

Policy Paper

VOLUNTARY CARBON MARKETS IN AFRICA: A DEEP DIVE INTO OPPORTUNITIES AND CHALLENGES

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This study conducts an in-depth exploration of the increasing interest in voluntary carbon markets (VCMs) in Africa, shedding light on the potential opportunities and challenges associated with African participation in these markets. VCMs have gained prominence as promising means to address climate change, driven by substantial financial incentives and market expansion. Nonetheless, persistent debates revolve around the legitimacy of carbon credits and their tangible contributions to climate change mitigation and adaptation.

Drawing from secondary data sources, this research undertakes a comprehensive analysis of the theoretical foundations of carbon markets, the historical evolution of VCM initiatives in Africa, and the specific challenges and opportunities that beckon African nations towards more active involvement. Historically, African countries have primarily been passive beneficiaries of VCMs. Therefore, this study aims to provide insights about how African countries can strategically navigate these markets to maximize their potential benefits for sustainable development while contributing meaningfully to climate change mitigation and adaptation endeavors.

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INTRODUCTION

As Africa strides boldly into the 21st century, it finds itself at a critical juncture, where the pursuit of economic development converges with the imperative to grapple with a rapidly changing climate. The African continent is not the primary driver of the global climate crisis, yet it bears a disproportionate burden of its consequences. Increasingly prolonged droughts, erratic rainfall patterns, soaring temperatures, and intensified extreme weather events pose existential threats to food security, water resources, and the livelihoods of countless communities. Coupled with these pressing challenges is the stark reality of insufficient climate finance, limiting the continent's ability to effectively confront the multifaceted climate crisis (Ola-Busari, 2022).

The Paris Agreement adopted in 2015 during COP21 marked a pivotal turning point in the fight against climate change by renewing the commitment of the parties to take action to limit global warming to 2 degrees Celsius, and even 1.5 degrees Celsius¹. Article 6 of the agreement provides the possibility for these parties to engage cooperative efforts around greenhouse gas emission reduction projects and the exchange of carbon credits generated from these projects. In this regard, VCMs have emerged as the flagship solution, as evidenced by the rapid growth of the market in recent years, with even more significant projections for the years ahead (White and Case, 2022).

Significant financial incentives, these types of markets often stir controversy regarding their lack of transparency, credibility and scientific clarity and accuracy linked to carbon offsets and their actual contribution to the fight against climate change (Valiergue et al., 2023). Nevertheless, they still represent an opportunity, especially in the context of climate action and sustainable development financing. However, Africa's position in this market remains relatively understudied. In fact, the continent is typically viewed as a passive beneficiary of projects rather than a full-fledged participant.

As we delve into the intricate landscape of VCMs in Africa, it is imperative to address a series of critical questions that have emerged alongside the recent surge in interest for these markets. How can Africa effectively harness the newfound enthusiasm and investment in VCMs to drive its sustainable development and climate resilience efforts? What specific opportunities do these VCMs represent for the continent, and how can they be maximized? Conversely, what challenges could Africa face in capitalizing on this momentum, and how can these be mitigated or overcome? Therefore, the central problem statement we confront encompasses these essential questions: How can African countries strategically leverage their participation in VCMs to seize opportunities, navigate challenges, and promote its sustainable development?

In summary, this policy paper aims to provide a concise overview of VCMs, highlight relevant initiatives in Africa, and present both the opportunities and challenges these markets present for the continent. The subsequent sections will delve into these aspects in greater detail, offering insights and recommendations to guide Africa's engagement in these markets for climate resilience.

I. UNDERSTANDING VOLUNTARY CARBON MARKETS

Before delving into the complexities of the issue at hand, it is essential to establish a foundational understanding of VCMs. This section will provide an overview of the concept of VCMs, their underlying structures, and their operational mechanisms.

1. White and Case, Article 6 of the Paris Agreement: Opportunities for Africa, <https://www.whitecase.com/insight-our-thinking/africa-focus-winter-2022-article-6-paris-agreement-opportunities-africa>

1.1. Unveiling the concept of VCMs

Voluntary Carbon Markets (VCMs) encompass a distinct segment of the carbon market landscape characterized by voluntary participation, as the name suggests. These markets offer a platform for individuals, organizations, and entities to voluntarily offset their greenhouse gas (GHG) emissions by investing in emission reduction or sequestration projects. Unlike mandatory carbon markets, participation in VCMs is not driven by legal requirements or regulatory mandates (Global Climate Initiatives, 2023).

Instead, entities engage in VCMs willingly, motivated by a variety of factors, including corporate sustainability goals, environmental stewardship, or a desire to mitigate their carbon footprints by investing in environmentally technological innovation in order to align with current and upcoming exports markets environmental regulations (Huang et al., 2022).

VCMs are organized into a primary market and a secondary market. While the primary market involves transactions conducted within a formalized system, the secondary market, also known as OTC (over the counter), refers to transactions conducted outside of these systems, typically through bilateral agreements (Clermont, 2014). VCMs can also take another form. In some cases, participants voluntarily engage in a market and, upon engagement, must adhere to obligations regarding the quantity of emissions to be reduced. This is the case with CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation), a voluntary system for reducing greenhouse gas emissions from international aviation (Milman, 2016). The Japanese Voluntary Emissions Trading Scheme (JVETS) and the Chicago Climate Exchange (CCX) follow a similar approach, imposing obligations on participating companies and penalties for non-compliance (Milman, 2016).

VCMs have witnessed significant growth in recent years, with transaction volumes reaching \$2 billion in 2021, four times the value observed in the previous year. In 2022, the market's value decreased to \$1.3 billion due to the conflict between Russia and Ukraine (South Pole, 2023). Looking ahead, the forecasts are promising. For example, by 2030, the value of VCMs is estimated to range between \$10 billion and \$40 billion (Porsborg-Smith, 2023).

As in any market system, there is a supply and demand dynamic at play in VCMs. On the VCM, the supply is generated by CO₂ reduction or sequestration projects. The types of projects are quite diverse, with some major categories including, but not limited to (Porsborg-Smith, 2023):

- Renewable energy projects ;
- Methane capture and combustion projects;
- Energy efficiency projects ;
- Forestry projects ;
- Direct air capture and storage or utilization (DAC) projects.

Demand on the other hand is driven by organizations, businesses, or individuals, guided by their goals of achieving carbon neutrality (TSVCM, 2021).

