting major developmental challenges, there is a pressing need to adopt innovative mechanisms such as carbon markets to attain sustainable development goals. This approach can contribute to promoting investment in clean energy projects, creating employment, and supporting local economies, all while preserving the environment. This paper presents a comprehensive study of carbon markets in West Africa, highlighting the theoretical underpinnings of these markets, the current situation in the region, and the principal challenges impeding the development of this system. Additionally, it reviews necessary recommendations to maximize the benefits of this effective tool in achieving a balance between development and environmental protection.



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1    FAO, Climate finance has great potential to help develop forest pathways, as carbon markets grow, 2022, [ud.ht/rTgD](https://www.fao.org/3/ah0302e/ah0302e.pdf)

2    Egyptian Center for Thought and Strategic Studies, Carbon Markets and Their Role in Promoting Climate Action, 2024, [ud.ht/LUvA](https://www.ecstss.org/egyptian-center-for-thought-and-strategic-studies-carbon-markets-and-their-role-in-promoting-climate-action/)

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3    Youth Loves Egypt, Markets, Compensation, and Carbon Units - A Beginner's Guide,

4    Project Syndicate, Carbon Market Challenges, 2023, [ud.ht/mJhq](https://www.project-syndicate.org/analysis/carbon-market-challenges-2023)



## Section One: A Theoretical Framework for Carbon Markets

### Origins and International Context

Our world has witnessed numerous negative repercussions related to climate change, largely stemming from increased emissions of greenhouse gases due to the expansion of certain industrial policies and heightened rates of fossil fuel combustion. This has led to an increase in atmospheric pollutants, resulting in dangerous effects such as rising global temperatures, which in turn cause floods in some areas and droughts in others, more frequent and intense hurricanes, deterioration of vegetation cover, and threats to biodiversity. These and other negative impacts of climate change affect all countries and jeopardize the future of succeeding generations.

The issue of climate change has garnered significant attention from international actors for over a decade. During this period, persistent efforts have been made to develop policies aimed at limiting activities that adversely affect the

ment and climate. Among these efforts, the concept of carbon markets gained prominence alongside key international agreements such as the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, the Kyoto Protocol in 1997, and the Paris Agreement in 2015. The 1992 Convention and the Kyoto Protocol discussed the necessity of establishing a framework for international action to counter the negative effects of climate change. This framework included efforts to reduce emissions through various tools, most notably the development of a system for trading carbon emission rights. The UNFCCC refers to a mechanism that can be employed to combat polluting emissions. At the Conference of the Parties (COP26) in 2021, participating countries agreed on Article 6 of the Paris Agreement, which regulates the rules for international carbon markets.



## Defining Carbon Markets

Carbon markets can be defined as trading systems that permit industrial institutions to buy and sell credits for greenhouse gas emissions, such as carbon dioxide. They serve as a tool utilized by countries and institutions to address climate change and its detrimental environmental effects by aiming to reduce greenhouse gas emissions. This mechanism allows companies with surplus emission allowances to sell their credits to companies that have exceeded their permitted limits, representing a positive step towards adopting more sustainable environmental policies.

## Types of Carbon Markets

It is worth noting that carbon markets are divided into two main types:

### 1. Mandatory Carbon Markets:

These markets are established through national or international systems designed to reduce greenhouse gas emissions in a legally binding manner. In such systems, the price of carbon is determined by a legal framework, including regulations and agreements that control the supply of carbon certificates, thereby establishing a legal structure for their trade. This type of market typically targets emissions-intensive industries such as oil refineries, airlines, power generators, and other institutions whose operations contribute significantly to carbon emissions. The European Union Emissions Trading System (EU ETS) and the California Cap-and-Trade Program are prominent examples of mandatory carbon market systems. This type is generally based on two sub-forms:

#### Emissions Trading Systems (ETS):

Under this system, and in accordance with Article 6 of the Paris Agreement, institutions can trade and sell their excess greenhouse gas emission credits. Consequently, institutions that have surpassed their maximum carbon emission allowances can purchase this surplus from other institutions, guided by the principles of supply

and demand for emission reduction units per ton of carbon dioxide equivalent.

### Direct Carbon Tax:

This is a fixed-price tax imposed by countries on their imports, based on the emissions released during the manufacture of each commodity. This approach is often considered less effective than emissions trading systems, as a tax does not inherently guarantee that institutions and countries will reduce their greenhouse gas emissions.

### 2. Voluntary Carbon Markets:

This carbon market mechanism allows countries or institutions to buy and sell carbon credits on a voluntary, non-binding basis, with the objective of reducing the volume of carbon emissions. It functions as an environmental financial tool to address climate change, where each carbon certificate represents the equivalent of one ton of carbon dioxide. The fundamental premise of carbon markets is that one ton of greenhouse gas emissions has an equivalent impact on the atmosphere and environment, irrespective of the geographical origin of these emissions. Therefore, reducing the same amount of emissions will yield an equivalent positive impact. Within this context, three types of carbon certificates can be traded:

#### • Carbon Emission Avoidance Credits:

This system aims to prevent activities that would otherwise cause an increase in greenhouse gases.

