Africa Finance Corporation

How Africa Can Unlock World's Most Promising Net-Zero Solution

Instrumental Infrastructure.
Instrumental Africa.

Foreword

by Samaila Zubairu, President & CEO, Africa Finance Corporation

At this critical hour in the fight against climate change, the world is squandering a significant opportunity by **neglecting Earth's most important natural carbon repositories** – Africa's forests, grasslands, peatlands and mangroves. The global carbon markets offer a pragmatic way to change this course for the better, with scope to attract meaningful and much-needed finance for conservation, energy transition and climate resilience.

Yet, as things stand, **carbon markets are failing to deliver. Worse, they risk enabling polluting countries and industries to ignore the burden of their 'pollution per capita' responsibilities and justify backsliding on urgent emission reductions**. Such an outcome would represent a calamitous double blow for Africa, already on the frontline of global warming's impact, by worsening the climate emergency and cheapening the value of our land and forests through inadequately priced carbon offsets.

How did we get here? The fact is the world is enticing Africa to repeat mistakes of the past. Instead of maximising economic value from our natural assets, countries are engaging in the wholesale long leases and sale of land – our valued birthright – to foreign intermediaries that hope to profit from a more appropriately priced carbon market of the future. This is akin to the resource curse of past decades. **We must guard against complicit arrangements that undervalue our natural assets while enabling the industrialised world to keep on polluting, with Africa suffering the biggest costs from global warming**.

What needs to change? It is essential that the continent's political and economic leadership take a strategic approach to harness the full benefits of a viable future carbon market, which Africa must lead. Instead of selling our land rights into today's tarnished and depreciated carbon markets, we should focus on conservation and reforestation – with local actors driving the projects, the financing, the verification, and the trading. **Our continent's natural assets will only achieve their true value through robust mechanisms that guarantee lasting benefits delivered to local communities and governments to sustain conservation long after the initial funding is spent**.

In doing so, **we must reshape the flawed logic of rules governing carbon markets, placing emphasis on incentivising the preservation and expansion of our forests. The prevailing concept of additionality under-values the historical and current significance of African forests in sequestering carbon dioxide, inadvertently accelerating deforestation**. By taking control of our carbon market value chain, we empower communities, fostering motivation and active participation in conservation and reforestation initiatives to secure a more sustainable future for Africa and the rest of the world.

As you will read, at the Africa Finance Corporation, **we are committed to taking a lead role to prioritise the protection and regeneration of Africa's forests, grasslands, peatlands and mangroves. We are focused on unlocking the full value chain to protect our carbon sinks through capacity building, project development and finance, verification and market making**. I encourage government, industry and investment leaders to work with us on this vital journey.

How Africa Can Unlock World's Most Promising Net-Zero Solution

Africa must become the centre for high-value, high-integrity carbon credits

December 2023

Executive summary

In the face of successive global temperature records and the lack of impetus for cohesive carbon emission reductions, the world urgently needs fresh solutions to the climate crisis. From its extensive forests and grasslands to its rich peatlands and mangroves, Africa's vast carbon sinks represent a significant, and potentially the most valuable, untapped resource for carbon capture – both for the continent and the world.

The evidence is incontrovertible. With average global temperatures now at least 1.1 degrees Celsius above pre-industrial levels, our planet is fast approaching the 1.5°C ceiling beyond which scientists foresee environmental catastrophe. Yet, eight years after the Paris Agreement, governments continue to fail to meet their commitments to climate action. Global greenhouse gas emissions have shot up, with the world on course for a 9% increase by 2030 from 2010 levels.[1] In place of resolve to take responsibility for per capita emissions, polluting nations are instead pivoting towards carbon offsets as a way of 'cancelling out' industrialised world emissions.

But while viewed by some as a climate panacea, the fact is that the market for carbon offsets has become existentially compromised. Fundamental trust has been corroded by repeated scandals: conservation projects mired by evidence of exploitation, made worse by corruption; exposés of carbon offsets that do not represent any actual emission reductions; deforestation simply being moved along to regions not covered by offsets; displaced communities that see none of the proceeds from offset contracts.

The damage to market confidence from these recurring exposés is evidenced by a dramatic decline in issuance and prices of carbon credits. Climate projects in poorer countries have been the biggest casualty: representing nearly three-quarters of overall issuance in 2021, the developing world's share has dropped to 53% in 2023.[2]

Although African carbon credits are among the most impacted by this negative cycle, the continent is also in a unique position to reform the carbon markets in a way that will drive trust, value, and localised benefits. Africa's extensive forests, grasslands, peatlands, and mangroves are some of the world's most powerful carbon sinks, helping to mitigate global climate change and increase ecological diversity. **The continent's forests alone absorb a net 600 million tonnes of carbon dioxide each year, more than any forest ecosystem** on Earth.[3] This absorption capacity is equivalent to offsetting 76% of emissions from all of Africa, 21% of Europe's, 18.5% from the US, or 4% from the whole world.

However, Africa faces a critical challenge: rapid deforestation, primarily driven by the local population's reliance on woodfuel for cooking. This issue positions Africa, alongside South America, as an outlier. While other regions are actively increasing their forest cover – with an area the size of Peru added in the last two decades[4] – Africa continues to lose its valuable forests. This trend is likely to accelerate due to population growth, the scarcity of clean cooking alternatives to woodfuel, and increasing developmental pressures. There are no incentives for forest communities to preserve trees. Without intervention, these vital ecosystems risk becoming less healthy, less resilient, and ultimately less effective in combating rising global temperatures.

Solutions to halt deforestation and expand Africa's carbon repositories are cheaper, simpler, and more certain to yield positive climate impact than experimental carbon capture and storage (CCS) technologies. And while there is no inherent value beyond climate control in CCS technologies, nature conservation programmes have the added benefits of creating a better planet for everyone through encouraging biodiversity and reducing the risks of migration and conflict by supporting some of the world's poorest communities with livelihoods and economic development.

[1] Carbon Direct (2023) *State of the Voluntary Carbon Market Report*

[2] Reuters (2023) *Africa Hopes For Starring Role If Carbon Offsets Market Can Overcome Credibility Crisis*

[3] World Resources Institute (2022) *36 Countries Are Gaining More Trees Than They're Losing*

This is why **we are advocating for African leadership to catalyse a shift towards high-quality nature-based carbon removal offsets that enable our continent to protect its valuable carbon sinks, while increasing the value of Africa's offset credits to finance further conservation, reforestation and alternative livelihoods that sustain our environment**.

It is also precisely what the global carbon market is asking for. While representing only 3% of the voluntary carbon market, we see green shoots of growth, with demand for high-quality carbon removal-based credits having jumped five-fold since 2021, even as overall carbon credit issuance has declined following the series of project exposés.

Despite its capacity to remove vast amounts of CO2 from the atmosphere, Africa accounted for just 11% of offsets issued between 2016 and 2021, with an even smaller share – only 3% - linked to the region's natural carbon sinks. Africa should rightfully play a far bigger role in the global carbon markets that reflects its significant contribution towards mitigating the effects of climate change.

While the loss and damage fund agreed at COP27 is essential to address the climate injustice of the most vulnerable nations having contributed the least to global warming, the carbon markets should offer a further mechanism to compensate those countries that have kept their trees and carbon-rich biomes intact. As things stand today, however, global climate frameworks generally preclude countries from receiving financial reward for past emission reductions. This inequity must be reversed.

Carbon market rules on "additionality" prioritise future over historical CO2 reductions. The approach creates a counterproductive incentive which effectively encourages countries to exploit their forest resources, as it allows them to later claim a high risk of deforestation, thereby increasing their potential for compensation. As a result, Africa, with its lower rates of industrialised logging and organised agriculture compared to other regions, finds itself at a disadvantage in claiming compensation for carbon sequestration. This situation calls for strong advocacy by Africa against these unintended rewards and incentives. **The global community should acknowledge and rectify the unfairness and illogical nature of these rules, which overlook the significant contributions of regions like Africa in mitigating climate change through natural carbon sinks**.

Together with Latin America and Asia, it is our view that Africa is the world's most promising region for investments in climate ventures that can affordably and reliably remove vast amounts of carbon from the atmosphere. **In a properly functioning carbon market, offsets based on preserving and expanding Africa's unique carbon sinks must inevitably be high quality and high value, exactly what the world needs at this critical juncture**.

First, though, it is vital that we fix the fundamental flaws in the way global carbon markets are currently designed. Every one of Africa's pipeline of projects must be high quality, high integrity, and demonstrably remove and sequester carbon from the atmosphere. Only then can Africa's offsets command a value that is commensurate with this high quality, which currently is missing from the worldwide market.

To achieve this, **Africa must build its own carbon market value chain** with local actors at all levels backed by deep knowledge, long-term capital support, and capacity in five key areas:

1. **Project developers** committed to achieving the best outcomes for the climate and local communities.
2. **Project finance** specialists and dedicated financing to unlock the supply of high-quality carbon offsets.
3. **Verification** infrastructure supporting high-integrity offsets.
4. **Market makers and traders** to increase Africa's participation in the most lucrative slice of the offsets value chain.
5. **Capacity building support** to effectively scale up carbon markets through equipping governments and regulators with the necessary skills

[4] Climate Central (2023) *The Hottest 12-Month Stretch In Recorded History*

As things stand today, not only is Africa marginalised by the global carbon markets, but the lack of African agency in the production, validation and marketing of carbon offsets means that most of the value from the credits that exist is concentrated in other parts of the world. In realising true value for our natural assets **it is paramount that local stakeholders, communities, and governments become the primary beneficiaries, helping to ensure that their offsets are sustainable, retain integrity, and that the revenues will be redeployed to further projects fighting climate change**.

Already on the frontline of climate impact, and given the needs of our burgeoning population, Africa cannot afford to wait for the rest of the world to assign the value that our carbon sinks deserve. In concert with other significant initiatives, including the Africa Carbon Markets Initiative (ACMI) and the GFANZ Africa Network, the Africa Finance Corporation will support the expansion of an authentic high-quality carbon offset market for Africa through the following steps:

- Dedicate AFC's considerable project development expertise to carbon emissions reduction, driving development of a pipeline of bankable carbon emissions reduction projects that deliver benefits for the climate as well as local communities and the environment.
- Collaborate with partners to address fundamental flaws in the carbon markets infrastructure, ensuring maximum value retention for Africa from its carbon retention resources.
- Build a foundation for conserving, preserving, and reorienting our montane and tropical rainforests, peatlands, and mangroves. Our foundation will aim to halt the destruction of natural carbon sinks, raise financing for conservation as well as advocating for a ban on the foreign sale of Africa's natural assets: land, forests, mangroves, and peatlands.

Our foundation will work with AFC's member countries and beyond to develop knowledge and awareness across government, industry, and communities, which is the starting point to regenerate and conserve our natural assets, and to then create the capacity to deliver significant scalable climate solutions.

Through our experience of developing multi-billion-dollar projects across the realms of energy, transportation, and industrialisation, we understand what it takes to build a pipeline of bankable and de-risked carbon emissions reduction projects. With our partners, AFC is the biggest investor in renewable energy in Africa, with particular focus on the more industrialised nations that account for most of Africa's 4% net contribution to global emissions. Our Infrastructure Climate Resilient Fund, supported by the Green Climate Fund, is focused on building resilience for our systems and physical infrastructure. Now, **AFC is actively pursuing collaboration to scale forest conservation and nature protection**.

One example is the Nigerian Montane Forest Project (NMFP), a community-run venture in one of Nigeria's poorest and most ethnically diverse states. Driven by research and education, the project is achieving reforestation at a faster rate than expected as part of a planned sixfold increase in carbon sequestration, while also creating employment, primary education, and self-sufficiency. AFC is currently working to better understand how the NMFP model could be replicated for protection and expansion of forests across the continent.

What we know for certain is that Africa's interaction with the global carbon markets must change. Africa should not be trading in our natural assets by selling wholesale tracts of land in a tarnished and depreciated market. Instead, we must take ownership of the conservation and expansion of our forests. We need to create our own carbon emissions reduction value chain with global participation that captures and retains value for Africa and the world for generations.

Global warming is the responsibility of the industrialised world.

Solving global warming is Africa's opportunity.

Contents

1. Global Emergency

i. Underscoring the Urgency: Climate Evidence & Forecasts

The evidence is incontrovertible. With average global temperatures now at least 1.1 degrees Celsius above pre-industrial levels, we are fast approaching the 1.5C ceiling beyond which scientists foresee environmental catastrophe.

The most recent climate data signals the climate crisis is accelerating. The average global temperature in the 12 months to the end of October 2023 was 1.32C above the pre-industrial baseline, marking the hottest temperature on record.[5] It follows the hottest eight years on record.[6]

Glacial melt and polar ice loss are occurring at unprecedented rates, with Antarctic Sea ice levels registering a record low in September 2023. It follows three record-breaking low sea ice summers in Antarctica within seven years.[7]

Extreme weather events have become the new normal. The Intergovernmental Panel on Climate Change (IPCC) reports a significant increase in the frequency and intensity of hurricanes, wildfires, and droughts.[8] The rising economic toll from climate-related disasters included the highest ever costs for Nigeria and South Africa following floods in 2022, and for Somalia due to drought.[9]

Biodiversity loss is escalating rapidly, with the World Wildlife Fund warning of a mass extinction event, the likes of which Earth hasn't experienced in millions of years. This collapse of ecosystems not only jeopardises the countless species on our planet but also our own food security and well-being.