The diversity of participants in the VCMs is characterized by the presence of several actors involved upstream (Carbon Credits, 2022), including:

- Project developers: they are involved in the supply side of the market, through the implementation of the aforementioned projects, they generate offset credits which will then sold to customers.
- Buyers: comprising businesses, NGOs, governments, universities, and individuals (involved in the demand side of the market).

- Retailers: they purchase offsets in large quantities to bundle them into portfolios and sell them to end buyers, usually for a fee (involved in VCMs as intermediaries).
- Brokers: they earn commissions by purchasing credits from traders, with the aim of reselling them to consumers (involved in VCMs as intermediaries).
- Verifiers: generally from organizations, they are responsible for verifying project compliance with predefined objectives.

The supply generated through these projects is subject to certain controversies, given the increasing demand. Some researchers question the ability of the supply to meet the future demand in the market (Gros, 2022). This concern is echoed by Raeside (2022), who states, *'From our perspective, the infrastructure within today's VCM hasn't necessarily been built and designed to keep pace with growing demand.'* These concerns become even more alarming in light of demand projections, expected to increase 25-fold from 2021 levels by 2050 (McKinsey, 2022). This is a pressing issue because meeting the future demand will require projects to be accelerated at unprecedented rates. On the other hand, we have the demand, driven by organizations, businesses, or individuals, guided by their goals of achieving carbon neutrality (TSVCM, 2021).

1.2. Carbon credits: a currency for carbon neutrality

Central elements of carbon markets, carbon credits or negotiable permits, are used in regulated contexts. These credits are typically allocated by regulators (governments or regulatory bodies) and act as a form of documentation or certificate authorizing the holder to emit one ton of CO₂ (Investopedia, 2022).

In contrast, VCMs are not subject to regulatory systems, and the credits exchanged represent one ton of CO₂ reduced or sequestered through carbon offset projects (Ecosystem Marketplace, 2012). These credits in voluntary markets are commonly referred to as offsets or carbon offset credits. It's important to note that offsets are distinct from carbon credits. Unlike carbon credits, offsets are not created or distributed by a regulatory authority. Furthermore, while carbon credits represent a unit of measurement to cap emissions (allocated permits), offsets can be considered a unit of measurement for compensating the greenhouse gas emissions of participants who wish to voluntarily reduce them (Cooperate Finance Institute, 2023). Offsets are primarily used within the context of VCMs and are not tradable on regulated markets, except in certain cases where systems allow their use. For example, the California-Quebec market allows the use of offsets up to 8% of participants' respective obligations (ICAP, 2023).

The mechanism for granting carbon offsets within VCMs unfolds in several stages, summarized as follows (INFCC, 2022) :

Stage 1: Project development

As previously mentioned, these projects can involve improving energy efficiency, renewable energy production, or forest conservation.

Stage 2: Evaluation and validation

Submitted projects are assessed by an independent organization to ensure their compliance with established objectives and criteria. These rigorous criteria serve to guarantee not only the eligibility

of the projects but also their effectiveness in reducing greenhouse gas emissions (Guirauden, 2022). These criteria include:

- **Additionality:** This criterion is subdivided into sub-criteria, including climate additionality (ensuring that the project avoids CO₂ emissions based on an initial situation), financial additionality (projects must demonstrate that without the financing from the sale of credits, the project cannot be implemented), and regulatory additionality (project activities can go beyond the country's regulations) (INFCC, 2022).
- **Permanence:** Projects must be sustainable in the long term and ensure a permanent reduction in greenhouse gas emissions.
- **Measurability:** The quantity of CO₂ avoided or sequestered must be quantified based on a recognized methodology.
- **Verifiability:** The aforementioned accounting must be conducted annually to ensure its ongoing effectiveness. This verification must be performed by an independent and competent third party.
- **Transparency:** Information regarding the projects and associated carbon credits must be easily accessible and reliable. These projects must undergo audits by an independent auditor.
- **Accountability:** Stakeholders must be accountable for their impact on the climate and must adhere to human rights and environmental standards.
- **Uniqueness:** Credits must be recorded on a single registry to prevent double counting.

Stage 3: Offsets issuance

Every voluntary system maintains a national or international registry system. The creation of a carbon offset credit unit depends on its registration in this dedicated registry. This brings us to the next stage of the process.

Stage 4: Offsets utilization

They can be sold to either businesses, individuals, or communities, in which case the credits will be retired from the account. Alternatively, they can be sold to an intermediary or a carbon offset operator, in which case the credits are transferred to another account.

II. THE EVOLVING LANDSCAPE OF VOLUNTARY CARBON MARKETS IN AFRICA

2.1. Africa's early steps in VCMs

Very limited data is available regarding Africa's early foray into the voluntary carbon offset arena. However, some elements remain exploitable and allow us to understand that the initial initiatives

primarily revolved around forest conservation projects under the REDD+² and USAID³ programs.

One of the earliest projects was the Kasigau Forest Conservation Project in Kenya. It was, in fact, the first carbon offset project in East Africa with the objective of marketing credits in the VCM (Chenevoy, 2014). Launched in 1998 by Wildlife Works⁴, its aim was to protect the Kasigau Forest from deforestation caused by extensive wildfires over the years. Additionally, the economic development of the region and the well-being of the surrounding communities were also a priority. This marked the first REDD+ project, not only in Africa but in the world, to be VCS certified in (Stand For Trees, 2017) (Wildlife Works, 2023).

The success of this project paved the way for similar initiatives in Kenya, including the Blue Carbon project known as Mikoko Pamoja. Launched in southern Kenya, the project involved selling carbon credits from mangrove preservation, in exchange for 3,000 tons of CO₂ equivalent per year in the VCM. It became the world's first community-based project to successfully trade mangrove-derived carbon credits (DeSantis, 2021). The benefits are reinvested in the community to improve access to clean drinking water for 3,500 community members, providing educational materials to 700 schoolchildren and safeguarding 117 hectares of mangrove forest. Ecotourism is also a source of income for this initiative, which has been replicated in other regions of Kenya and in other countries (DeSantis, 2021).

In 2009, an ambitious mangrove restoration project was launched in Senegal with the participation of over 100,000 villagers. Over the course of three years, they planted 80 million mangroves between the estuaries of Casamance and Siné Saloum. This project is the world's largest mangrove restoration program and was funded by private companies to offset a portion of their CO₂ emissions and improve the livelihoods of local communities. The project had a significant environmental impact, sequestering over 160,000 tonnes of CO₂ and increasing fish stocks by more than 4,200 tonnes per year (DeSantis, 2021). The social benefits for villagers were also numerous, including improved food security and increased income from larger fish catches.