#### • Carbon Reduction Credits:

This system focuses on reducing existing greenhouse gas emissions that negatively affect the climate and environment. (Note: The original text uses "offset" for the next point, and "offset" for this point. I've changed this to "reduction" for clarity, assuming the intent was to differentiate from removal.)

• **Carbon Removal Credits:** This system aims to remove carbon dioxide directly from the atmosphere, for example, through direct air capture technologies.

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6 Amal Ismail, Carbon Markets and Their Role in Promoting Climate Action, Egyptian Center for Thought and Strategic Studies, publication date 10/31/2024, access date 12/19/2024. <https://shorturl.at/bNdxD>

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7 Dina Fathy Gomaa, Carbon Markets: Facts and Figures, Climate Policy Journal, Issue 4, November 2024, pp. 24, 25.

8 Amal Ismail, Carbon Markets and Their Role in Promoting Climate Action, previous reference.

## International Models of Carbon Markets

Many countries worldwide have successfully implemented carbon market systems, seeking to derive both economic and environmental benefits. Prominent examples include:

### 1. European Union:

The European Union's Emissions Trading System (EU ETS), launched in 2005, is one of the largest carbon markets globally. It encompasses approximately 11,000 facilities and institutions in the energy and industry sectors. The system succeeded in reducing the carbon emission rates of EU countries by over 20% by 2020.

### 2. United States of America:

The US state of California has implemented a carbon market system by establishing a legal framework that allows institutions within the state, including those in the transportation, industry, agriculture, and energy sectors, to trade carbon credits. This system has assisted California in reducing emissions of gases harmful to the climate and environment.

### 3. African Models:

- **Egypt** is at the forefront of African models in applying the carbon market mechanism. The

Egyptian Financial Supervisory Authority, in coordination with the Egyptian Ministry of Environment, established the first voluntary carbon market. This initiative, announced at the 27th United Nations Climate Change Conference (COP27), aims to reduce carbon emissions from various industrial and agricultural projects by issuing and trading carbon emission reduction certificates, thereby generating additional returns for these projects and fostering sustainable economic growth.

- **Togo**, a West African nation, also serves as an African model. In March 2023, the Togolese government issued decisions to strengthen its carbon market mechanisms. In cooperation with the Africa Carbon Markets Initiative (ACMI), Togo seeks to expand its voluntary carbon market by implementing approved climate action projects. .

- **Mozambique** has been a member of the ACMI since June 2023 and is working to activate a plan to increase its presence in carbon trading.

- **Malawi** has also joined the ACMI and has implemented 11 carbon trading projects, primarily focused on distributing improved cooking stoves, in an effort to reduce its carbon emissions.

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11 Financial Supervision launches the first regulated voluntary carbon market in Egypt, General Authority for Inquiries, publication date 8/13/2024, access date 12/24/2024.  
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12 Nour Sobh, The carbon market in Africa is making progress.. and these are the developments in 8 countries, Energy, date of publication 6/16/2024, date of access 12/24/2024.  
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## Environmental and Economic Impact of Carbon Markets

Carbon markets are an effective and innovative tool for reducing greenhouse gas emissions. They provide a mechanism allowing countries and companies to buy and sell carbon credits according to permitted emission limits. This mechanism typically involves imposing a specific emissions ceiling on each party, with the possibility of trading surplus credits between parties capable of reducing their emissions below this ceiling. Carbon markets contribute to improving air quality and protecting the environment by supporting sustainable projects, such as renewable energy initiatives, which significantly reduce carbon emissions and bolster global efforts to combat climate change. Moreover, these markets encourage investments in clean technologies, driving innovation and promoting sustainable development. On the economic front, carbon markets create opportunities for new business environments in advanced fields, such as emission reduction

technologies and renewable energy. They also incentivize organizations to adopt more sustainable strategies, leading to a gradual transition towards a green economy that is less reliant on fossil fuels and more dependent on clean and diverse energy sources.

From an environmental perspective, carbon markets aim to stimulate a shift towards reducing harmful emissions, with a focus on decreasing dependence on fossil fuels and promoting the use of clean energy in various sectors, including industry, agriculture, and transportation. This transition not only protects the environment but also contributes to achieving long-term environmental and economic sustainability.

In essence, carbon markets represent an integrated system that links environmental and economic objectives, balancing emissions reduction with support for economic growth, making them a fundamental pillar for achieving sustainable development worldwide.