Ahead of COP28 in Dubai, the United Nations issued its most dire warning to date: The probability of keeping global warming within the critical 1.5°C limit has dwindled to just 14%. Right now, the planet is on a trajectory for temperatures to increase within this century to as high as 2.9°C above pre-industrial levels.[10]

ii. Facing Facts: Emissions Are Still Rising

Despite the evidence of impending climate crisis, greenhouse gas (GHG) emissions continue to rise relentlessly, eight years after the Paris Agreement committed governments to climate action. The Global Carbon Project reports a 4.9% increase in emissions in 2022, driven largely by human activity. The world is on course for a 9% increase in GHG emissions by 2030 compared with 2010 levels, according to the UN Intergovernmental Panel on Climate Change.

Continued emissions push us closer to critical tipping points, threatening irreversible damage to our climate system.

The urgency of this data demands a paradigm shift in how we approach climate action. The world needs both significant emissions reductions and between 6-10 billion tonnes of CO2 removal per year by 2050.[11]

[5] World Meteorological Organization (2023) *Past Eight Years Confirmed to be the Eight Warmest on Record*

[6] National Snow & Ice Data Center (2023) *Antarctic Sets a Record Low Maximum by Wide Margin*

[7] IPCC (2021) *Weather and Climate Extreme Events in a Changing Climate*

[8] Yale Climate Connections (2023) *Dozens of Billion-Dollar Weather Disasters Hit Earth in 2022*

[9] United Nations Environment Program (2023) *Emissions Gap Report*

[10] World Resources Institute (2023) *State of Climate Action*

[11] The Economist (2023) *How Carbon Prices are Taking Over the World*

iii. Four Components to Fight Global Warming

The influence of carbon markets is growing rapidly. According to the Economist, one quarter of all global emissions are now covered by carbon offsets, up from just 5% in 2010, and the spread is likely to accelerate in coming years as more countries "come round to the advantages of carbon pricing" and schemes expand their reach.[12]

The biggest risk from this expansion is that offsetting their carbon footprint enables countries to justify stalling on the much more difficult process of executing commitments on reducing emissions and shifting towards low-carbon economies.

The data shows governments are failing to execute the GHG emission cuts needed. In place of the resolve to reduce emissions is a growing enthusiasm for carbon offsets to cancel out industrialised world emissions.

This is why it is critical that four components to fight global warming are working in tandem.

1. Transition to low carbon sources of power, transportation, and industrial activity to reduce the current stock of emissions by 30%
2. Conservation of forests, mangroves, and other carbon sinks to produce a further 30% emissions reduction
3. Resilience for our food and water systems and physical infrastructure, combined with preserving biodiversity, to adapt to an increased magnitude of natural catastrophe
4. Innovation to convert carbon into useful materials or create safe storage through carbon capture technologies.

iv. Conservation & Carbon Offsets

Given the alignment of political will and the potential to generate meaningful capital for climate finance projects, the market for carbon offsets has become pivotal. For this reason, our paper focuses primarily on pragmatic steps for African nations to realise the economic potential from emissions offsets through the global carbon markets.

[12] The Africa Report (2022) *Time for Action on Africa's Carbon Market Opportunity*

2. Carbon Markets Opportunity & Challenge

i. Scope for Offsets as a Solution

In the face of of successive global temperature records and a lack of cohesive carbon emission reductions, the world urgently needs fresh solutions to the climate crisis. From its extensive forests and grasslands to its rich peatlands and mangroves, Africa's vast carbon sinks represent potentially the most valuable, untapped resource for carbon capture – both for the continent and the world.

The market for carbon credits offers a potential route to realising this value. For Africa, carbon markets offer an opportunity to funnel essential finance to climate projects. It is critical that the continent takes a unified and strategic approach to the market to maximise the benefits of carbon offsets.

In the same way that Africa's leadership has focused on moving up the value chain from exporting minerals, metals, and commodities towards processed and finished goods to extract full value, the same is true of our land assets. Africa must optimise the value derived from its natural carbon assets throughout the entire value chain. Countries must resist the wholesale acquisition or lease of their precious natural capital, which includes lands, forests, peatlands, and mangrove ecosystems. Instead, they should leverage the potential of these resources to establish a consistent revenue stream through active and direct participation in carbon markets.

Given Africa's natural assets, the continent can become a world centre for carbon credit initiatives, generating capital for projects to advance nature conservation, climate adaptation and resilience, and sustainable economic development. The potential for funding is substantial. Carbon market prices range widely, from $2–3 per tonne in the most commoditised markets to over $1,000 per tonne in innovative carbon capture markets, according to Dalberg. By UN and Rockefeller Foundation estimates, Africa could generate around 1.5 to 2.5 gigatonnes of CO2 equivalent annually, which at $20 per tonne of CO2 would be worth $50 billion per year.[13] Based on a price of $100 per tonne, the Climate Action Platform for Africa (CAP-A) calculates that African nature-based carbon removal projects alone could generate $57 billion in annual revenue and support livelihoods for over 140 million people.

This scale of capital is essential. The UNFCCC estimates indicate that sub-Saharan Africa will need US$1.7 trillion by 2030 to transform its economy and avoid the worst physical impacts of climate change.[14]

[13] S&P Global Market Intelligence (2022) *Financing Subsaharan Africas Energy Transition*

[14] As of 2020, CDM credits were no longer eligible for use under the EU ETS

ii. Challenge of a Discredited Market

The fundamental problem with carbon offsets as a panacea is that the market has become existentially compromised. Trust in carbon credits has been corroded by multiple investigations that have found critical flaws in carbon offset programs: conservation projects tarnished by evidence of corruption and exploitation; deforestation simply being moved along to regions not covered by offsets; displaced communities that see none of the proceeds from the contracts.

These reported problems are not on the fringe of the market. These are findings from some of the largest and best-known programs. Take the UN's Clean Development Mechanism (CDM). This was one of the earliest major offset schemes established under the Kyoto Protocol, the mechanism that allowed countries to meet binding emissions reduction targets by buying carbon offsets typically generated by low-energy projects in countries such as China, India, South Korea, and Brazil. Roughly half of the 2.3 billion carbon credits issued by the CDM have been part of the European Union's Emissions Trading System (ETS).[15]

Despite this high-level prominence, a 2016 EU-commissioned study concluded that 85% of CDM projects, particularly those focused on wind power and hydropower plants, were likely to have "overestimated their emissions reductions" and supported no "additional" low-carbon capacity in developing countries. According to the UN Intergovernmental Panel on Climate Change (IPCC) AR6 report, "there are numerous findings that the CDM, especially at first, failed to lead to additional emissions cuts in host countries, meaning that the overall effect of CDM projects was to raise global emissions". One study cited by Carbon Brief found that the sale of CDM offsets to regulated polluters has increased global emissions of CO2 by 6 billion tonnes.[16] Furthermore, 52% of the carbon offsets were allocated to projects that would have been built anyway, i.e., did not meet the additionality requirement governing offsets.

Similarly, the world's second largest offset programme, Verra's Verified Carbon Standard, which has issued 1.2 billion voluntary carbon offsets to date, is at the centre of controversy. In early 2023, a team of academic researchers claimed that 90% of the Verra offset credits analysed as part of an investigation were based on implausible claims of emissions reduction.[17] According to the report, only 6% of Verra's deforestation avoidance credits represented real emission reductions. Notably, as one of the four major carbon offset standard developers globally, Verra's guidelines underpin 75% of all carbon offsets sold on the voluntary carbon market. The institution now faces calls for boycott.[18] Many of the offsets in question issued by Verra are linked to the premise of avoiding deforestation mainly in Africa and South America and are within the REDD+ framework (see box on the next page).

85% of carbon projects in the world's largest offset scheme – the UN's Clean Development Mechanism – were found to have raised global emissions.

[15] Center for Climate Change Economics and Policy, London School Of Economics (2021) *Do Carbon Offsets Offset Carbon?*

[16] The Guardian (2023) *Revealed: More Than 90% of Rainforest Carbon Offsets by Biggest Certifier are Worthless, Analysis Shows*

[17] Institute for Agriculture & Trade Policy (2023) *Call for the EU to Reject Carbon Offsets Following Scandal of Largest Voluntary Carbon Offset cCertifier*

[18] Nature (2021) *Congo Basin Rainforest — Invest US$150 Million in Science*

The Trouble with REDD+

Introduced in 2007, REDD+ (Reducing Emissions from Deforestation and Forest Degradation) is an international policy framework established under the UN Framework Convention on Climate Change (UNFCCC). Its primary objective is to provide financial incentives to developing countries for the preservation of their forests. Projects within the REDD+ framework are designed to reduce greenhouse gas emissions by encouraging the sustainable management and protection of forests in these nations. The mechanism operates by allowing participating countries to generate income for their development efforts when they successfully decrease carbon emissions resulting from deforestation and forest degradation.

Half of the offsets issued by the top four voluntary offset registries and most of the current offsets issued by African projects are within the REDD+ framework.

Critics have raised concern about the effectiveness of REDD+ projects in substantially curbing emissions caused by forest loss in developing countries, and a growing body of evidence suggests the projects often overstate their climate impact.

These are some of the issues:

Leakage - This occurs when efforts to reduce deforestation and forest degradation in one area lead to increased deforestation in nearby regions. For example, if a REDD+ project prevents logging in one forest, loggers may simply move to a neighbouring forest, negating the emission reductions achieved.

Land rights and indigenous communities - Africa has a rich diversity of indigenous communities and local populations with deep connections to forests. Some REDD+ projects have faced disputes and controversies related to land tenure and indigenous rights. For instance, in Cameroon, the introduction of a REDD+ project in the Ngoyla-Mintom forest raised concern about land rights and the impact on local Baka indigenous communities.

Additionality - To be effective, REDD+ projects should result in emissions reductions that would not have occurred without the project. Demonstrating additionality or proving that emissions reductions are directly attributable to the REDD+ project, is challenging in Africa due to various factors, such as a lack of baseline data and monitoring infrastructure. This has been a significant issue in countries like the Democratic Republic of Congo.

Measurement and verification - Accurate measurement and verification of emission reductions from forests is particularly challenging in Africa, where many countries have limited resources for monitoring. In Mozambique, for example, concerns have been raised about the accuracy and reliability of carbon accounting in REDD+ projects.

Permanence - Permanence of emission reductions remain a concern in Africa, as forests may face threats from deforestation, wildfires, or natural disturbances. For example, in Madagascar, forest conservation efforts have been hampered by issues like illegal logging and slash-and-burn agriculture.

Market-based approaches - Some African REDD+ projects involve market-based mechanisms including carbon offset credits, which raise concerns about commodifying nature and potentially allowing polluters in developed countries to continue emitting carbon by purchasing offsets elsewhere without reducing their own emissions. Projects in countries including Kenya and Tanzania have raised questions about whether these mechanisms genuinely contribute to sustainable forest management and community development.

Lack of Local Benefits: In some cases, the economic benefits of REDD+ projects have not reached local communities, causing resentment and opposition. Ensuring that local people benefit from conservation efforts is crucial for the sustainability of these projects.

Most of the challenges and controversies surrounding REDD+ projects in Africa parallel those in other parts of the world.

Source: Based on multiple reports including Mongabay, Carbon Brief, Worldbank

Notable examples of offsets that are now contested for their lack of environmental impact and absence of benefits to the local communities include the Kariba REDD+ project in Zimbabwe, which has issued 36 million credits since 2011 based on preventing deforestation around Lake Kariba. A number of other carbon offset projects have been found to have negative impact on the indigenous population, with little to no demonstrable value from the projects. An analysis of 60 carbon offset projects by Carbon Brief found that about 72% caused harm to indigenous peoples and local communities. Most reports of carbon offsets causing negative impacts were in Latin America (24), followed by Africa (16), Asia (7), Australia and New Zealand (5), Europe (4) and North America (4). Among the Latin American cases, 20 were located within the Amazon rainforest.