The success of this project lies in the fact that villagers were the primary actors in the preservation and sustainable use of their natural resources. In fact, 95% of villagers believe that mangroves have had at least one positive impact on their lives (DeSantis, 2021). Fishermen now have larger catches, improving food security and increasing income, and over 70% of villages have established monitoring of their mangroves to protect their forests from illegal exploitation. This project is a successful example of combining ecological restoration, carbon offsetting, and the well-being of local communities.

In 2011, the Kenyan renewable energy company Climate Pal established the African Carbon Exchange (ACX), a first of its kind in Africa (Gachenge, 2011). As the first carbon exchange platform in Africa, ACX aimed to unlock the carbon credit trade on the continent, benefit small-scale projects, and provide a source of funding for sustainable development projects in the region. ACX offered carbon credit holders easier access to global markets because recent experiences had shown that transaction costs were not favorable for African actors, further motivating the creation of this platform (Gachenge, 2011). The latest available information on this platform dates back to 2014, and since then, there has been no reported update, leaving a gap in knowledge about any developments of this platform post-2014.

2. REDD+ (Reducing Emissions from Deforestation and forest Degradation) is a climate change mitigation and adaptation solution developed by the parties to the UNFCCC.

3. USAID (United States Agency for International Development).

4. Wildlife Works est le leader mondial du développement et de la gestion de programmes REDD+ avec une approche efficace pour appliquer des solutions innovantes basées sur le marché à la conservation de la biodiversité (Wildlife Works, 2023).

The African Carbon Credit Exchange (ACCE) which was a similar platform, has been created in Zambia with the support of USAID, with the belief that rural populations could benefit more from carbon finance and should therefore be educated on the subject. In the 2010s, these two exchanges platforms primarily facilitated the marketing of offset credits generated in Africa through the Clean Development Mechanism (CDM), REDD projects, and other voluntary offset credits (Kuti, 2016). Despite their potential significance, scant information is available on the operations and current status of these platforms. This lack of transparency raises questions about the continuity and impact of these initiatives, leaving a void in our understanding of the developments and outcomes since their establishment in the 2010s.

An Ecosystem Marketplace report on the status of VCMs in Africa between 2007 and 2014 showed that the development of voluntary projects in Africa was less significant than in other regions of the world. Through projects mainly in the areas of combating deforestation or implementing energy-efficient stoves, voluntary buyers acquired offsets worth \$253 million in Africa. This figure is comparatively low when compared to credits issued in Latin America or Asia, which have values twice as high as those on the African continent (Ecosystem Marketplace, 2015).

Despite these figures, a few countries still stood out with significant transactions. This was the case for Kenya, where transactions accounted for half of the transactions observed across the entire continent.

The 2015 Paris Agreement implicitly reminded the various parties that VCMs could serve as sources of funding for climate change mitigation (VCMi, 2021).

Most countries' Nationally Determined Contributions (NDCs) gradually incorporated the option of carbon credits, although these were more associated with credits under the Clean Development Mechanism (CDM), of which Ethiopia serves as an example. In fact, after the construction of the tramway project in Addis Ababa, the Ethiopian government decided to calculate the avoided emissions, estimated at approximately 55.9 million tons of CO₂ equivalent, in order to convert them into carbon credits through the CDM (Novethic, 2016). Another illustrative example in line with this trend is the Ouarzazate I Concentrated Solar Power project in Morocco also registered under the CDM (UNFCCC, 2012). Considered as the most important clean energy project in Africa back in 2012, it became few years later, after 3 development phases, the world's largest concentrated power farm⁵, offsetting around 240 000t of CO₂ emissions a year (Power Technology, 2020).

During the same year, West Africa recorded the first intra-African transaction of compensatory carbon credits (UN Climate Change, 2015). The carbon finance group, Ecosur Africa, generated these credits through the Soutra Fourneau program, a project aimed at distributing energy-efficient stoves in Côte d'Ivoire, financed and operated by Ecosur. The use of these stoves helped reduce the use of coal and wood, thus lowering greenhouse gas emissions. The generated credits were sold to Volta Cars Rental Services, an automobile leasing company looking to offset emissions for its clients in Ghana, Senegal, and Côte d'Ivoire (Pombo-Van Zyl, 2015).

Meanwhile in South Africa, the country had planned to implement a carbon tax since 2016, and discussions regarding this tax had been on the table for a while, contributing to a renewed interest in purchasing offsets in the region (Eltson, 2021). In fact, when it was eventually implemented (beginning in 2019), the tax was intended to cover between 1000 and 1500 companies, representing 75% of the country's greenhouse gas emissions. The option to acquire offsets was allowed up to 5 to 10% of emissions for each company (Eltson, 2021). In other words, companies could use offsets

5. CNN, Morocco's megawatt solar plant powers up, 2018
<https://edition.cnn.com/2016/02/08/africa/ouarazate-morocco-solar-plant/index.html>

