Global Climate Action Partnership

regional leadership, global change

The Role of Article 6 in Enhancing Carbon Markets and Financing NDCs

Thursday, October 3rd

European Commission

EU ETS Carbon Allowance

€63.90 (~$71.29)

per ton CO_2

Source: EU ETS Carbon Allowance Price September 24, 2024; Available at: https://sandbag.be/carbon-price-viewer/

Gold Standard

Gold Standard – Efficient and Clean Cooking Stoves for the DRC

$20.00

per ton CO_2

Source: Gold Standard Marketplace; Available at: https://marketplace.goldstandard.org/collections/projects/products/ecoa-climate-capital-efficient-and-clean-cooking-stoves-for-households-in-the-democratic-republic-of-congo-drc

CORSIA AVIATION OFFSET PRICE

$0.25

per ton CO_2

Source: https://carboncredits.com/carbon-prices-today/

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CARBON MARKETS AND FINANCING NDC
Role of Article 6 in enhancing CM

Stephen Mutimba

2024 Global Climate Action Partnership Workshop

Together Towards Mission 1.5: Enabling Local Action to Drive Global Change

Foz do Iguaçu, Brazil

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What are carbon markets?

- In carbon markets, buyers and sellers trade in 'carbon offsets' or 'carbon credits,' which represent the reduction or removal of a specific amount of GHGs from the atmosphere.
- A carbon credit is equivalent to one metric ton of carbon dioxide.
- These credits can be earned by implementing projects that either reduce emissions, such as through energy efficiency or renewable energy initiatives, or by capturing and storing carbon, such as through reforestation or soil carbon sequestration.

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Two main types of carbon market

Voluntary Carbon Markets (VCM)

- Corporates use VCM to "pledge and comply", i.e., demonstrate achievement of their Voluntary Commitments. e.g., net-zero goals.
- Market for Emission Reduction ("Carbon") Credits (ERCs) with and without seller country authorization ("corresponding adjustment"), depending on buyer preferences.

Carbon Credit WITHOUT Authorization

"Claimed"

Carbon Credit WITH authorization

"Counted"

"Contributed"

Article 6.4 Mitigation Contribution Emissions Reduction (Article 6.4 but not authorized)

Compliance Carbon Market

Used to achieve compliance with NDC or another compliance requirement (CORSIA, Emission Trading System like Korea, Article 6)

- Only ERCs with authorization can be traded

Only Carbon Credits with authorization for Corresponding Adjustment (called Internationally Transferred Mitigation Outcomes or ITMOs under the Paris Agreement) can be traded

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Main categories of carbon projects

- Nature Based Avoidance and Removal Projects
- Tech Based Avoidance Projects
- Tech Based Removal Projects