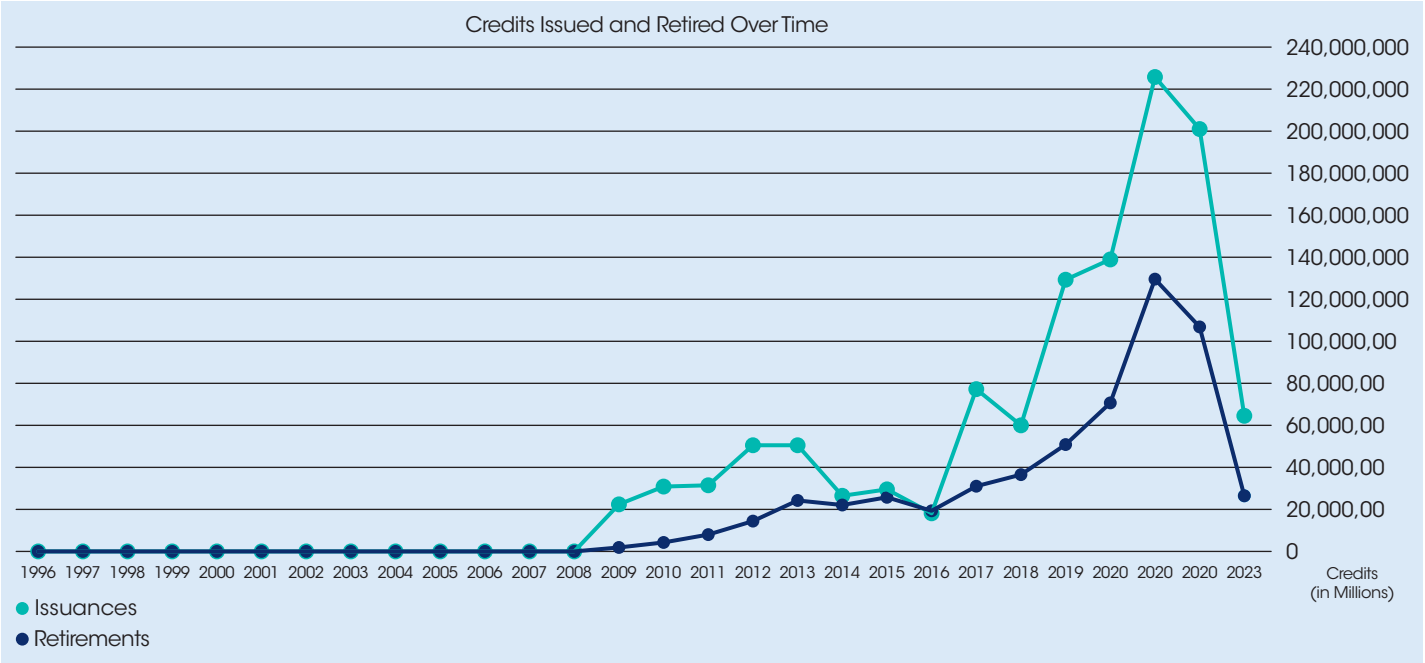
It is critical that African countries guard against external project developers, brokers and investors further tarnishing the value of forest and natural asset preservation to sell carbon credits.

iii. Offset Issuance Trends

Issuance in the voluntary credit markets soared from 2016 to 2021, driven by the rapid adoption of corporate climate goals, which in turn fueled market speculation of rising demand for offsets (figure 2.1). Both the issuance and retirement of offsets (representing supply and demand) have been on the decline since.

The decrease in retirements has been particularly pronounced, indicating a loss of confidence among major corporate buyers. In 2022, corporations purchased and retired 145 million carbon offsets, down from 161 million in 2021. This decline follows multiple reports revealing shortfalls from the emission reductions promised. In turn, these reports have raised concerns about the authenticity of carbon-neutral claims by prominent global companies and have contributed to a credibility crisis in the VCM.

Figure 2.1 A marked drop in demand for offsets, reflected in falling retirements



Source: Berkeley Carbon Trading Project's Voluntary Registry Offsets Database

iv. Africa's Negligible Role

Figure 2.3 Africa accounts for only 13.4% of all credits issued by the largest voluntary offset project registries

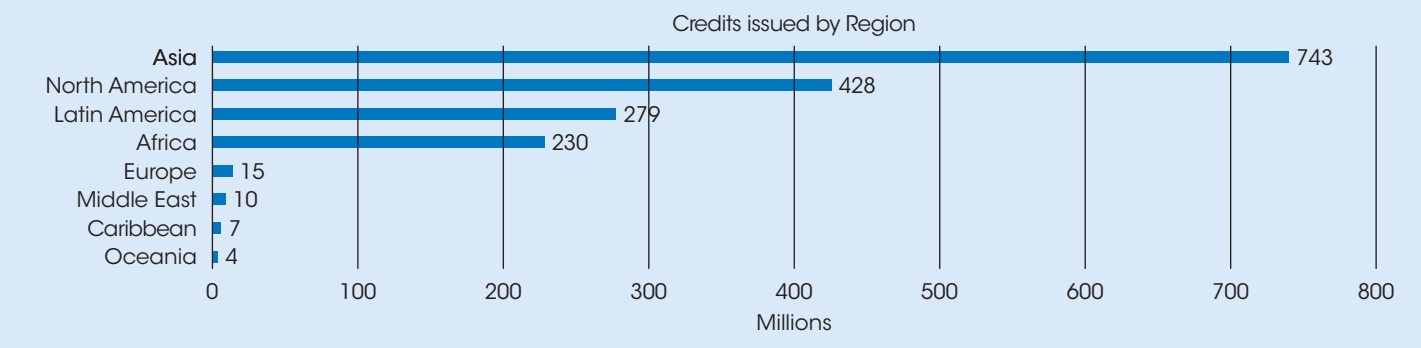
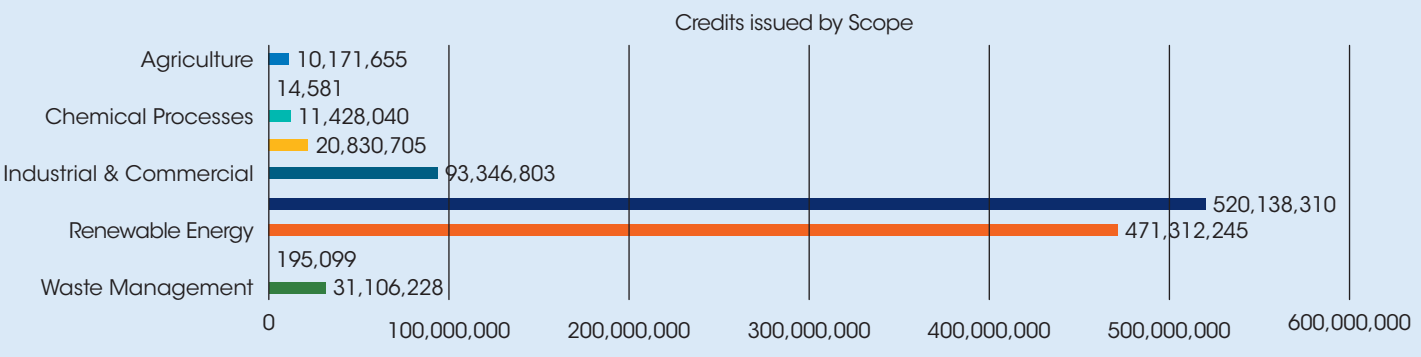


Figure 2.4 The majority of which are avoidance credits in the forestry and renewable energy sectors



Source: Berkeley Carbon Trading Project's Voluntary Registry Offsets Database

Note: The database contains all carbon offset projects listed globally by four major voluntary offset project registries: American Carbon Registry (ACR), Climate Action Reserve (CAR), Gold Standard, and Verra (VCS). These four registries generate almost all of the world's voluntary market offsets and include projects eligible for use under the California / Quebec linked cap-and-trade programs as well as UN Clean Development Mechanism projects that transitioned into one of the voluntary registries.

3. Africa's Unique Advantage

i. Significance of Africa's Forests, Grasslands, Peatlands, Mangroves

Africa's forests, savannah grasslands, peatlands, mangroves, and marine ecosystems play a crucial role in removing and sequestering greenhouse gas emissions, the bulk of which are generated outside of the region. Yet the contribution of these abundant natural carbon sinks to the cooling of the global atmosphere has historically been underestimated and therefore under-valued in terms of financing.

Tropical Rainforests

Africa's forests, covering about 21% of the continent's land area, are comparable in size to the forests of North America or Asia, and are four times larger than those in the European Union. Primarily in the equatorial regions, 80% of the continent's tropical rainforest lies in the Congo River Basin, which spans eight central African countries: Cameroon, Central African Republic, Republic of Congo, Democratic Republic of Congo, Equatorial Guinea, and Gabon.

Thanks to extensive forest cover and relatively low rates of deforestation, the Congo Basin is one of the most efficient natural carbon sinks in the world, meaning the forests absorb much more CO2 annually than they emit. The CO2 is sequestered or stored within the forest ecosystem and can be quantified as carbon stocks that will remain removed or captured for as long as the trees are standing.

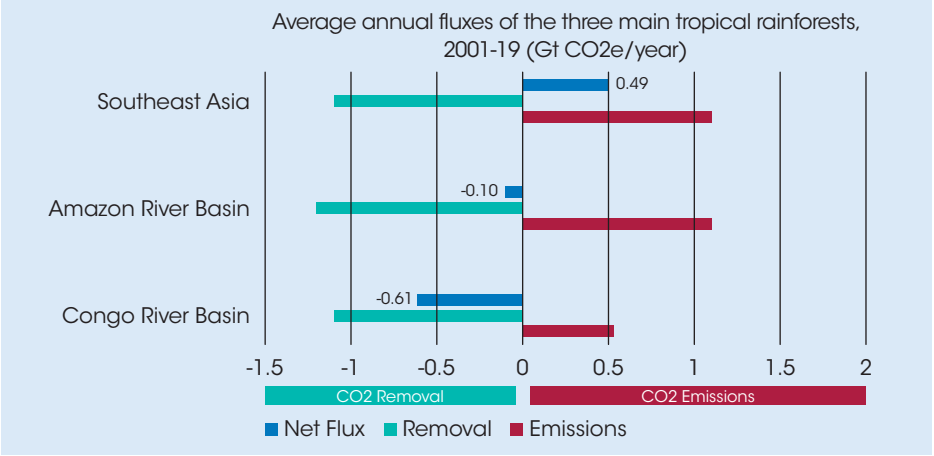
In total, central Africa's forests store between 25–30 billion metric tonnes of carbon within their vegetation. This massive amount represents about half of the entire world's annual global emissions at 53.8 billion tonnes of carbon dioxide equivalent ($GtCO_2e$).

Every year, these tropical rainforests are removing a net 600 million tonnes of CO2 from the atmosphere (figure 3.1). That's equivalent to about 76% of emissions from all of Africa, 21% of the amount from Europe, 18.5% from the US, or 4% of emissions by the whole world. Taken on their own, countries overall in the Congo Basin absorb far more carbon than they emit.

To further underscore the enormous importance of Africa's forests for global climate regulation, **the Congo Basin stands out as the only one of the world's three largest tropical rainforests with sufficient forest cover to continue being a potent net carbon sink**, according to the World Resources Institute and conclusions from a 2020 report by Nature Climate Change (see figure 3.1). Two countries in the region – Gabon and Republic of Congo – are included in the Worldbank's classification of high forest, low deforestation (HFLD) countries, which have at least 50% forest cover and experience deforestation at a lower rate than the global average.

Central Africa's forests store between 25–30 billion metric tonnes of carbon within their vegetation. This massive amount represents about half of the entire world's annual global emissions.

Figure 3.1 The Congo basin is the world's only remaining net carbon absorbing tropical rainforest



Sources: Mitchell and Pleeck (2022), & Harris & Gibbs (2021)

Despite their ecological significance, Africa's forests have failed to attract the levels of funding seen in South America and Asia, receiving just 11.5% of total funds allocated for the conservation and sustainable management of tropical forests in the decade to 2017.[19] While financial pledges since the 2021 COP26 conference[20] signal increased global acknowledgement of the essential value of African forestry, much of the funding commitment has yet to materialise.

Tropical Montane Forests

Africa's forests, covering about 21% of the continent's land area, are comparable in size to the forests of North America. Tropical montane rainforests are humid, biodiverse ecosystems found in the mountainous regions of Africa, Asia, the Americas, and equatorial Oceania. Typically, between a thousand and 3,500 metres above sea level, they are defined by their dependence on cloud cover, which keeps the tree crowns immersed in mist.

A recent scientific study concludes that Africa's tropical montane forests are more concentrated carbon stores than the Amazon.

In 2021, over a hundred scientists examined intact old-growth (primary) forests across 44 montane sites in 12 African countries. Their study, published in Nature, found that these montane forests contain an average of 149.4 tonnes of carbon per hectare. This level is two-thirds higher than estimates previously cited by the Intergovernmental Panel on Climate Change (IPCC). It also revealed that montane forests in Africa are denser carbon stores than the Amazon Rainforest.