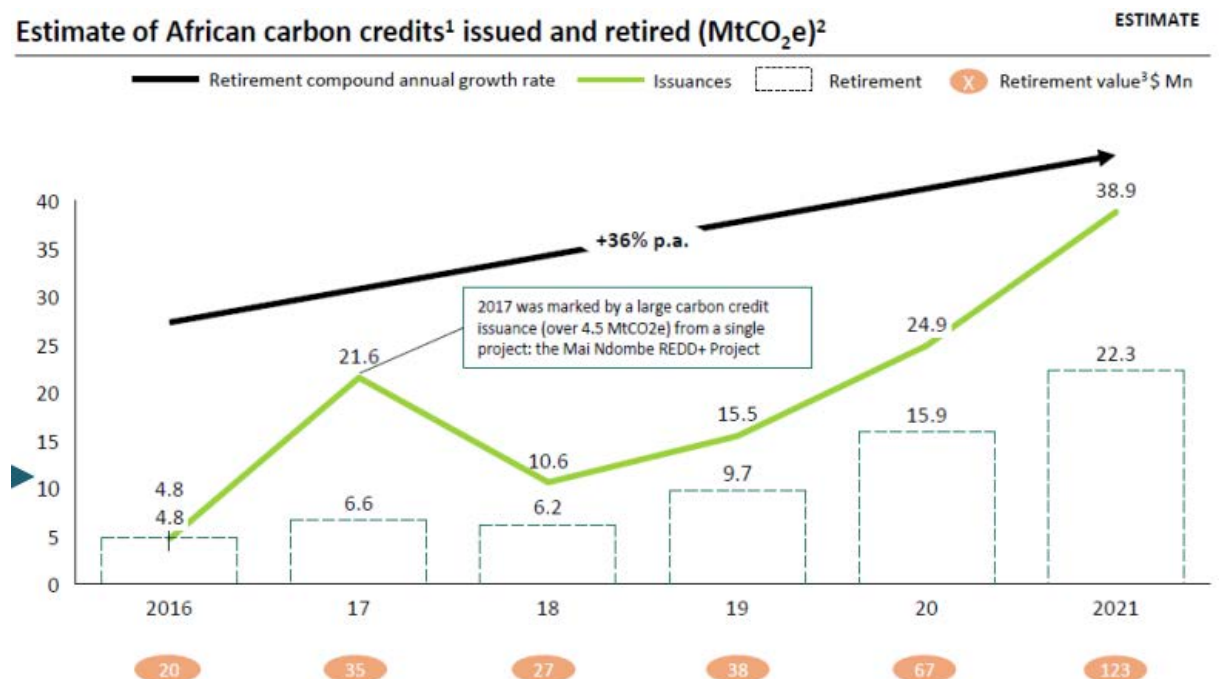
to compensate for a portion of their taxable polluting emissions, reducing their tax burden while investing in sectors not directly subject to the carbon tax. This measure revitalized the carbon market in South Africa, with demand estimated to be three times the available supply in October 2020 (Eltson, 2021).

That year, nearly 3 million credits were exchanged; however, these were historic credits purchased years earlier by brokers and European entities that had not been used within the EU ETS framework. Estimates in Eltson's article (2021) suggested new projects in South Africa during the second phase of carbon taxation in 2023, contributing new VCMs developments in the country. Moreover, the country planned to broaden the scope of the market by considering projects outside the country to meet the expected growing demand.

The most recent data from late 2021 demonstrates that the average annual growth rate of VCMs in Africa is slightly higher than the global markets, namely 36% (Figure 1) versus 31% (Africa Carbon Markets Initiative, 2022) (although the base on which this rate is estimated should be taken into account). The Africa Carbon Markets Initiative (ACMI) report also mentions a gap between activity levels and the theoretical potential for offset emissions. This is the case for Madagascar, Angola, Nigeria, Sudan, and Tanzania. At the same time, five countries alone account for 65% of credits issued in the last five years: Kenya, Zimbabwe, the DRC, Ethiopia, and Uganda.

Figure 1

Estimate of African carbon credits issued and retired



Source: Were, Voluntary Carbon Markets in Africa, 2022

In recent years, Africa has shown a growing and increasingly proactive interest in VCMs. This shift in approach signifies that Africa is beginning to contemplate a more proactive engagement in VCMs.

2.2. Africa's growing interest in VCMs

During the recent years, we have witnessed a burgeoning interest among African nations in the realm of VCMs. One notable example of this evolving stance comes from Gabon, which has made in 2022 significant strides towards entering the carbon credit trade, capitalizing on the opportunities presented by the 90% forest cover that blankets its territory (Harter, 2021). Gabon is taking proactive steps to encourage its population and political leaders to consider forest protection. Notably, during the 'One Forest Summit' in Libreville, Gabon's issuance of over 90 million carbon credits for forest conservation was a focal point of discussion.

Furthermore, during COP27, Africa witnessed a pivotal moment in its journey within the VCMs, marked by the establishment of the Africa Carbon Markets Initiative (ACMI). Its primary goal? Significantly expand Africa's participation in VCMs (Climate Champions, 2022). By highlighting the key risks Africa faces due to climate change, ACMI seeks to provide a solution to unlock financing for improved access to energy, climate action, and development that could prevent the continent from descending into crisis.

In this endeavor, ACMI aims to establish a thriving VCM in Africa, with the objective of producing 300 million carbon credits, generating \$6 billion in revenue, and creating 30 million jobs by 2030, ensuring substantial income for local communities. Importantly, this initiative is one of the first of its kind on the continent in the realm of VCMs and fundamentally stems from the strong political will of states such as Nigeria and Kenya.

After COP27 and the launch of ACMI, more countries have joined the race for carbon offset credits. We have witnessed a growing number of concession agreements, such as in Liberia, where an exclusive rights agreement was granted to Blue Carbon LLC for approximately 10% of its territory for exploitation to generate carbon credits⁶. Similarly, Zambia has entered into an agreement with two Chinese companies, allocating 5% of its territory for similar purposes. Furthermore, in early 2023, Blue Carbon LLC signed an even larger contract with Tanzania, encompassing extensive land areas. Each of these projects aims to generate millions of carbon credits through various initiatives, including deforestation prevention, reforestation, and large-scale industrial planting.

Furthermore, Africa has witnessed a significant increase in investments aimed at bolstering its VCMs. A prime example of this trend can be found in Tanzania, where more than 20 companies from various countries, including the United States, Canada, Switzerland, Russia, Italy, Singapore, Estonia, the UAE, and Kenya, have pledged over \$20 billion towards carbon offset credits⁷. These investments are not only geared towards helping the country meet its national climate goals but also play a vital role in preserving its forested areas.

More recently during the Africa Climate Summit, the UAE Carbon Alliance has committed to acquiring \$450 million worth of African carbon credits by 2030 with the aim to connect the robust supply of high-integrity African carbon credits with the increasing demand in the Middle East.

However, Middle Eastern companies are not the only entities involved in these investments. The USA, through USAID, also announced a series of investments to support African leadership during

6. Monde, Liberia set to concede 10% of its territory to Emirati company for carbon credit production, August 2023, https://www.lemonde.fr/en/le-mondeafrica/article/2023/08/02/liberia-set-to-concede-10-of-its-territory-to-emirati-company-for-carbon-credit-production_6077402_124.html

7. DGB Group, Tanzania attracts \$20 billion investment in carbon offset credits, July 2023, <https://www.green.earth/news/tanzania-attracts-20-billioninvestment-in-carbon-offsetcredits#:~:text=Tanzania's%20substantial%20investment%20in%20carbon,conservation%20efforts%20and%20community%20develop>

the same summit, including \$1.4 million to assist the Kenyan government in developing its carbon market activation plan and its regulatory and legal framework related to carbon, ensuring market integrity, transparency, and fairness⁸.