## Section Two: The Carbon Market in West Africa

### Current Status and Regional Initiatives

Carbon markets are recognized as an effective tool for promoting sustainable development, contributing to economic and social growth through investment in renewable energy projects. These markets offer countries and companies the opportunity to reduce their greenhouse gas emissions, thereby enhancing their capacity to achieve sustainable development goals. By leveraging investments in clean energy projects, African countries can create new jobs and improve the sustainability of their economies.

The Paris Climate Agreement, adopted in 2015, established a global framework for reducing greenhouse gas emissions and allowed countries to cooperate on the use of carbon credits to meet their climate objectives. This has helped to strengthen carbon markets worldwide, and they have seen significant developments since that year, becoming a key component of global efforts to combat climate change.

In subsequent years, several African countries, including those in West Africa, have initiated the development of national carbon markets. For instance, Egypt launched a voluntary carbon market in 2024, marking an important step towards promoting the trade of carbon emission reduction certificates in the broader region. The region has also witnessed regional initiatives, such as the African Development Bank joining the African Carbon Markets Initiative (ACMI) in May 2024. The ACMI, launched during the COP27 summit in Egypt, aims to enhance sustainable financing for environmental projects and significantly increase the production of carbon credits across the continent, with an ambitious

goal of reaching 300 million carbon credits annually by 2030.

While initiatives to develop a carbon market in West Africa exist, the market is still in its early stages.

### The Importance of Carbon Markets in West Africa

Carbon markets are an effective mechanism for combating climate change, providing a trading system that allows countries to buy or sell units of greenhouse gas emissions. Through this system, countries that exceed their permitted emission limits can purchase credits from countries that achieve emission reductions. This not only contributes to reducing overall emissions but also promotes innovation in clean energy and technology.

Furthermore, carbon markets provide African countries with the opportunity to responsibly exploit their abundant natural resources. Through these markets, African nations can leverage forests and other natural assets to generate additional revenues that support their economies. These markets can also help bridge the financing gap that many African countries face in adapting to the inevitable impacts of climate change, thereby enhancing their ability to meet environmental challenges and foster sustainable development. The ability to create new job opportunities through investments in clean energy projects further underscores the importance of these markets for the region's economic sustainability.

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17 Information and Decision Support Center, Egyptian Cabinet, Reducing Carbon Emissions: Are Carbon Markets the Magic Solution?, 2023, [ud.ac/ht/vvWS](https://www.ud.ac/ht/vvWS)

18 Global Carbon Council, West African Alliance join forces with Global Carbon Council to accelerate climate action, 2023, [ud.ac/ht/CWAa](https://www.ud.ac/ht/CWAa)

## Section Three: Challenges Facing the West African Carbon Market

In recent years, several African countries have attempted to develop national carbon markets. The African Development Bank's aforementioned joining of the ACMI in May 2024 aims to enhance sustainable financing for environmental projects and significantly increase carbon credit production.

Alongside these broader efforts, some West African countries have made national attempts to develop their carbon markets. For example, in March 2023, the Togolese government adopted decisions aimed at strengthening carbon management mechanisms. According to the specialized energy platform, Togo intends to expand its voluntary carbon market by implementing mechanisms that enhance the trading of carbon certifi-

cates. Nigeria is another prominent country in West Africa seeking to strengthen its national carbon market. Nigerian Vice President Kashim Shettima appointed a special committee to activate the carbon market in Nigeria, reflecting the country's commitment to the ACMI. Nigeria aims to support its carbon market with a value of \$2.5 billion.

Despite these initiatives, West African carbon markets face significant challenges. To date, African countries collectively account for only about 2% of the global carbon market, indicating an urgent need to develop the necessary infrastructure and secure adequate financing. Moreover, the lack of clear legislation governing the operation of carbon markets leads to mistrust among investors and hinders growth.



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19 Africarbonex, First Transaction Executed on the African Voluntary Carbon Market, [ud.ht/YFHu](https://ud.ht/YFHu)

20 Nour Sobh, The Carbon Market in Africa is Making Progress... and These Are the Developments in 8 Countries, Energy, previous reference.

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## The most prominent challenges are:

### 1. Weak Infrastructure for Carbon Market Operations

The operational efficacy of carbon markets depends on robust infrastructure, including registries and verification systems that ensure efficient market function without duplication of restrictions imposed on companies and institutions. This also encompasses an appropriate and equitable carbon pricing mechanism. Many African countries lack these foundational systems, which are crucial for the efficient operation of carbon markets. For instance, when Zambia undertook a reforestation project, it was unable to establish a registration system to monitor its carbon balances. This deficiency represents a major obstacle for African countries seeking to benefit from carbon markets.