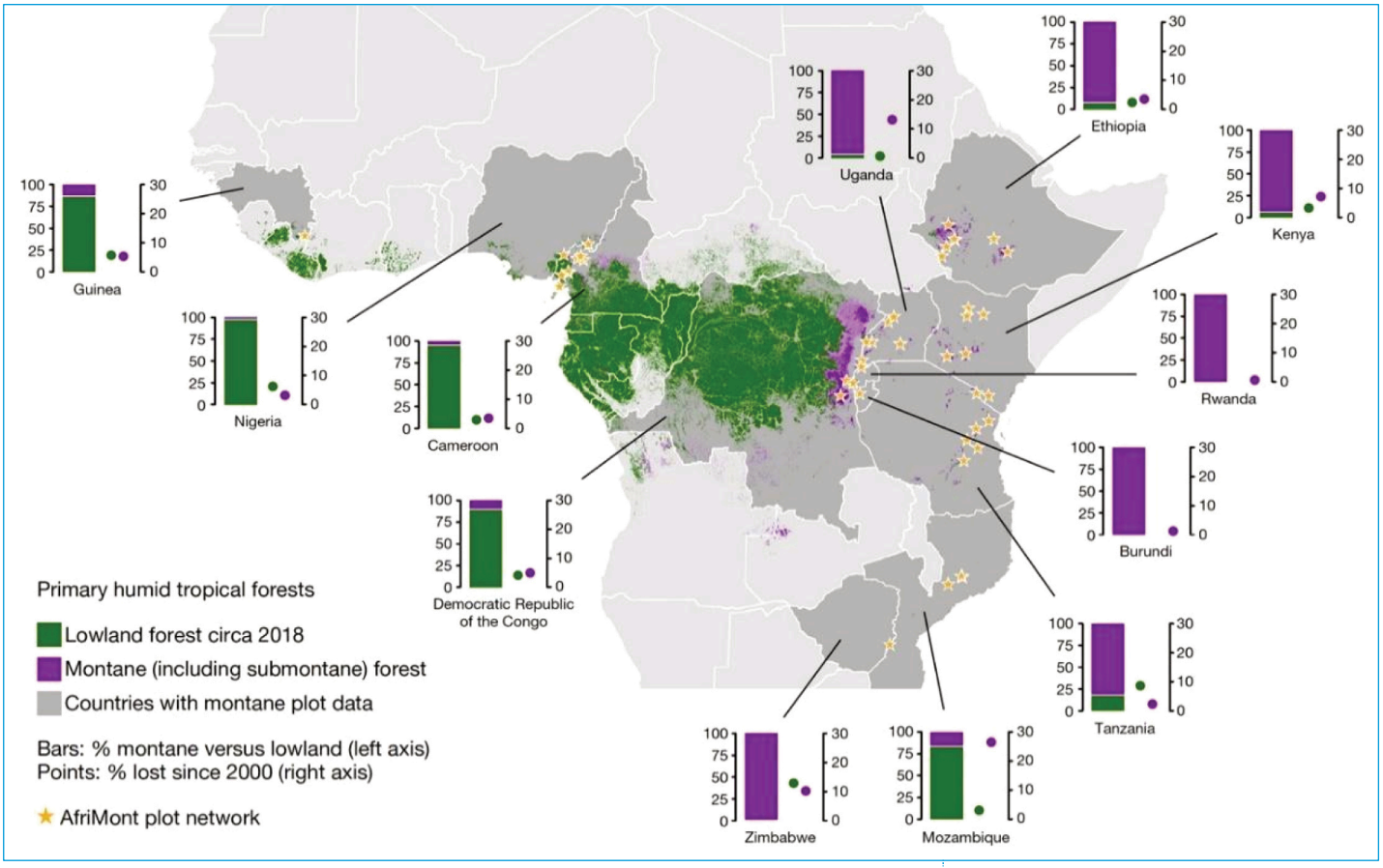
Additionally, the study found that in 10 of the 12 countries surveyed, these harder-to-access montane sites accounted for most, if not all of the evergreen old-growth forests undisturbed by human activity.[20]

[19] At COP26 in 2021, 12 donors from the richest countries pledged $1.5 billion to protect the Central African rainforest from 2021 to 2025 in what was known as the Congo Basin Pledge. Furthermore, the Global Forest Finance Pledge (GFFP) announced donors' intention to collectively provide $12 billion in climate finance to forest-related programmes between 2021 and 2025. As part of the Deforestation Pledge at COP27, 100 countries pledged to stop and reverse deforestation by 2030

[20] Nature (2021) *High Above Ground Carbon Stock of African Tropical Montane Forests*

[21] Nature (2023) *Soil Carbon Storage Capacity of Drylands Under Altered Fire Regimes*

Figure 3.2 Carbon-dense montane forests are concentrated in a few key African countries



Source: Cuni-Sanchez, A., et al. (2021)

Chart notes: The research assembles and analyses data from nearly all major mountain regions on the African continent. Elevations range from sub-montane forests closer to the coast (<1000m) to the Rwenzori mountains (>3500 m). Proportion of lowland (green bars) to montane rainforests (purple) in each of 12 African countries that were part of the study (dark grey shading). The percentage of each rainforest that has been lost since 2000 is shown by coloured points.

Mangroves

Mangroves are among the most efficient carbon-storing ecosystems in the tropics as a result of their high productivity and the slow rate of soil decomposition. This allows up to five times more organic carbon storage than tropical upland forests.

Africa is home to about 19% of the world's mangrove coverage, second only to Asia. Three-quarters of the 2.82 million hectare mangrove expanse is in western and central Africa. These areas collectively store around 854 million metric tonnes of carbon.

The importance of mangroves to climate change mitigation is increasingly acknowledged, along with their economic value in supporting coastal communities, resulting in restoration initiatives in several countries including Mozambique, Kenya, Madagascar, Gambia, and Senegal.

Peatlands

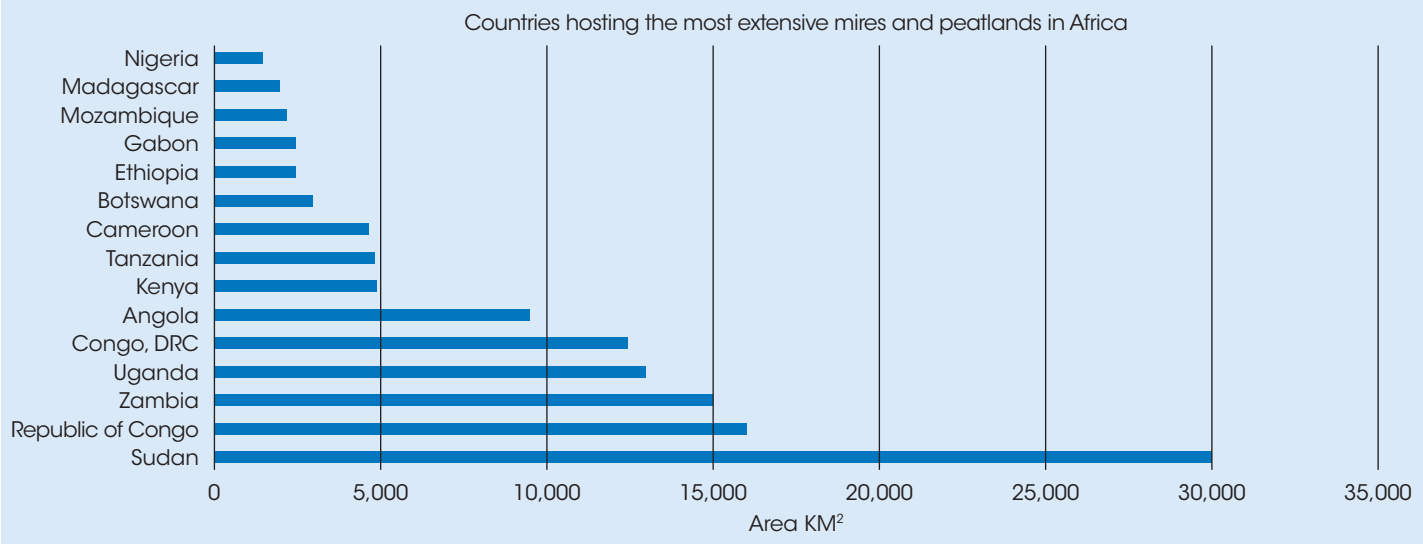
The expansive peatlands in Africa, covering nearly 40 million hectares, are a vital though frequently overlooked aspect of the continent's diverse ecosystem. These bogs or wetlands are predominantly in the African tropics, regions characterised by high rainfall, as well as in the cooler climes of Lesotho and Ethiopia's uplands, and in regions with sustained groundwater discharge, such as the Mozambique coastal plain and the karst landscapes of southern Africa.

Africa's largest peatland area is in the Cuvette Centrale in the Congo Basin, spanning approximately 145,500 square kilometres and storing around 30 billion tonnes of carbon. The Nile Basin's 30,445 square kilometres of peatland holds a further 10 billion tonnes. The Palmiet peatlands in South Africa and the Bale Mountains in Ethiopia are also notable for their biodiversity and ecological importance.

Although this substantial carbon storage places peatlands among the most carbon-rich ecosystems globally, there is a need for greater awareness of their significance to ensure their protection. Enhanced understanding among policymakers and institutions about effective management strategies would help to mobilise necessary international funds and private finance for their conservation.

Africa accounts for 8% of global peatlands.

Figure 3.3 Carbon-dense montane forests are concentrated in a few key African countries



Source: Grundling, P., and A.P. Grootjans (2018)

Savannas

Savannas cover almost half of the continent, spanning more than 13 million square kilometers across most of central Africa, from south of the Sahara and the Sahel to the north and southern tips. While they receive relatively little attention, savannas are able to store more carbon below ground than forests, providing a vital role in global carbon dynamics. This storage occurs primarily in the root systems of grasses and through decaying organic matter. Over the last two decades, savanna-grassland regions globally have seen an increase of approximately 640 million metric tonnes in stored carbon.[22]

The savannas face significant challenges, particularly from growing pressure to cultivate land for agriculture. As demand for food increases with population growth, conversion of savanna lands into farmland poses a significant environmental risk as it can lead to the release of gigatons of CO2 sequestered over millions of years, contributing to global warming.

Balancing the need for increased agricultural production with the imperative of maintaining the carbon storage capacity of savannas is a complex challenge. It requires innovative land management strategies that can enhance food production without compromising the ecological integrity of these regions. Sustainable agriculture, agroforestry and conservation policies that protect large areas of savanna are essential to maintain their role as critical carbon sinks while addressing the food security needs of the growing population. This balancing act is pivotal in the broader context of addressing climate change and sustaining ecological health in Africa and globally.

Semi-Arid Drylands

The semi-arid drylands below the Sahara and north of the Equator sequester an estimated 840 million metric tonnes of carbon beneath 9.9 billion trees, according to a March 2023 study published in Nature.[23] While the amount of carbon held in Africa's tropical humid tropical rainforests can be 10 to 20 times higher, the amount is nevertheless far higher than previously thought.

[22] Nature (2023) *High Above Gound Carbon Stock of African Tropical Montane Forests*

[23] This section quotes from an internal AFC research memo prepared by Dalberg Advisors

ii. Threat from Deforestation

To protect these natural assets for Africa and the world's benefit, targeted and specific action is urgently needed. The Food and Agriculture Organization (FAO) reports that Africa experienced the highest deforestation rate globally from 2010 to 2020 at 12%, or about 3.9 million hectares every year (figure 3.3). Forest coverage has receded from 17.53% of the continent in 1990 to 15.68% in 2020.

While Latin America and Asia historically experienced higher deforestation rates primarily due to commercial activities such as clearing land for palm oil, soy cultivation, and cattle grazing, in more recent years Africa's deforestation rates have overtaken.

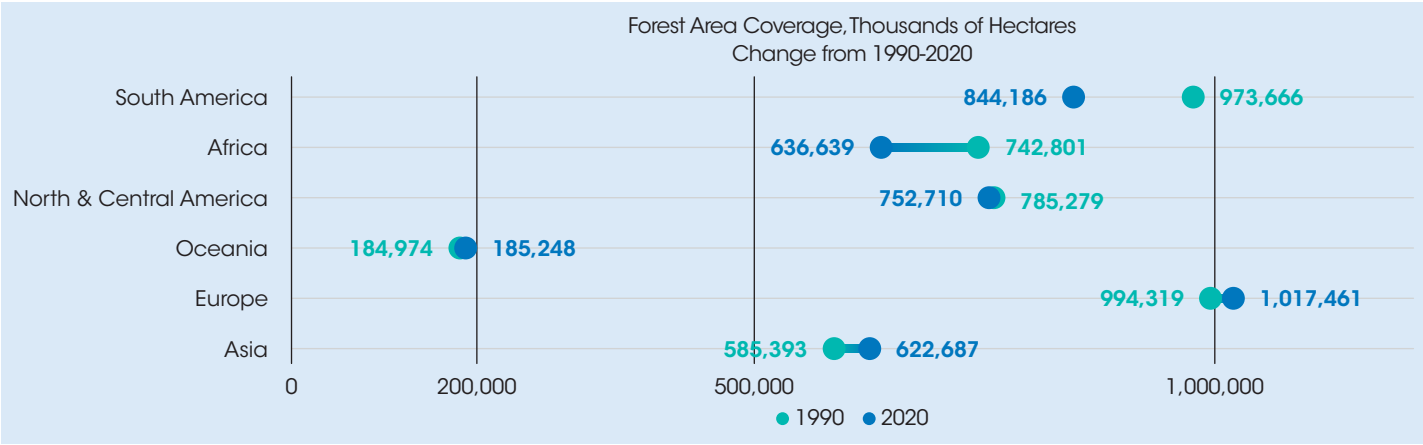
Asia in particular, led by China, has reversed its trend through extensive reforestation efforts, a ban on logging, and a target to increase forest cover to 23% by 2020. As a result, Asia recorded the highest net gain in forest area between 2010 and 2020, with China expanding forest cover from nearly 12% to over 18% in the last two decades.

In Africa, deforestation is interwoven with the region's developmental challenges. Over 950 million people in sub-Saharan Africa rely on wood and charcoal for cooking, a number projected to rise to 1.67 billion by 2050, according to the International Energy Agency. This is because 600 million people, or about 43% of Africa's population, lack access to reliable and affordable clean cooking facilities and electricity, according to IEA data. Reliance on woodfuel and charcoal exceeds that of any other region globally and is a significant cause of deforestation in Africa.