The resurgence of interest in VCMs among African countries stems from a critical assessment. Access to financing for climate mitigation and adaptation remains a significant challenge, especially considering the delayed fulfillment of international commitments (Ola-Busari, 2022). Developed countries pledged at COP15 in 2009 to provide \$100 billion annually to support climate action in developing countries by 2020. However, this target was not met by 2020 and has been postponed to 2025 (UNDP, 2022). The financing needs are substantial, despite the efforts of the countries concerned and the objectives outlined in their NDCs. African countries will need to mobilize approximately \$6 trillion by 2030 to hope to cover even half of their goals (UNDP, 2022). These countries, often heavily indebted, face significant constraints when it comes to allocating substantial financial resources to address climate-related challenges. This predicament becomes even more challenging when developed nations, largely responsible for historical greenhouse gas emissions, fall short in meeting their climate commitments and providing adequate support to those most affected.

To counter this issue, African countries progressively engage with in new projects such as in Morocco, where we witnessed small advancements, notably with the sustainable agriculture project of the OCP Group and the American Start-up Regrow. The project aims to explore soil sequestration potential to enhance fertility, consequently improving access to MRV (Measurement, Reporting, and Verification) by enabling African farmers to utilize a more efficient and competitive MRV system than the conventional one. This approach not only helps in improving soil quality but also allows farmers to benefit from potential income generated through carbon credits. These types of initiatives are a direct response to the pressing issue of climate finance scarcity, the race for climate leadership, and the quest for innovative pathways to ensure sustainable development.

During the 28th United Nations Climate Change Conference (COP28) held in the United Arab Emirates, the field of climate finance gained significant importance, with around 700 million dollars of pledges made by developed countries. It's important to note that despite the fact that it's considered as a huge step, it only covers 0.2% of the climate finance needs (The Gardian, 2023). Negotiations on Article 6 of the Paris Agreement were a focal point, though the outcomes were not particularly conclusive (Ecosystem Marketplace, 2023). This, in itself, could be advantageous for VCMs developments, as it allows them to continue operating without burdensome and counterproductive corresponding adjustments. All of these developments have contributed to placing VCMs at the center of some discussions, especially among parties from Africa.

As a result, Rwanda launched its National Carbon Market Framework during this conference (Rwanda Environment Management Authority, 2023). In addition, less commonly noted, countries like Côte d'Ivoire have displayed a heightened interest in these markets through active participation in the West African Alliance on Carbon Markets and Climate Finance. Notably, there are emerging proposals to establish a West African carbon market hub, signifying a growing regional commitment to addressing climate challenges through innovative market-based solutions (ALLCOT, 2023).

8. US Department of State, L'USAID annonce 35 millions de dollars en faveur du leadership climatique africain, September 2023, <https://www.state.gov/translations/french/lusaid-annonce-35-millions-de-dollars-en-faveur-du-leadership-climatique-africain/>

III. BETWEEN OPPORTUNITIES AND CHALLENGES : HOW COULD AFRICA BENEFIT FROM VCMS ?

3.1 Opportunities

Favorable demand projections for carbon offset credits

With an increasing number of companies and countries committing to ambitious net-zero emission targets, the world is witnessing a growing enthusiasm for sustainability and environmental responsibility. This paradigm shift is not only driven by a moral imperative to combat climate change but also by economic incentives and market dynamics (Harris, 2007). Companies across various industries are recognizing the value of sustainability as a key differentiator in a competitive market. Consumers, investors, and stakeholders are increasingly demanding transparency and accountability in environmental practices. As a result, businesses are actively seeking opportunities to reduce their carbon footprint and demonstrate their commitment to environmental stewardship (Jixun Liu et al., 2024).

Moreover, the surge in climate-conscious policies and regulations, coupled with the momentum generated by international climate agreements such as the Paris Agreement, is pushing countries to take bold steps towards decarbonization. Governments are aligning their policies with climate goals and encouraging industries to adopt cleaner technologies and sustainable practices (Ernst & Young, 2022).

This shift towards sustainability extends to the burgeoning carbon offset market. Carbon offset credits, once a niche concept, are now in high demand. Looking ahead, projections suggest that by 2050, the demand for carbon offset credits will surge to a staggering 25 times its current value (Visual Capitalist, 2023). This unprecedented growth signifies not only the commitment to carbon neutrality but also the substantial economic and social opportunities tied to sustainable initiatives. In this context, Africa, with its vast potential for carbon offset projects, stands at the forefront of this transformative movement. The continent's wealth of natural resources, expansive forests, and renewable energy potential positions it as a critical player in the global carbon offset market.

Leveraging Africa's natural assets

Africa accounts for approximately one-sixth of the world's remaining forests (Mo Ibrahim, 2022), making up significant carbon sequestration reservoirs. These forests have the capacity to absorb 1.1 to 1.5 billion tons of CO₂ annually, yet deforestation continues unabated. The Congo Basin forest, the second-largest forest after the Amazon, lost approximately 165,000 km² of forest between 2000 and 2014. According to estimates cited in the Mo Ibrahim Foundation report, at current deforestation rates, Africa will have lost all its primary forests by 2100.

In order to maximize nature's contribution to combating climate change, the implementation of conservation projects is essential. Protecting these forests, in addition to carbon storage, could also benefit local populations (The Nature Conservancy, 2022), not to mention the opportunities related to land use.

The renewable energy sector is even more significant to consider. Eighteen of the 30 countries with the best solar energy potential are in Africa (Ola-Busari, 2022), opening up possibilities for implementing renewable energy projects that can enhance energy capacity and contribute to the continent's economic and sustainable development.

For instance, Morocco, with its Noor solar energy complex established within the CDM (UNFCCC, 2012), stands as a prime example of the immense potential African countries hold in this regard. The Noor site, located in the Sahara Desert, is one of the largest concentrated solar power plants globally, boasting a total capacity of 580 megawatts⁹. This highlights the economic benefits it can bring. Leveraging the country's abundant solar resources has not only increased its energy capacity but also reduced its dependence on fossil fuels, resulting in a significant reduction in greenhouse gas emissions (The World Bank, 2016).