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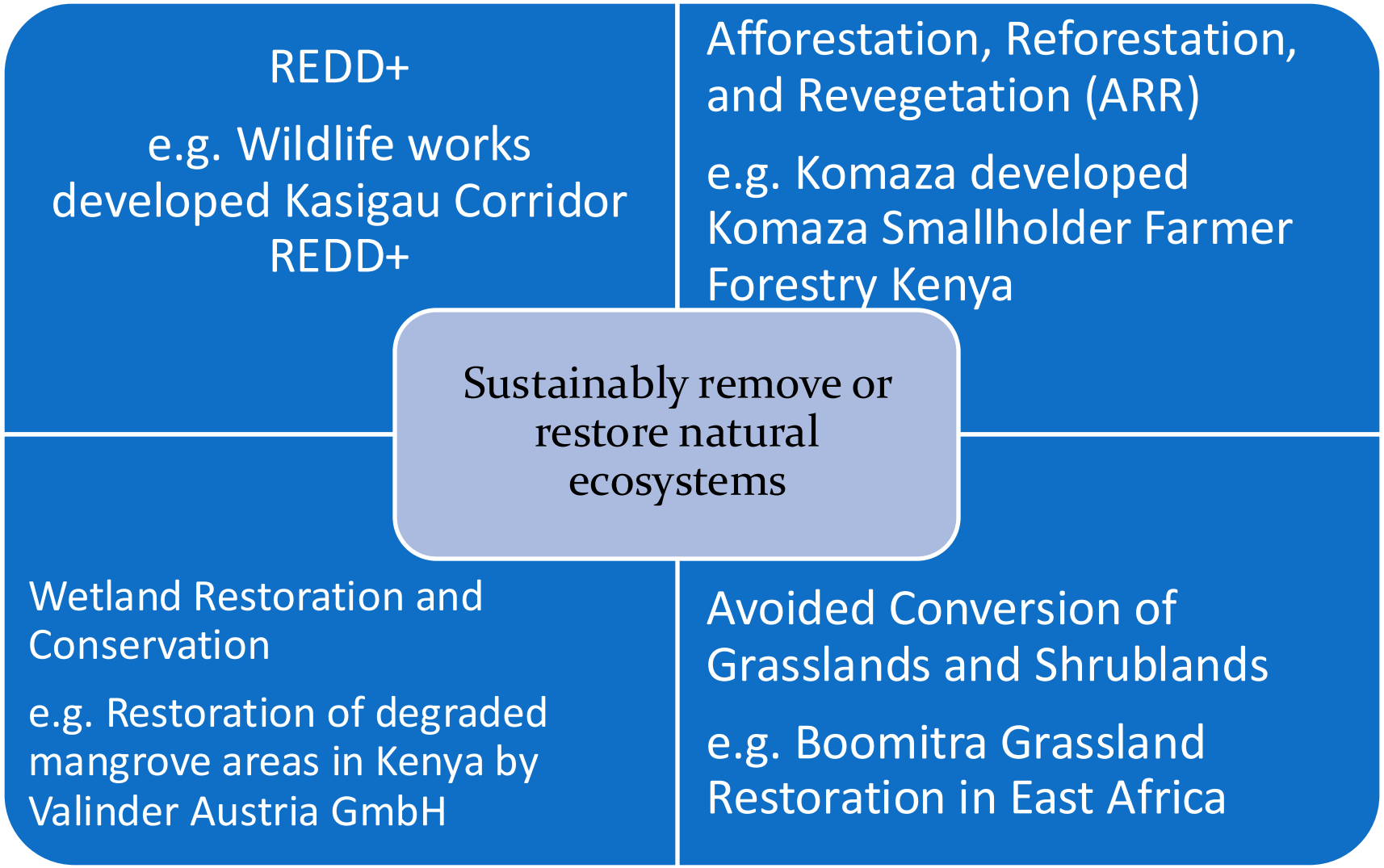
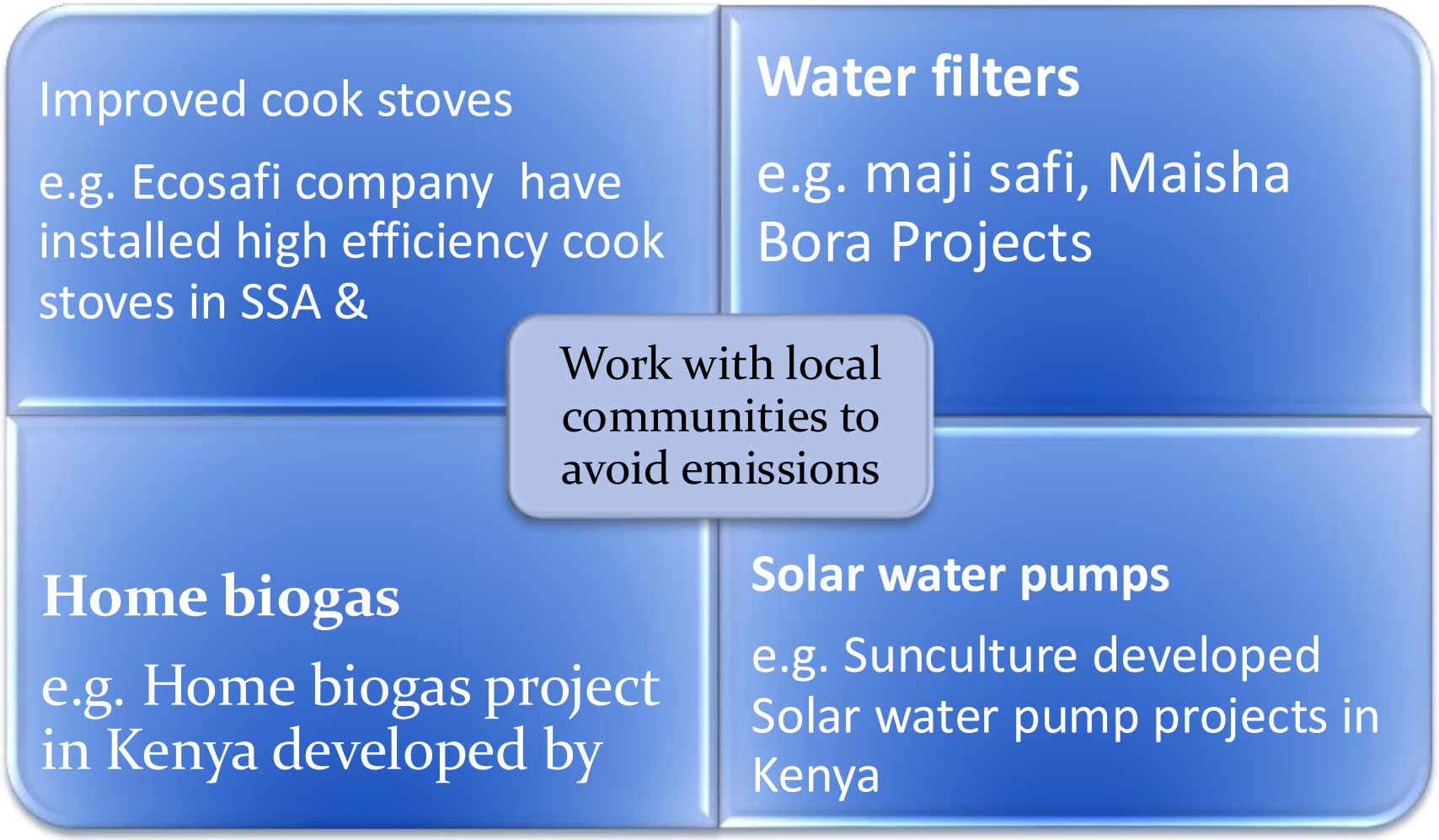
Nature Based Avoidance and Removal