Deforestation has been widespread across the continent, with about 40% of African countries seeing at least a 10% reduction in forest cover in the last three decades (figure 3.4). West African countries have been particularly affected, with Côte d'Ivoire losing nearly half of its forestry since 1990, and Gambia, Niger, and Chad also experiencing substantial deforestation.

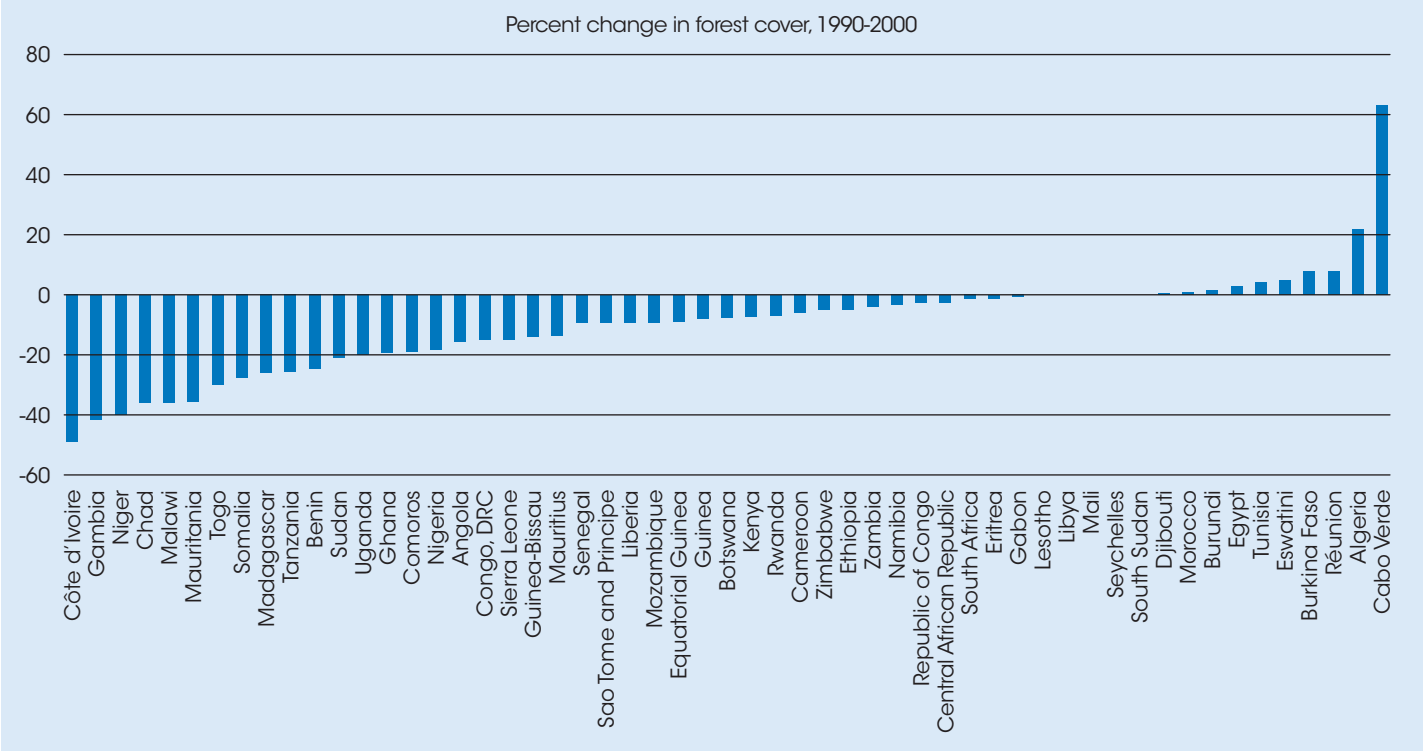
Africa is losing its forests at a faster rate than any other region.

Figure 3.4 Deforestation in Africa and South America has bucked international reforestation trend



Source(s): FAO Global Forest Resources Assessment, AFC Research

Figure 3.5 Extensive deforestation occurred in most African countries during the last three decades



Source(s): FAO Global Forest Resources Assessment, AFC Research

iii. Solutions for Permanent Carbon Sequestration

Achieving permanent carbon sequestration in Africa requires tackling the developmental factors driving deforestation, focusing especially on old-growth primary forests. Foremost among informal pressures is the use of trees as firewood and charcoal for cooking.

Transitioning to cleaner fuels, particularly liquefied petroleum gas (LPG), offers a scalable solution to reduce pressure on forests. This can be seen particularly from Brazil's experience, with over 95% of the population switching from firewood, charcoal and kerosene to LPG for cooking between 1960 and 1980. This shift was largely due to government subsidies covering 50% of LPG costs and efficient distribution. While the direct impact on deforestation has not been quantified, it is estimated that a single household moving from woodfuel to LPG can save about 100 m2 of forest each year. In Brazil's context, with over 95% of the population now using LPG or cleaner fuels, that would equate to savings of around 0.73 million hectares of forest annually, or nearly a quarter of Brazil's current annual rate of deforestation.

In modern times, the fact that LPG is a hydrocarbon makes this solution more complex. International institutions split between their development and sustainability goals hold back on scaling LPG in Africa. Given the ecological and development benefits of LPG as a cleaner and scalable alternative to woodfuel and charcoal, it is incumbent on Africa's policymakers and institutions to advocate for adoption of LPG as a cleaner transition fuel, and expedite their own efforts given the high entry costs for the private sector.[24] This is particularly the case in African countries where targeted financing can grow domestic and regional champions with potential to scale. There is a further urgent need to unlock bottlenecks for national and regional LPG supply infrastructure for institutions, including the Africa Finance Corporation.

The key to saving Africa's forests is in resolving its clean cooking dilemma.

Reforestation, Afforestation, Restoration & Protection

To effectively restore lost forests and achieve permanent carbon sequestration, it is essential for Africa's leaders and institutions to collaborate on ambitious projects to plant new forests (afforestation) and restore degraded ones (reforestation), with the benefits not only of sequestering carbon but also enhancing biodiversity and soil quality.

Rather than relying on large-scale continental programs like the "Great Green Wall[25]," which face funding and execution challenges, it is more effective to build upon the successes of smaller, localised restoration programs. Successful examples include the Nigeria Montane Forest Project (See Box 2), Mirema Forest in Kenya[26], and the Kibale Chimpanzee Project in Uganda.[27]

Common factors contributing to the success of these restoration programmes include significant community ownership and engagement, along with capacity-building through training and upskilling local communities, and a focus on research and education to develop scientific understanding of specific African forest ecosystems. This has ensured sustainability – for example, high tree survival rate in the Mirema initiative to repair degraded forest ecosystems.

[24] The Great Green Wall Initiative (GGWI) is a project of the African Union which was adopted in 2005 with the goal of restoring 100 million ha of degraded land in the Sahel, sequestering 250 million tonnes of carbon and increasing arable land

[25] World Agroforestry (2022) *In Kenya, a Community Regrew its Forest — and Redefined Reforestation Success*

[26] Kibale Chimpanzee Project

[27] Data from the Worldbank's Carbon Pricing Initiative

The Nigeria Montane Forest Project – A Reforestation & Conservation Model for Africa

In 2022, AFC partnered with the Nigerian Montane Forest Project (NMFP) to support the conservation of montane forests. A key achievement was the NMFP's inclusion in a 2021 groundbreaking study published in Nature, which found that African montane forests rival the Amazon in carbon storage, holding up to 164 tonnes of carbon per hectare. This finding has been pivotal in elevating the protection and expansion of African forests within AFC's climate strategy. Over the last two decades, the project has successfully regenerated the Ngel Nyaki Forest Reserve in Northeastern Nigeria. This success is attributed to a synergy of scientific research, educational initiatives, and strong community involvement, exemplifying a sustainable model that balances ecological preservation with the enhancement of local livelihoods.

The Landscape

The NMFP's field station is in the Ngel Nyaki reserve on the Mambila Plateau in Taraba State, Northeastern Nigeria. While relatively small, covering 46 square kilometers with roughly 7 square kilometers of intact montane forest, the Ngel Nyaki forest reserve currently contributes up to 118,000 tonnes of carbon storage. It has the potential to hold 754,000 tonnes when fully restored.

Research-based Approach

The NMFP operates on a foundation of research and education, actively involving the community in its implementation. The project has contributed significantly to scientific knowledge, publishing over a hundred papers that enhance understanding of the local forest ecosystem, its carbon storage capacity, biodiversity, and reforestation techniques. The NMFP has also played a vital role in academic mentorship, overseeing 14 PhD and 25 MSc students, and has fostered skills among more than 70 industrial training students. Many of these students have later achieved international recognition through prestigious scholarships.

The project has strong links with international scientific bodies such as Royal Botanical Gardens Kew, the Smithsonian Institute Washington, Oxford University, the Natural History Museum (Paris), The University of Exeter (UK), and The University of Canterbury (New Zealand). Locally, the NMFP shares its knowledge through collaborations with 11 Nigerian universities, frequently hosting a large number of undergraduate students at its reserve campus.

This collaboration with Nigerian universities is pivotal to the NMFP's blend of research, education, and community involvement. A significant portion of the academic contributions originates from local individuals, many of whom have pursued advanced studies under Professor Hazel Chapman, the founder and science director of NMFP. An example of this is Professor Danladi Umar, who conducted his PhD research at the reserve and is now the Project Director.

Community Engagement

The Ngel Nyaki reserve's preservation and growth owe significantly to its integration within the local community, alongside the involvement of Nigerian academics. Misa Zaibaru, a resident of the local community, plays a vital role as the NMFP's site manager. He acts as an essential intermediary and has become a skilled educator within his community, emphasizing the importance of protection and expansion of the forest.

Community outreach, however, is not community engagement. From its inception, the NMFP has therefore prioritized ensuring that the project benefits the community by focusing on employment, primary education, and self-sufficiency. This is exemplified by the project being run almost entirely by the local community, with nearly 40 full-time staff. NMFP has funded a primary school that educates over 300 students each year, some of whom have now completed relevant university degrees and are passionate environmentalists. The project supports initiatives like bee-keeper training, which has equipped over 100 local individuals with the skills to start their own honey production business.
While the NMFP continually grapples with the threat of forest loss due to burning and grazing, the project has effectively mitigated this risk by deeply integrating itself within the local community. This includes employing members of the local pastoral community as part of its patrol team and collaborating with successive state governments and traditional rulers. The benefits of this community engagement were evident during a recent fire incident; the local community was the first to respond, successfully extinguishing the fire and preventing substantial deforestation.

What's Next

The NMFP's research has enabled the exploration of various reforestation techniques, leading to the conclusion that enhancing existing forests is more effective and sustainable than creating new ones. Observations in mid-2023 suggest a significant development: the forest is regenerating at an accelerated rate compared to previous years. This phenomenon is currently under detailed study to comprehend the underlying factors and ways to further expedite this process.

The AFC is enthusiastic about these advancements and is looking forward to a deeper collaboration with the NMFP. The goal is to gain a comprehensive understanding of the reforestation strategies employed at Ngel Nyaki, and how these practices can be adapted and applied to other conservation projects throughout the continent.

Further reading:

P. Grundling (2018). Peatlands of Africa.
https://www.researchgate.net/publication/309777557_Peatlands_of_Africa

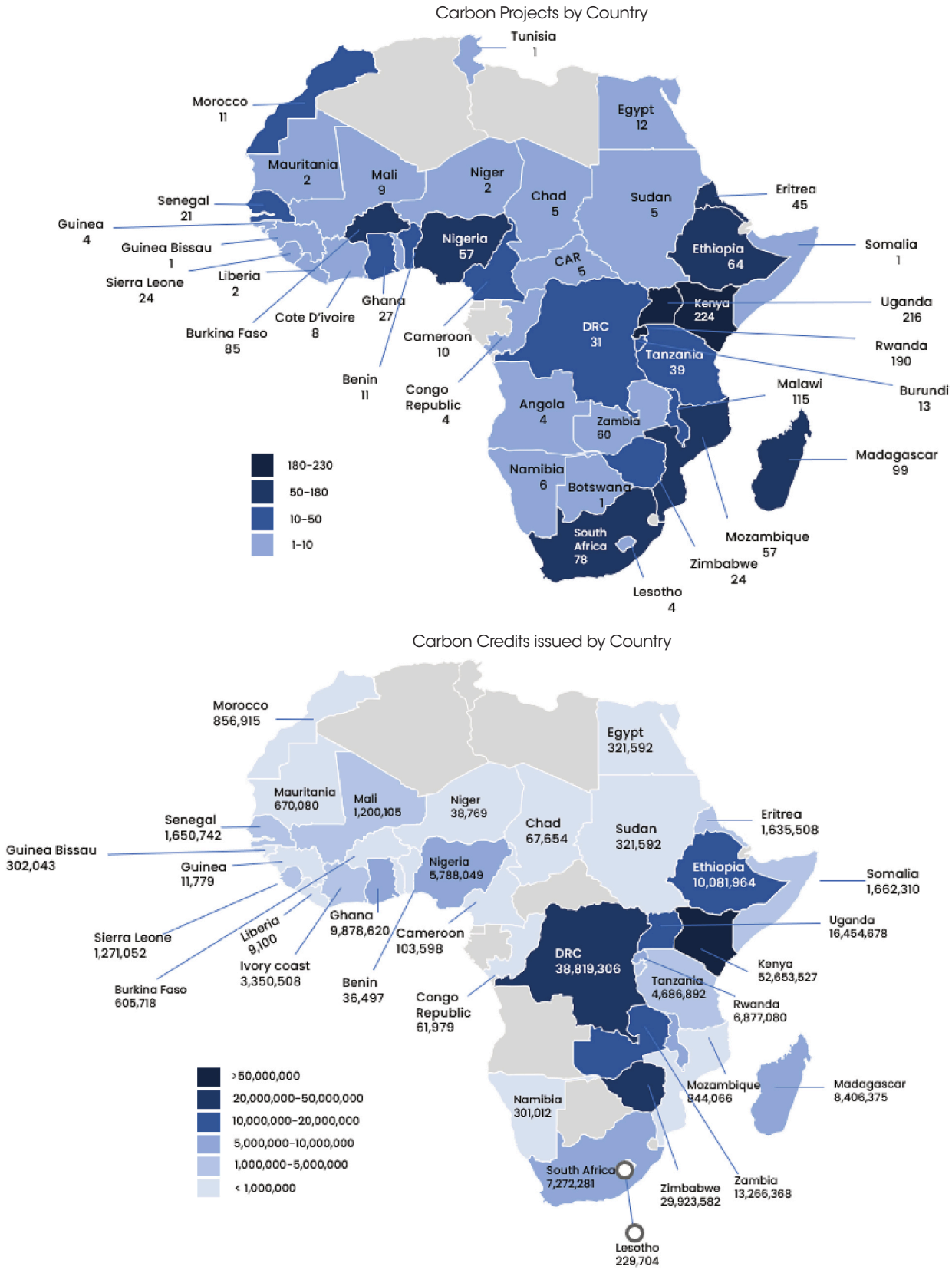
FAO. 2023. The world's mangroves 2000–2020. Rome.

Leal, Maricé and Spalding, Mark D (editors), 2022. The State of the World's Mangroves 2022. Global Mangrove Alliance.

UNEP (2022). Global Peatlands Assessment – The State of the World's Peatlands: Evidence for action toward the conservation, restoration, and sustainable management of peatlands. Global Peatlands Initiative. United Nations Environment Programme, Nairobi.

4. Carbon Markets Landscape

Figure 4.1 Carbon projects are concentrated in East & Southern Africa, with relatively fewer projects in the Congo Basin as of May 2023



Source(s): Berkeley Carbon Trading Project's Voluntary Registry Offsets Database, AFC Research

i. Voluntary vs. Compliance

Each carbon credit represents a commitment for the avoidance, reduction, or removal of one tonne of CO2 emissions from the atmosphere. The credits fall into two categories. In the compliance market, purchases are driven by regulatory obligations, which stem from international treaties translated into national laws. Under Article 6.2 of the Paris Agreement, countries can engage in the exchange of carbon credits to meet their Nationally Determined Contributions, or NDCs, individual country-level commitments that outline the efforts and actions intended to reduce GHG emissions and adapt to the impacts of climate change. In the voluntary carbon market (VCM), purchases are made voluntarily, often as part of a public commitment to achieve net-zero emissions.

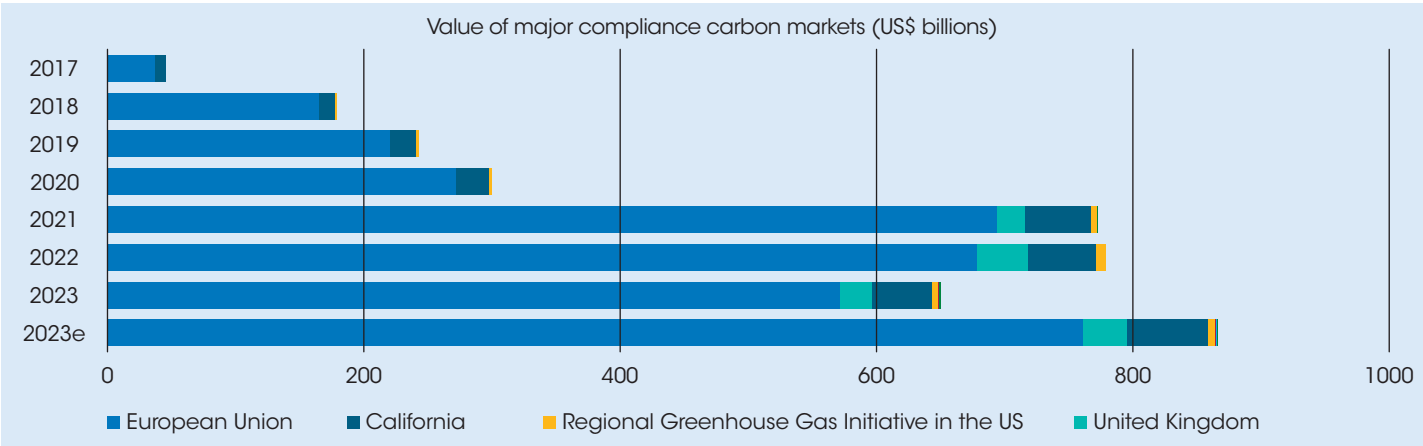
For the most part, Africa has yet to benefit, with no role in the compliance market. Between 2016 and 2021, some 11% of credits issued in the VCM originated from Africa, while the share in terms of dollar value is much smaller.

Compliance Markets

- **Governed by mandatory carbon reduction regimes:** An emissions trading system (ETS), sometimes referred to as a cap-and-trade system, caps the total levels of GHG emissions permitted. It allows those industries with low emissions to sell their extra allowances to larger emitters. By creating supply and demand for emissions allowances, an ETS establishes a market price for GHG emissions. The cap helps ensure that the required emission reductions will take place to keep the emitters (in aggregate) within their pre-allocated carbon budget.
- **Total value expected to top US$800 billion:** This is based on BloombergNEF data for 2023. While the European Union has continued to dominate the market, accounting for c.90% of its total value (Figure 4.2), other markets are also growing; new markets are set to be launched in Brazil, Mexico, and India.
- **Predominant model of the global north, China and Indonesia:** It incorporates the EU's Emissions Trading Scheme (EU ETS), China's ETS, and regional ETS's such as California's. Overall, there are 36 ETS carbon pricing initiatives globally, covering 12 national jurisdictions, 23 subnational and 1 regional. Compliance carbon markets are under consideration in a further 17 countries, including two in Africa: Gabon and Nigeria.[28]
- **Coverage is expected to represent 17.64% of global emissions:** This is based on all the above ETS initiatives at c.8.91 gigatonnes, according to the Worldbank's Carbon Pricing Dashboard. Coverage rises to 23% of GHG emissions, or 11.66 gigatonnes, when grouping in other carbon schemes, notably carbon taxes.

Compliance
$800B
Market size 2023

Figure 4.2 Global Carbon Markets Inch Closer to $1 Trillion



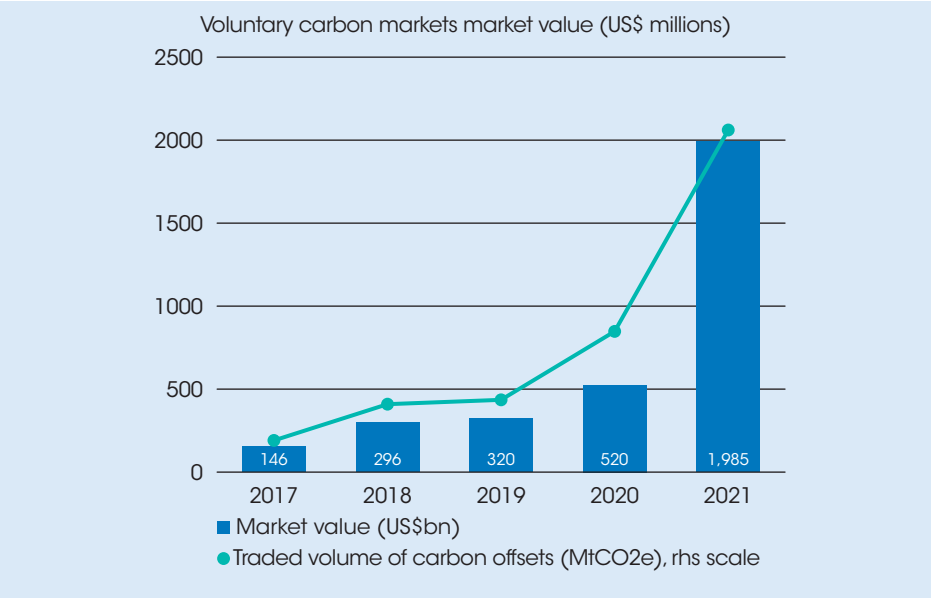
Source: BloombergNEF

[28] SustainableViews (2023) *South Pole Exits Troubled Kariba Carbon Project Over Quality Concerns*

Voluntary Carbon Markets (VCM)

- **Far smaller than the compliance markets:** The VCM is valued at around $2 billion.
- **Offsets from carbon projects in Africa and other low-income regions:** These are traded on the VCM dating back several decades, allowing entities to offset their carbon emissions by investing in projects that remove or prevent carbon emissions.
- **Used particularly by industries with limited decarbonisation options:** Aviation, steel, cement, and oil and gas companies are among the major buyers. The idea is that companies should first explore ways to reduce emissions and then use offsets to neutralise any remaining. The concern is that companies use offsets as a quick fix without taking the needed steps towards decarbonising their processes.
- **Regulated by non-governmental organisations and four key registries:** The registries are the Verified Carbon Standard, the Gold Standard, the Climate Action Reserve, and the American Carbon Registry.

Figure 4.3 Relatively smaller, the Voluntary Carbon Offsets Market has recently hit turbulence



Voluntary
$2B
Market size 2021

Source: Ecosystem Marketplace

ii. Carbon Removal vs. Reduction, Avoidance

Two types of credits are available to companies wishing to offset their emissions:

1. **Reduction & avoidance credits:** External projects that prevent or reduce the release of emissions into the atmosphere, such as building a wind farm or transitioning to fuel efficient cookstoves. This category accounts for 82% of offsets currently in the voluntary markets. This segment has potential to deliver worthwhile projects, but it also contributes significantly to concerns about offset quality.
2. **Removal/ sequestration credits:** Projects that remove carbon from the atmosphere, including nature-based solutions such as afforestation (planting trees at scale on previously unwooded land) and reforestation (replacing previously felled trees or biochar).

Quality Control

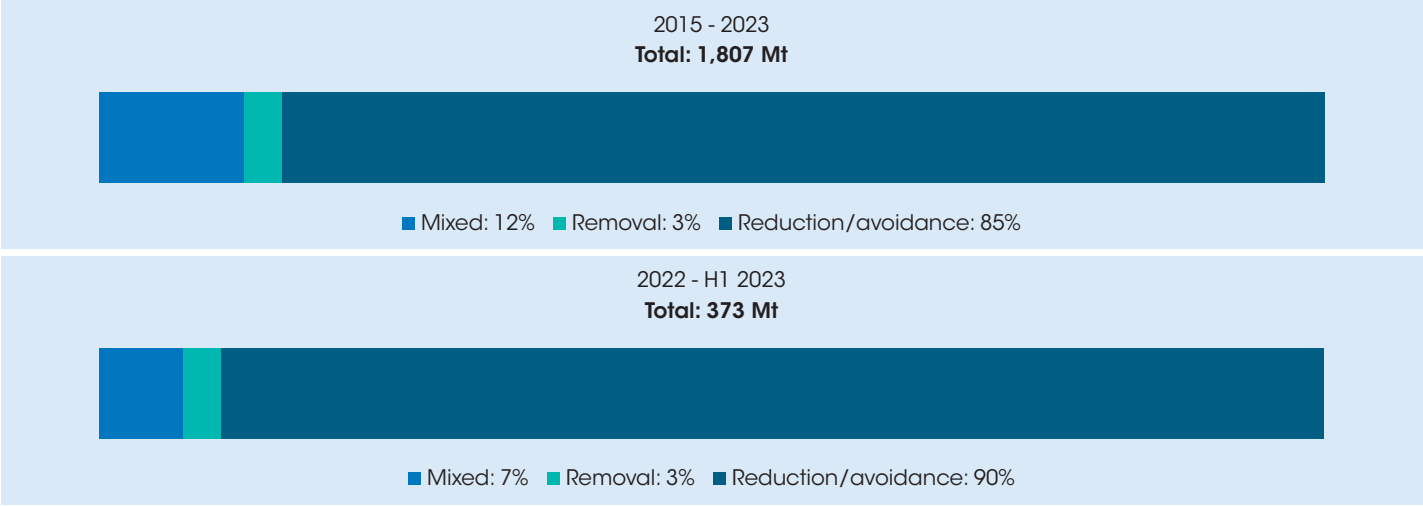
Prominent reports challenging the carbon mitigation claims of reduction/ avoidance offsets have heightened awareness of the need for more stringent filtering and verification in the voluntary carbon market. Corporations are increasingly seeking high-quality, high-integrity offsets. Some are opting to bypass intermediaries and instead engage directly in project development. This approach allows them to have more control over the quality and impact of their emission reduction efforts and reduces the risk of association with compromised offset projects. Tech giants like Google, for example, have shown a preference for developing their own renewable energy projects, such as wind and solar farms, rather than solely relying on the purchase of carbon offsets.