Other African countries such as Egypt and South Africa, exhibit substantial potential for renewable energy projects. Egypt, with its extensive wind resources in the Gulf of Suez, has the capacity to develop significant wind energy projects (Energy Capital & Power, 2023). Similarly, South Africa's favorable wind and solar conditions offer great potential for expanding its renewable energy capacity (GC Solar, 2023).

Moreover, the Sahel region, spanning across multiple countries in Africa, also holds significant renewable energy potential, particularly in solar and wind resources. This vast region, which includes countries like Mali, Niger, Chad, Sudan, and Mauritania, receives abundant sunlight throughout the year, making it conducive to solar energy projects¹⁰.

Employment opportunities

VCMs projects across Africa hold immense potential as drivers of local job creation. These initiatives, spanning various sectors, offer a unique opportunity to address unemployment challenges while contributing to the continent's sustainable development goals. VCM projects encompass a broad spectrum of activities, from reforestation and renewable energy installations to carbon credit trading and project management, creating diverse employment opportunities within local communities. Empowering these communities goes beyond financial gains; it includes skill development, capacity building, and the establishment of sustainable livelihoods. Furthermore, the long-term nature of VCM projects ensures sustained local employment opportunities, contributing to economic stability. These initiatives promote a holistic approach by addressing environmental challenges while generating economic benefits, actively engaging local communities in preserving ecosystems and reducing carbon emissions. Africa's rich natural resources, expansive forests, and renewable energy potential position it as an ideal candidate for VCM initiatives, unlocking its potential to become a global leader in the carbon offset market. (need references for this paragraph).

Meeting NDCs Objectives and fostering social acceptability

African nations, in alignment with international climate agreements, have set forth ambitious targets within their NDCs. VCMs emerge as a versatile tool empowering these nations to make substantive strides toward global emissions reductions and carbon neutrality objectives detailed in their NDCs (London School of Economics, 2023). In parallel, these markets hold the potential to facilitate a crucial dialogue that enhances social acceptance of climate change and highlights the manifold opportunities associated with climate action among African citizens.

Attracting investment

Another compelling aspect of VCMs in Africa is their potential to attract green investments. As

9. ESFC (2022). Noor Ouarzazate: the world's largest concentrated solar power plant built in Morocco, <https://esfccompany.com/en/articles/solarenergy/noor-ouarzazate-the-world-s-largest-concentrated-solar-power-plant-csp-built-in-morocco/>

10. UNOWAS, Harnessing renewable energy for development in the Sahel, 2018, https://unowas.unmissions.org/sites/default/files/renewable_energy_-_sahel_-_visionary_note_small_.pdf

African nations align their climate goals with sustainable development objectives, they become more appealing to environmentally conscious investors. These investments not only stimulate economic growth but also help countries meet the requirements of green investors who are increasingly seeking opportunities that contribute to a low-carbon, sustainable future. This alignment of interests can create a win-win scenario, benefitting both African nations and investors committed to green and socially responsible initiatives (World Economic Forum, 2023).

However, despite this potential and the significant opportunities that VCMs offer to Africa, their adoption and implementation are not without challenges. The development of VCMs in Africa, therefore, faces numerous challenges that countries encounter in their endeavors.

3.2 Is Africa ready to embrace VCMs?

While VCMs represent innovative financial tools with significant promise and potential benefits for the continent, it is essential to examine whether Africa is equipped to effectively adopt and integrate them into its economic landscape. Despite the opportunities they bring, the adoption of VCMs in Africa presents a set of intricate challenges that demand careful consideration.

Corruption and integrity concerns

The primary hindrance to the development of these markets in Africa is the lack of credibility and trust surrounding offsets originating from Africa. Indeed, the reputation and quality of credits play a significant role in the VCM (Filmanovic, 2022). These voluntary systems are highly susceptible to corruption (Wolcott, 2022), with high corruption rates known in several countries on the continent. This is the case in Congo, Nigeria, and Cameroon, for example, where the corruption perception index is very low (CCILCI, 2022).

Moreover, VCMs can potentially fuel corruption channels in situations of weak governance (Wolcott, 2022). Buyers may be inclined to purchase these credits at the lowest possible price due to the lack of trust in the project environment. There is also a lack of organization in these markets, which require more oversight in terms of credit quality and transparency regarding the estimation of truly reduced or sequestered emissions (Ernst & Young, 2021).

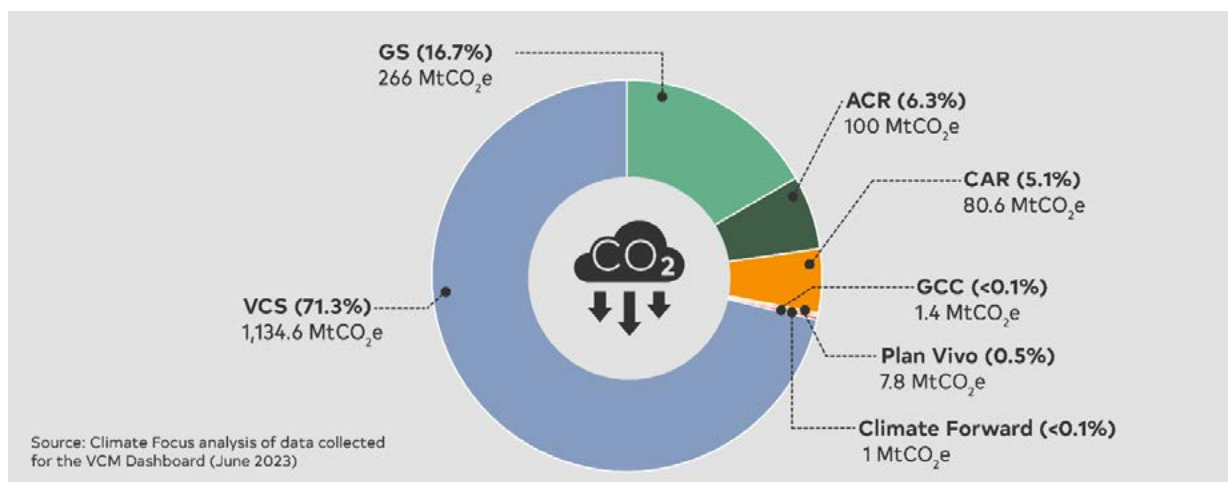
In order to ensure the reliability of created offset credits and their compliance with high-quality standards, African project proponents must rely on international, regional, or national standards. Among all, these are the most commonly used:

- **ISO 14064 Standard:** this standard provides a methodological framework for stakeholders looking to enhance the credibility of their voluntary offset projects.
- **Plan Vivo:** it provides guidelines for the oversight of agro-forestry projects.
- **GHG Protocol:** is an international standard for corporate accounting and reporting emissions, categorizing GHG into scope 1, 2 & 3. (World Resources Institute, 2023)
- **Bilan Carbone:** is generally considered as the French equivalent of the GHG Protocol, as it has also been developed for accounting purposes (Bernoville, 2023).
- **BEGES Protocol:** is considered as a mandatory and simplified version of the Bilan Carbone (Dumont, 2023).
- **The Gold Standard:** Initiated in 2003 by the organization of the same name, this label ensures that projects have a significant environmental and social impact.