Tech-based carbon avoidance projects



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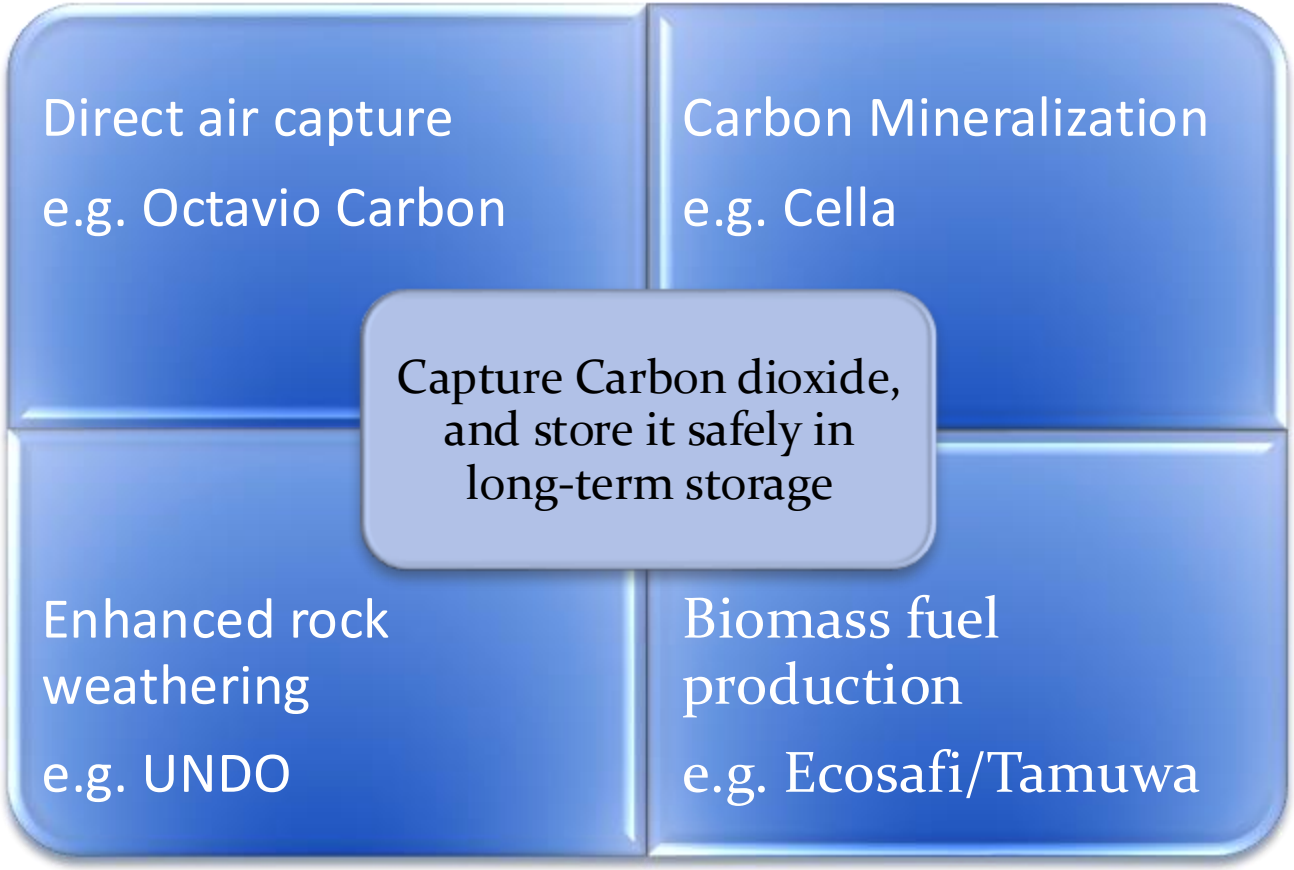
Tech Based Removal Carbon Projects