Similarly, companies like Apple have invested directly in reforestation programmes to directly control the integrity of their carbon offset initiatives and contribution to biodiversity and local communities. These instances highlight the shift towards greater corporate involvement in project development to meet sustainability goals and enhance the credibility of carbon reduction efforts.

Shift to Removal

While constituting a minor share of VCM issuance at just 3% (figure 4.4), removal credits are similarly experiencing robust growth in demand and look set to become far more important going forward. Bloomberg's Voluntary Carbon Markets Tracker shows removals-focused buyers with dedicated quality standards for procurement have increased their spot market and forward purchasing (offtake) approximately fivefold from 3.1 million tonnes in 2021 to 15.1 million tonnes through the third quarter of 2023. These purchases are dominated by a few big companies, with two purchases by Microsoft and Airbus, for example, representing over 80% of the publicly announced high-durability removals purchases between 2022 and H1 2023. While in-year removals retirements have remained relatively steady at approximately 8 million tonnes per annum in 2021 and 2022, the significant forward purchases made by these buyers signal a growing demand for high-quality removals.

Figure 4.4 Removals-based offsets currently account for the smallest share of the offsets market



Source: Ecosystem Marketplace

Trend Aligns with African Interests

Expansion of the quality-focused removals market aligns well with Africa's strengths, given the region's established carbon sinks as well as significant potential for man-made carbon removal activities. This shift offers strong prospects for attracting investments that enable Africa to assume a more substantial role in supplying carbon offsets that genuinely remove and sequester carbon dioxide, thereby making a meaningful contribution to global carbon reduction efforts.

Prioritising quality in a removals-based market would likely result in significantly higher offset prices, which would be highly advantageous for Africa.

With the underlying assumption that demand for offsets will increase substantially in the coming decade as companies strive to achieve net-zero emissions goals, BloombergNEF's 2023 Long-Term Carbon Offsets Outlook sets out three scenarios:

1. All types of offsets, including avoidance/ reduction offsets are permitted: The market becomes oversupplied, leading to an average offset price of just $18 per tonne until 2050.
2. A removals-only market emerges: The average offset price could soar to $127 per tonne, significantly above the current price of US$90 per tonne of CO2 at which Europe's EEG (renewable energy levy) emissions permits trade
3. The market splits in two, keeping prices reasonable, but failing to direct investment to technology-based removal and the most impactful avoidance projects

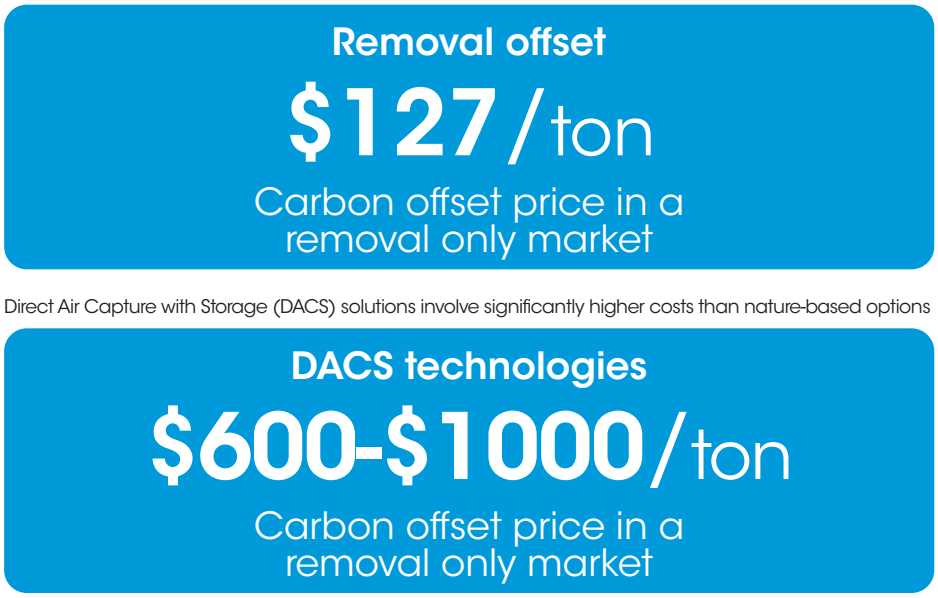
Whatever the precise outcome, the shifting focus of voluntary carbon markets towards removals-based offsets holds significant potential benefits for Africa. This trend directs more financial resources towards conserving and expanding the continent's natural carbon sinks, which, if properly managed, should enhance the well-being of local communities living in these forests and ensure the long-term sustainability of this valuable carbon resource. The global positive impact is optimised by cutting carbon dioxide levels in the atmosphere more efficiently.

Another significant development poised to transform voluntary carbon markets is the ongoing negotiation of Article 6.4 of the Paris Agreement, which has been underway for two years. When implemented, Article 6.4 could dramatically alter the landscape of international carbon credit trading by establishing a new framework for a global carbon market. This would create new demand for credits, with the United Nations determining eligibility criteria. Such a development could be advantageous for Africa, as it may provide access to a larger global market specifically for high-quality, removals-based offsets. Additionally, the establishment of standards by a UN body could also play a crucial role in addressing any trust concerns associated with African offsets.

iii. Natural Solutions vs. Carbon Capture Technology

A further scenario that could be less positive for Africa is one in which rich countries respond to the chaos in voluntary carbon markets by pivoting wholesale towards technology-based carbon capture. Direct air capture (DAC) removes carbon dioxide from the atmosphere by passing air through a chemical solution (liquid DAC) or capturing the CO2 in a filter system (solid DAC). The technology has some advantages over nature-based removal – it offers permanence and quantifiable storage while natural carbon removal solutions such as forests are at risk of deforestation and climate change induced threats. However, scaling DACs is hindered by very high costs, currently ranging from $600 to $1000 per tonne of carbon. This is anywhere from 5x to 8x higher than the price of a nature-based removals offset.

Figure 4.5 The price of a carbon offset could rise as high as $127/ton in a removals-market



Source: BloombergNEF, International Energy Association (IEA)

iv. Additionality & Retroactivity

Core to any carbon offset project is the concept of additionality: the principle that emissions reductions or carbon removal achieved through the project would not have occurred without the project's intervention. In other words, the project's activities must be additional to the business-as-usual scenario. If the emissions reductions or carbon removal would have happened anyway, with or without the project, then the project lacks additionality and is not eligible for carbon credits or offsets.

The concept of additionality raises several challenges for African and other developing countries:

- **Limited baseline data:** Developing countries, including many in Africa, often lack comprehensive historical emissions data and monitoring infrastructure. This makes it difficult to establish a credible baseline against which additionality can be measured.
- **Economic development needs:** Developing countries, by definition, are in the process of industrialisation and optimising economic growth, which implies rising emissions. This makes it challenging to demonstrate additionality even when seeking to implement emissions reduction or carbon removal projects.
- **Inequity:** By extension of the above point, the concept of additionality can feed inequity by limiting the ability of developing countries to access carbon finance for projects that genuinely contribute to emissions reductions or removals.
- **Barriers to investment:** The strict criteria for additionality can discourage investors from supporting projects in developing countries. They may perceive the process of proving additionality as too burdensome or risky.
- **Retroactivity:** Retroactivity is a related issue where historical emissions reductions or removals are not considered eligible for carbon credits. This means that emissions reductions achieved before a project's validation are often not compensated, even if the project is responsible for them.

To date, there are no noteworthy instances of a country receiving full compensation from the global community for historical carbon sequestration and the cooling effects achieved by its forests and other natural assets, though two countries have come close:

Compensating Brazil

In 2019, the UN Green Climate Fund (GCF) approved the first proposal for REDD+ results-based payouts. This effectively involved the GCF compensating Brazil for the reduction in deforestation rates observed in 2014 and 2015 when compared against average rates recorded from 1996 to 2010. In exchange for approximately 19 million tonnes of emissions reduction, the GCF agreed to provide Brazil with $96 million. While this payment marked a step in the right direction, it is important to note that Brazil was compensated only for the specific two-year period during which it could demonstrate a reduction in deforestation rates relative to a predetermined baseline measurement. It is also worth highlighting that undertaking this complex retrospective work was the responsibility of the country itself, and it is likely to pose a significant hurdle for African nations seeking retroactive compensation for equivalent reductions.

Carbon offset rules unfairly preclude any compensation for past carbon capture, which in non-industrialised Africa's case is significant given the region's low emissions.

Gabon-Norway

In 2021, Gabon became the first African country to receive compensation for protecting its forests. The country received an initial $17 million from a pledged $150 million from Norway as part of the Central African Forest Initiative (CAFI). The payout was based on lower emissions from forest loss in 2016 and 2017 relative to a 2006-2015 baseline.

Additionality Injustices

Beyond limited exceptions, the principle of additionality generally precludes countries from receiving financial reward for past emission reductions. Several countries in Africa have conserved extensive natural carbon sinks, providing a valuable but uncompensated service to the world in the form of carbon removal. These countries have hosted vast forests and ecosystems that have been absorbing and sequestering carbon dioxide from the atmosphere without receiving compensation for their vital role in mitigating climate change. It is important that industrialised nations recognise and reward this role through commitments such as the 'loss and damage fund' agreed at previous COPs.

There is a further serious risk from the concept of additionality. Countries are in effect incentivised to build on their forests as this enables them to later demonstrate high risk of deforestation. On this basis, Africa's case for compensation is lower than every other region of the world, which have higher rates of industrialised logging and organised agriculture. Africa must advocate strongly against such perverse rewards and incentives, and the global community should recognise the injustice of these rules.

Further reading:

Carbon Direct. 2023 State of the Voluntary Carbon Market.

BloombergNEF. 2023. Global Carbon Markets Get Bigger, Even as Trading Dips.

BloombergNEF. 2023. Long-term Carbon Offsets Outlook

BloombergNEF. 2022. Gap Between Compliance and Voluntary Carbon Markets Narrows.

IEA. 2023. Unlocking the potential of direct air capture: Is scaling up through carbon markets possible?

Morgan Stanley, 2023. Where the Carbon Offset Market is Poised to Surge.

5. Focus Areas to Optimise Value

Africa's pipeline of projects must be high quality, high integrity, and must demonstrably remove and sequester carbon from the atmosphere. Only then can our natural assets command a price that is commensurate with this high quality, which currently is missing from the worldwide market.

To achieve this, Africa must build its own carbon market value chain with local actors at all levels backed by deep knowledge and long-term capital support. This entails taking a more significant ownership role, beginning with the origination stages, including early project development, verification, and registration, to the distribution processes including brokerage, market making, and reselling. This is the only way to prevent fundamental flaws in the way global carbon markets are currently designed from cheapening Africa's carbon offsets.

Africa's nature conservation projects should treat the global carbon markets with caution. Within the international offsets arena, the compliance market, with a value estimated at around US$800 billion, presents a significant opportunity given its larger scale relative to voluntary carbon markets. Considering that the EU Emissions Trading System (ETS) represents almost 90% of the global compliance market, it might appear strategically beneficial for Africa to pursue inclusion in this system. However, the plethora of issues and controversies in the global offset market risk triggering ongoing trust issues.

The solution is for Africa's leadership and institutions to earn the trust of investors by putting in place robust and transparent processes to underpin a supply of high-quality, sustainable carbon removal offsets that directly and permanently benefit local communities. This strategy aligns with global environmental objectives and should ultimately lead to a higher price for carbon offsets, thereby supporting broader development objectives with far-reaching impacts on livelihoods.

Nearly two-thirds of all of Africa's voluntary carbon offsets are generated by two foreign firms.

Key to success is developing local actors backed by deep knowledge, long-term capital support, and capacity in the following five core areas:

i. Project Development

Project developers committed to achieving best outcomes for the climate and local communities

Over 80% of African offsets issued by the four main global carbon registries are from non-African developers or owners, according to the Berkeley Carbon Trading Project's Voluntary Registry Offsets Database. Two companies generate 62% of Africa's carbon offsets: green carlife Works Carbon LLC, a U.S.-based firm, is responsible for 44.4%; Guernsey-based Carbon Green Investments contributes 17%. These figures are particularly relevant in the context of Carbon Green Investments' Kariba REDD+ project in Zimbabwe. This landmark African project, which produced over 23.8 million carbon credits with total value peaking at around $100 million, has come under intense scrutiny.[29] Carbon Green Investments and South Pole, a Swiss firm marketing and trading the offsets, have claimed that the project maintains a large forest area through the proceeds of selling credits in the carbon credit markets, amid accusations of over-issuance of carbon credits that don't match the cited climate impacts. BeZero Carbon, a carbon ratings agency, reviewed, downgraded, and ultimately removed Kariba from its coverage.[30]

The collapse of the Kariba REDD+ offset market has caused considerable reputational damage. Its downfall is likely to impact other African projects, potentially affecting their credibility and prospects, while those still in the planning stages risk new obstacles in securing investment. The debacle exposes the domino effect caused by concentration of the market in the hands of a few players. It also underlines the importance of projects being run by local developers that are embedded with the community, have a deep understanding of the regional landscape, and are more likely to be driven by development concerns that prioritise community welfare. Local authorities must have a monitoring role to ensure projects fulfil their promises, particularly in terms of delivering tangible benefits to the communities. Ensuring in this way that local populations benefit from projects exploiting their natural resources is not just a matter of fairness but also essential for the sustainability and long-term success of these initiatives.