### 2. Absence of Comprehensive African Legislation Regulating Carbon Markets

According to the Paris Agreement, mechanisms and legislation are required to regulate the monitoring and organization of carbon credits in African markets, ensuring the verification of these credits. Legislation is a critical pillar for enabling states to operate and manage carbon markets efficiently. Most African countries do not currently possess the legislative mechanisms and systems that would allow them to manage their own markets effectively. This absence is a primary impediment, limiting the utility of carbon markets as a tool for African countries to

confront climate change, which has global repercussions beyond the African continent.

### 3. Insufficiency of Financial and Human Resources for African Carbon Markets

Financial resources and funding represent significant obstacles to development in African countries. Carbon markets inherently require substantial financial support from African nations to ensure their efficient and effective management and operation. An example of weak funding is the Congo Basin Forest Fund, which faced a deficit in financial resources allocated for forest conservation. The challenge of securing financial support for carbon markets is compounded by potential conflicts with other pressing development priorities specific to African countries.

Furthermore, carbon markets require trained human personnel for effective management and operation, a resource currently lacking in some African countries. This necessitates that aspiring nations on the continent provide financial support for training human cadres capable of managing carbon markets, including overseeing processes such as monitoring and accurately verifying carbon balances. This issue is intertwined with the generally weak financial capabilities directed towards investing in climate action. Consequently, securing adequate financial support and developing skilled human resources are among the most prominent obstacles facing some African countries in activating the carbon market mechanism as a tool to combat climate change.

## Future Recommendations

### First: Strengthening Governance

Governance plays a crucial role in the success of carbon markets by ensuring that projects are managed effectively, transparently, and fairly. This can be achieved through:

- **Clear Roles and Accountability:**

Governance structures should clearly define the roles and responsibilities of each actor involved in carbon market projects, ensuring that all parties understand their duties and are held accountable.

- **Participatory Processes:**

Effective governance involves a participatory approach where all relevant actors, including local communities and rights holders, are included in decision-making. This helps to gain local support and ensures that projects meet the needs and expectations of all stakeholders.

- **Transparency:**

Transparent governance ensures that all project details, including roles, responsibilities, costs, and benefits, are clearly defined and understood by all actors. This builds trust and reduces the risk of conflict.

- **Equitable Benefit Distribution:**

Governance structures must be equitable, ensuring that benefits are distributed fairly among all actors based on their respective levels of cost, effort, rights, and risks. This is particularly important in regions such as West Africa, where significant social and economic disparities may exist.

- **Efficient Operations:**

Effective governance ensures smooth communication, streamlined administrative activities, and efficient benefit flows, all of which are critical to the long-term sustainability of carbon projects.

- **Dispute Resolution:**

A well-defined management structure must include dispute resolution mechanisms, which are essential for addressing conflicts and ensuring that projects can adapt to changing circumstances.

Robust governance is essential for the success of carbon markets in West Africa by ensuring that projects are managed in an inclusive, transparent, fair, and efficient manner, thereby maximizing their environmental and social benefits.

### Second: Enhancing Regional Cooperation

Enhancing regional cooperation among African countries is a vital step towards the joint development of carbon markets. By establishing alliances, such as a potential West African Carbon Market Alliance, countries can exchange knowledge and expertise, facilitating their collective entry into global markets. This cooperation should extend beyond information exchange to include the coordination of policies and strategies that enhance the effectiveness of these markets and contribute to achieving common climate goals.

#### Third: Improving Infrastructure

Improving infrastructure is essential to supporting carbon markets in West Africa. This requires significant investment in developing renewable energy sources and carbon capture technologies, which will help reduce the cost of producing green energy and carbon credits. By improving this infrastructure, West African countries can enhance their competitiveness in global carbon markets, allowing them to take better advantage of the economic opportunities offered.







## In conclusion

Carbon trading markets represent a vital tool for addressing the challenges of climate change and promoting sustainable development in West Africa. By providing an effective mechanism to reduce emissions and stimulate investments in clean energy, these markets can play a pivotal role in balancing environmental protection with economic objectives. However, prevailing challenges, such as inadequate infrastructure, the absence of comprehensive legislation, and a lack of sufficient human and financial resources, necessitate a comprehensive and strategic response.

Therefore, countries in the region should prioritize enhancing regional cooperation and developing clear legal frameworks to support the growth of carbon markets. Efforts must concentrate on improving governance structures and ensuring that the benefits derived from these markets are distributed fairly. Such measures will enhance investor confidence and encourage broader participation. By investing in modern technologies and the necessary infrastructure, West African countries can capitalize on the opportunities presented by carbon markets to achieve their development goals.

Developing carbon markets is not merely an option but an urgent necessity for combating climate change and achieving sustainable development in West Africa. If the current challenges are addressed effectively, these markets can contribute significantly to improving both environmental and economic conditions in the region, enabling West Africa to play an active and constructive role in global efforts to mitigate climate change.