- **The Verified Carbon Standard (VCS):** Under the auspices of Verra, this program is the largest issuer of carbon credits (Figure 1) (Climate Focus, 2020). The credits obtained are called Verified Carbon Units, and beyond their use in voluntary markets, they can also be used in regulated frameworks where permitted by the system (Peterson Control Union, 2023).
- Other well-known labels are used at the regional level, including the **Climate Action Reserve** and the **American Carbon Registry** (EcoCart, 2021).

Figure 2

Share of credits issued in the VCMs by leading carbon standards



Source: Climate Focus, Le b-a ba du marché volontaire de carbone, 2023

Carbon colonialism

The thirst for profit is a real obstacle, not only in Africa but also among buyers in the global north. «The control of the environment through the acquisition of cheap land by Western companies aiming to generate compensatory carbon credits in the forestry sector, which they could then resell at a substantial profit,» states Eisein (2021). This practice, likened to what some experts call carbon colonialism, poses a threat not only to VCMs but also to the perception of local populations regarding this system (Lyons, 2014).

Intermediation

Intermediation is also a noteworthy obstacle to consider, as some participants are not directly involved in transactions or simply lack access to well-defined mechanisms to do so. As Zaouati (2023) states:

«Today, there are financial needs on one side, potential investors on the other, and in between, a market that struggles to organize itself to connect buyers and sellers.»

Intermediaries play a significant role in Africa due to their relational capital, responsible for bringing African credits to international markets and sometimes claiming a substantial share of the created value (Africa Carbon Markets Initiative, 2022).

An article in the Financial Times (2022) highlights the opacity in carbon markets and, in the process,

the questionable practices of these brokers acting as bridges between project developers and credit buyers (Climate Trade, 2022). In this article, the author emphasizes the lack of information about the percentages taken by brokers and their reluctance to disclose such information. The fees charged by these intermediaries (most of whom are international players) can amount to as much as 70% of the value of a credit, resulting in reduced funding for Africa and decreased income for local communities involved in voluntary offset projects (Africa Carbon Markets Initiative, 2022).

Adam (2022), the head of the climate division at the United Nations Economic Commission for Africa, also states:

«Carbon offsets provide an opportunity for Africa to tap into the value of its natural assets... But the relatively low cost of carbon and limited capacity in African financial markets, however, have remained barriers to this becoming a meaningful financing opportunity.» (The Journal Record, 2022).

Non-incentivizing prices

A critical challenge revolves around the inadequacy of prices to incentivize participation, as evidenced by the experiences of farmers around the world. Drawing parallels with studies on U.S. farmers, the financial feasibility of engaging in carbon markets hinges significantly on the valuation of carbon credits. If these valuations fall short of covering the considerable expenses associated with adopting environmentally sound agricultural practices – such as procuring cover-crop seeds and hiring specialized labor – it acts as a disincentive for farmers (Lokuge et al., 2022). Extending this challenge to Africa intensifies its significance. Without addressing the mismatch between costs and offered carbon credit prices, African VCMs actors are likely to hesitate in active involvement.

Dependency on international demand

The demand for carbon offsets credits in Africa is relatively low compared to other regions of the world where companies are subject to more climate regulations or emissions restrictions, as it is the case in Europe. Except for South Africa, where a carbon tax serves as a climate policy instrument, most major buyers are international organizations (Africa Carbon Markets Initiative, 2022). Consequently, if Africa wants to sell its offset credits, it will likely depend on international demand. To overcome this obstacle, it would be necessary, first and foremost, to ensure expertise for project verification and validation to guarantee not only better credit credibility but also greater market transparency. Secondly, efforts should be concentrated on disseminating information to local communities, enabling them to be better equipped in terms of transaction costs and peer-to-peer exchange processes. In summary, beyond raising greater awareness of the opportunities and challenges that may result from VCMs, these markets should be better formalized and structured so that exchanges can be smoother and benefit potential participants who may be hesitant to engage given all the aforementioned factors (Meldelsohn et al., 2021).