[29] Bloomberg (2023) *Faulty Credits Tarnish Billion-Dollar Carbon Offset Seller*

[30] Bloomberg (2023) *South Pole's Collapsing Mega-Project Throws Offsets into Chaos*

What can be done to enable local developers of carbon projects?

Getting African projects off the ground, from idea to bankability, involves multiple stages: the developer identifies a project, assesses its feasibility, engages with stakeholders, determines baselines, monitors implementation, and has the project validated by a third party. Each stage demands a high level of expertise and precision to ensure the project meets defined criteria for carbon offsets. Projects tend to have extensive development periods and often entail multifaceted feasibility studies and transaction advice. These resources (finance and expertise) are required on-the-ground to create bankable projects. All told, project development costs for projects can be as high as 5 to 10% of the total programme cost. This sort of finance is not readily available on the continent.

AFC is committed to utilising our extensive experience in developing projects across Africa and our understanding of climate finance to collaborate in identifying suitable project developers and working together to fast-track project execution.

ii. Project Finance

Funding to unlock supply of high-quality carbon offsets

Costs for developing carbon projects are exceptionally high, surpassing even the generally elevated costs of projects in Africa. This presents a substantial hurdle for developers, who need robust cash flows and the ability to produce a substantial volume of carbon offsets to meet these costs. Upfront expenses for carbon projects include substantial listing fees, usually ranging from $100,000 to $200,000, along with recurring annual fees to retain the rights to issue carbon credits. Further expenses include technical consultant and audit fees, and numerous implementation costs.

These high upfront expenses lead to two main challenges: smaller-scale projects or those in riskier markets face particular difficulty in securing funding, and any funding that is available tends to be on condition of a significant share of future carbon revenue, often 30-60%, thereby diminishing returns for both the project developer and local communities.

Recognising these high initial costs, entities like AFC can help create a pipeline of bankable carbon projects through early-stage catalytic investments to draw in further funding sources, including concessional funds such as the African Development Bank's African Carbon Support Project, and climate-related funding from developed countries, which pledged to provide $100 billion annually to assist developing nations in coping with climate change impacts.

iii. Verification

High-integrity carbon offset verification infrastructure

A recent Bloomberg article summed up the three components most critical in the carbon industry as "MRV": monitoring, reporting and verification. These steps are essential to confirming the effectiveness of carbon projects in reducing emissions and cleaning up the atmosphere. The process begins with measuring GHG emission reductions from mitigation activities, such as reducing deforestation emissions, over a specified period. These measurements are then reported to a third-party certifier for verification. Upon successful verification, the standard-setting body or verifier certifies these reductions, signalling the applicable registry to issue carbon offsets or credits.

Standard setters and verifiers essentially set the rules for carbon credits, defining key principles such as additionality, permanence, and leakage (see section 4). They do this by establishing a standard, which are the foundational rules outlining how projects are structured, verified and validated, incorporating various methodologies for specific credit types or projects. They also maintain a registry to track projects and their issued credits.

Where do carbon standard setters get their licence to operate? Who put them in charge? In short, the legitimacy of carbon standard setters comes from buyers, typically large companies seeking assurances that their purchases genuinely benefit the planet. Without the capacity for in-depth due diligence, corporate buyers rely on verifiers to ensure quality.

Currently, the global verification system for carbon offsets is concentrated around four major voluntary offset carbon registries, all based in the global north, namely: American Carbon Registry (which has a geographical focus on the Americas), Climate Action Reserve (which is US focused), Gold Standard, and Verra. This concentration means that, outside Latin America, the majority of developing world carbon offsets are verified by US-based Verra and Gold Standard in Switzerland.

This lack of diversity in the African offset market, with reliance on just two standard-setting bodies and verifiers with little proximity to project sites, has proven especially problematic recently, with market instability triggered by allegations that Verra approved millions of worthless offsets. Beyond destabilising the offsets market, the disruption is worse for the communities reliant on the underlying projects.

Emerging standard-setters and verifiers such as Puro.earth, focusing on specific credit types like biochar and geological storage, and MoorFutures, concentrating on peatland rewetting, are steps in the right direction. But these are still early stage, and, originating from the global north, they fail to address concerns over the market's lack of diversity and proximity.

To mitigate the risks associated with the current market concentration, expansion of the African carbon offset market should be complemented by development of African-centric standard-setting and verification infrastructure.

The key challenge will be establishing credibility for the new verifiers in the eyes of primarily global north buyers. To resolve this issue, there must be an advocacy, support and oversight role for independent bodies, such as the Integrity Council for the Voluntary Carbon Market (ICVCM), as well as governments and regulators.

A more localised and credible verification framework could significantly enhance the effectiveness and reliability of the African carbon offset market.

iv. Market Making & Trading

African participation in the trading of carbon offsets is vital as this represents one of the most lucrative segments of the value chain. Prices for carbon credits have historically increased with global demand for emission offsets. For now, this value is mostly captured by major global north traders and financial institutions.

Trading and revenue generation in African hands would increase the chances that proceeds are reinvested locally, fostering socio-economic development and environmental sustainability. In the Kariba REDD+ example highlighted earlier, a Bloomberg investigation found that most of the project's proceeds had gone to the two partners of South Pole, the Swiss company that owned and traded the carbon offsets, rather than the communities fighting deforestation, as claimed by the company.[31]

Beyond retaining financial value for the continent, participation in market making and trading is also about asserting control and stewardship over critical resource, and ensuring that the benefits align with the needs and priorities of local populations who are the true guardians of these ecosystems.

v. Capacity Building Support

To effectively scale up carbon markets in Africa, substantial investment in capacity building is essential, particularly in regulatory areas. This encompasses equipping governments, policymakers and environmental agencies at both national and regional levels with the necessary skills and knowledge.

Awareness in government and society of the value of local carbon resources and how to leverage these assets for economic and environmental benefits is crucial. Policy makers must be adept in crafting and implementing policies that safeguard these resources whilst ensuring equitable benefits. This understanding is critical for creating a conducive environment for investment, ensuring fair and sustainable resource utilisation, and protecting the interests of all parties involved.

Similarly, capacity building within local communities and civil society is vital to ensure the sustainability and acceptance of carbon projects. It is important for communities to understand the potential advantages of carbon markets. By actively involving communities in these projects and equipping people with the necessary skills and information, communities can become empowered participants. This includes training and resource provision, enabling community members to effectively engage with carbon market mechanisms, and understanding their role in these projects and the expected benefits. Community involvement also helps ensure that environmental objectives are aligned with local socio-economic needs, fostering a sense of ownership and optimising prospects for the long-term viability and success of these initiatives. When local communities are informed and involved as stakeholders, the benefits of carbon markets can be felt more deeply and equitably at the grassroots level.

[31] Reuters (2023) *Africa Hopes for Starring Role if Carbon Offsets Market can Overcome Credibility Crisis*

Further Reading:

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Milne, Mary (1999). "Transaction Costs of Forest Carbon Projects", Working Paper CC05. Center for International Forestry Research (CIFOR), Bogor, Indonesia.

Mongabay. (November 2023). Can carbon markets solve Africa's climate finance woes?

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6. Role of Africa Finance Corporation

i. AFC Foundation for Africa-led Global Climate Solutions

For 16 years, the Africa Finance Corporation has worked with our partners to reverse Africa's historic legacy of natural resource wealth, livelihoods and empowerment being exported beyond our continent by adding ever greater value to our raw materials, minerals, and metals. Today, our continent is in jeopardy of repeating history. The value of our forestry, savannas, grasslands, and peatlands is in danger of being absorbed by advanced countries, in the same way as oil, cocoa and copper in the last century.

The evidence of the outsized role played by African natural assets in absorbing the industrialised world's carbon emissions is clear (see section 3). The same financial terms that the world assigns to carbon capture technology, if applied to Africa's uncultivated land preserved as carbon sinks, would be generating tens of billions of dollars.

At the Africa Finance Corporation, we are determined to amend the disparity between Africa's substantial contribution to carbon sequestration and our continent's limited participation in global carbon markets. We have proposed measures to enhance Africa's involvement in these markets in a manner that maximises value retention for the continent. Critically, our African model for carbon offsets must learn from the mistakes made in the global market for carbon credits. This means, for example, enabling multiple on-the-ground domestic verifiers to avoid reliance on a few actors as the sole conduit for market trust. It means ensuring that enlightened host communities and governments receive the lion's share of proceeds from carbon credits. It means projects financed for permanence, with robust mechanisms to ensure that commitment to protect a forest area remains intact even when the initial funding is spent through sustainable livelihoods and sources of energy.

We recognise too that concessional, non-market-based approaches are urgently needed to protect Africa's natural capital resources. In response, we are establishing the AFC Foundation. This foundation is dedicated to the conservation, preservation, and strategic reorientation of Africa's forests, mangroves, and peatlands, guided by four principal objectives:

1. **Halting resource destruction and the uncontrolled foreign sales of Africa's natural capital resources:** Our foundation will strive to prevent the further devastation or unchecked distribution of vital natural resources. We plan to work with partners who share our vision, aiming to enhance the expertise of African policymakers and establish a consensus on implementing "export bans" for natural carbon resources such as forests, mangroves, and peatlands. These bans are intended to restrict the sale of unprocessed natural resources outside the continent, thereby preserving the value within. This approach follows precedents set by African governments, like Gabon and Benin, which have banned exports of raw logs and cotton respectively.
2. **Generating new financing for natural capital conservation:** We aim to mobilise new financial support for conserving Africa's natural capital, including forests, mangroves, and peatlands, by working with international and regional investors who are committed to protecting these essential resources. Lack of investment in conservation, management, and restoration of these natural assets is a significant barrier to addressing their loss.
3. **Supporting continent-wide initiatives and scientific research:** Our foundation is committed to supporting projects focused on conserving and regenerating areas that act as potential carbon sinks. We will also support research and data collection to highlight the carbon sequestration capabilities of key natural assets, aiding in the development of effective protection, expansion, community engagement, and beneficiation strategies.
4. **Building knowledge and awareness:** Working with the AFC's 42 member countries and beyond, we aim to enhance understanding and awareness among policymakers, industry leaders, and communities. Crucially, we advocate for a platform that coordinates all 54 African governments on matters related to their natural capital resources. Such a platform could prevent investors from exploiting differences between countries and ensure fair valuation of their carbon resources.

ii. Developing Bankable and De-risked Carbon Projects

This is the starting point to regenerate, rebuild and conserve our natural assets, and to then create the capacity to deliver significant scalable climate solutions. This is the way to ultimately achieve global appreciation, reflected in value for our natural carbon sinks.

We seek to work in concert with other significant initiatives, including the Africa Carbon Markets Initiative (ACMI), foundations, development institutions, impact investors, family offices and other actors to jointly create high quality, high integrity climate-related projects. We welcome all conversations with governments and institutions, and offer our help and support with education, regulation, policy, and financing.

The Foundation is our starting point to springboard projects into investable assets. With our experience of developing multi-billion-dollar projects across the realms of energy, transportation, and industrialisation, we understand what it takes to build a pipeline of de-risked, bankable climate-related projects.

With our partners, AFC is the biggest investor in renewable energy in Africa, with particular focus on the countries that account for most of the continent's 4% net contribution to global emissions. AFC's joint acquisition last year of Lekela Power incorporated a portfolio of operational wind power projects with a combined installed capacity of over 1 gigawatt (GW), mainly located in South Africa, Egypt, and Senegal. It also includes Lekela's 1.8 GW pipeline of greenfield projects, the majority of which are anticipated to reach financial close soon. AFC is also the lead developer in the first-ever wind farm for Djibouti, advancing the nation's stated ambition to become the first in Africa to rely entirely on renewable sources for electricity.

Among our other activities, the Corporation has led the creation of industrial zones that combine value addition for African natural resources with efficient transportation, energy and infrastructure, resulting in the continent's first certified carbon-neutral industrial zone in Gabon. AFC is also leading the Lobito Corridor, a rail project connecting Africa's east and west coasts described by the US State Department as "the most significant transport infrastructure that the U.S. has helped develop on the African continent in a generation." AFC Capital Partners' Infrastructure Climate Resilient Fund, supported by the Green Climate Fund, is focused on building resilience for our systems and physical infrastructure.

Now, AFC is evolving its pragmatic, investor-oriented approach to scale nature protection and expansion. We will utilise our knowledge, experience, network, and solutions-driven approach to enable bankable projects that optimise value creation for our natural assets. In parallel to our approach to infrastructure and resource projects, AFC will leverage our high investment-grade credit rating to help de-risk investments and crowd in private sector institutions. We will leverage our credibility as a multilateral investment institution with preferred creditor status in our member countries to draw credibility to high quality carbon removal projects.

Africa Finance Corporation

Instrumental Infrastructure.
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