Potential geopolitical issues

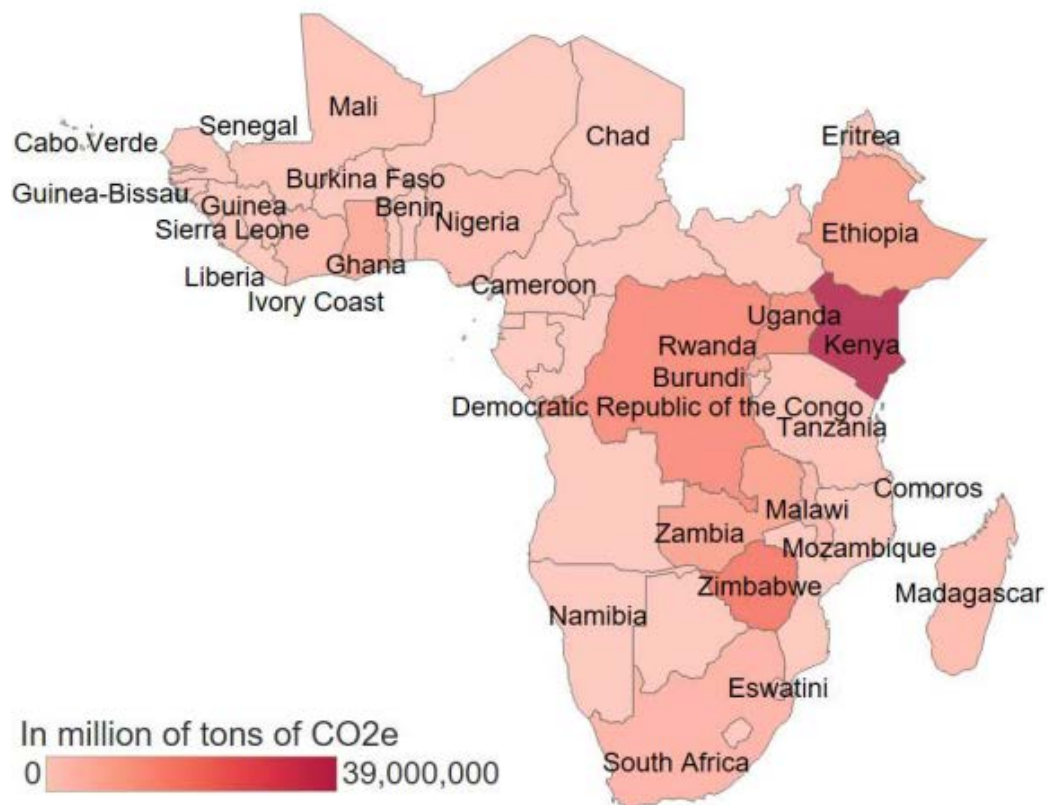
In a global context marked by geopolitical rivalries, increased competition, budgetary constraints, and divergent political priorities, achieving consensus on climate-related issues is becoming increasingly challenging. The climate crisis, which affects all countries, underscores the need for multilateral cooperation to coordinate climate action. However, instead of strengthening collaboration, many actors could exacerbate divisions. It is, therefore, prudent to consider this aspect when analyzing the obstacles to the development of VCMs on the African continent.

An examination of the African Carbon Markets Initiative (ACMI), established during COP27 in Sharm

el-Sheikh, sheds light on the current dynamics. At this stage, we observe strong engagement from East African countries (Figure 3), with Kenya taking the lead, as well as the participation of some countries like Gabon, Nigeria, and Togo. Other subregions, relatively less engaged, express limited interest.

Figure 3

Cumulative carbon offsets credits (2010-2021)



Source: Belianska et al., *Climate change and select financial instruments: an overview of opportunities and challenges for Sub-Saharan Africa*, 2022

For instance, in Central Africa, there is a cautious approach, and the VCM is being promoted as a financing tool for preserving the Congo Basin during the Three Basins Summit (The Three Basin Summit, 2023). In the Maghreb, Egypt has established its VCM in the margins of COP27. Morocco, on the other hand, is committed to carbon neutrality, as exemplified by major entities such as the OCP Group, which initiated its first carbon credit cultivation and certification project, albeit not in Africa but in Brazil in 2022 (La vie éco, 2022).

Notably, the African approach lacks unity, with actions taken at the national or subregional level rather than creating a unified common market. The role of linguistic proximity cannot be underestimated either. Countries and companies sharing the same language are more inclined to collaborate on large-scale projects, which could explain the clustering of specific countries around VCMs.

Divergences in interests and geopolitical stances between African countries and between these countries and international donors could also limit their participation in VCMs. These geopolitical issues may hinder regional cooperation and the unified and effective implementation of these mechanisms across the African continent.

In the realm of international relations, divergent interests are commonplace. However, when it comes to developing projects that must endure and provide Africa with the means to protect itself against the increasingly devastating impacts of the climate crisis, concerted efforts to overcome these divergences are crucial. Thus, it is crucial to adopt a more inclusive approach. This could be done by involving countries in the less-engaged regions through targeted capacity-building efforts, technical assistance and knowledge-sharing programs. The ACMI should also consider working towards promoting greater unity and collaboration among regions in advancing VCMs across the African continent, thereby preventing any geopolitical rivalries and ensuring coordinated efforts towards financing adaptation to a changing climate.

CONCLUSION

In conclusion, VCMs in Africa offer a promising solution in the pursuit of climate action and sustainable development on the continent. However, they come with a set of multifaceted challenges that necessitate astute navigation. The immense potential lies in the prospects of job creation, electrification, meeting NDC objectives, attracting investments, and fostering climate action acceptability.

Africa's abundant natural resources and renewable energy capacity position it as a pivotal player in the global carbon offset market. Yet, the path forward is fraught with hurdles. Governance complexities, integrity concerns, carbon colonialism, and the potential for geopolitical tensions require deft handling.

To turn these opportunities into reality, a unified approach would be desirable. Harmonization of VCM strategies among African nations, bolstered by well-defined governance frameworks and standardized methodologies could help move this agenda in that unified approach. Establishing more carbon mitigation instruments could help incentivize private sector involvement and investment in VCM projects. Moreover, building local expertise and knowledge in broad carbon markets and other mitigation strategies is essential for efficient execution and management of VCM initiatives.

Despite the challenges, the immense potential rewards of embracing VCMs offer a unique opportunity for Africa to contribute substantively to global climate objectives while advancing its own developmental, improving environmental quality and resilience agendas. The path ahead is intricate, but through a concerted and unified approach, African nations can unlock the transformative potential of VCMs, thereby securing a brighter and more sustainable future for the continent and beyond.

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About Policy Center for the New South

The Policy Center for the New South (PCNS) is a Moroccan think tank aiming to contribute to the improvement of economic and social public policies that challenge Morocco and the rest of Africa as integral parts of the global South.

The PCNS pleads for an open, accountable and enterprising "new South" that defines its own narratives and mental maps around the Mediterranean and South Atlantic basins, as part of a forward-looking relationship with the rest of the world. Through its analytical endeavours, the think tank aims to support the development of public policies in Africa and to give the floor to experts from the South. This stance is focused on dialogue and partnership, and aims to cultivate African expertise and excellence needed for the accurate analysis of African and global challenges and the suggestion of appropriate solutions.

As such, the PCNS brings together researchers, publishes their work and capitalizes on a network of renowned partners, representative of different regions of the world. The PCNS hosts a series of gatherings of different formats and scales throughout the year, the most important being the annual international conferences "The Atlantic Dialogues" and "African Peace and Security Annual Conference" (APSACO).

Finally, the think tank is developing a community of young leaders through the Atlantic Dialogues Emerging Leaders program(ADEL) a space for cooperation and networking between a new generation of decision-makers from the government, business and civil society sectors. Through this initiative, which already counts more than 300 members, the Policy Center for the New South contributes to intergenerational dialogue and the emergence of tomorrow's leaders.

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