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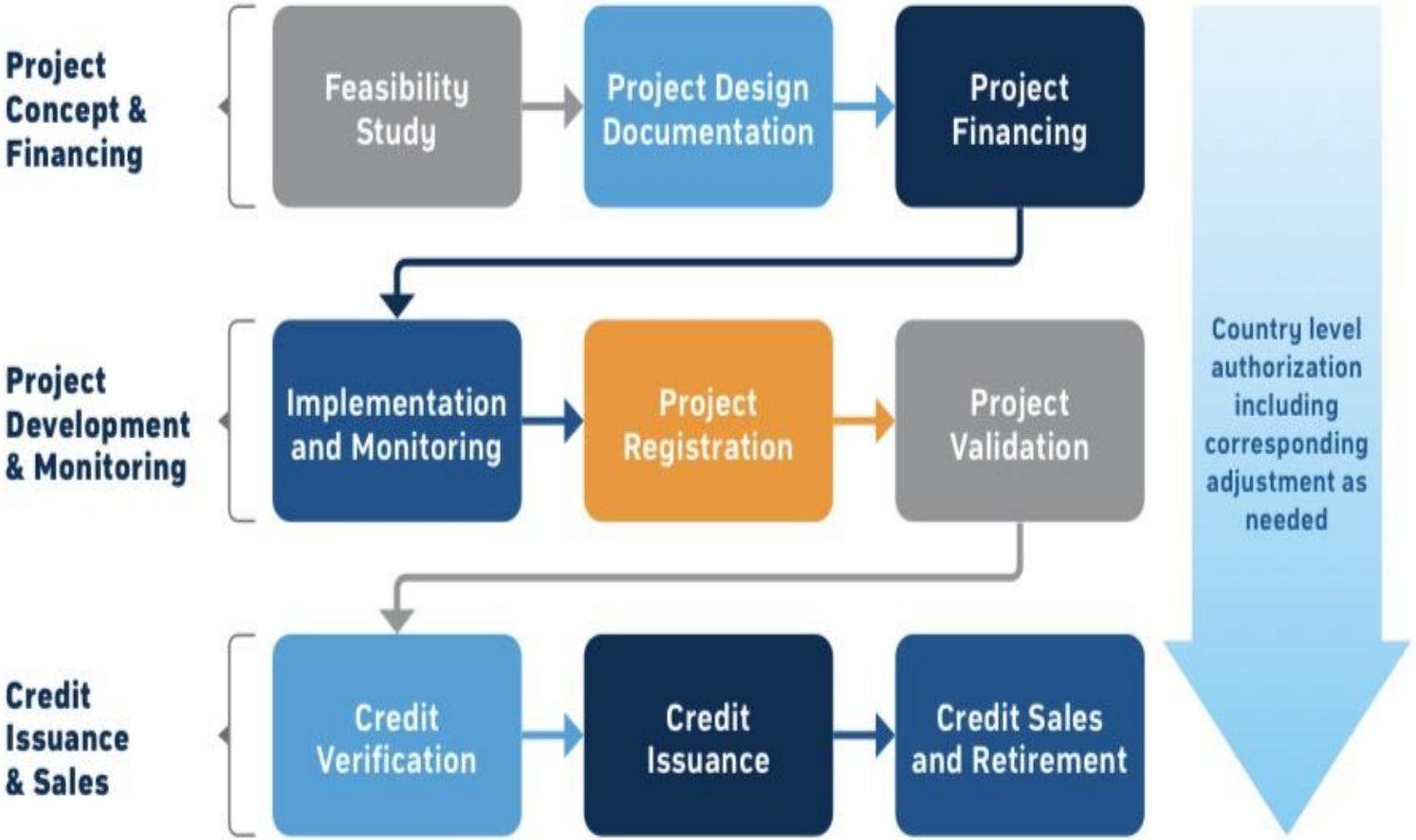
The Lifecycle of carbon project



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An Example of Carbon Project Cycle Cost Estimate

		Nature-based projects	Tech-based projects
One-off costs	Pre-feasibility	$10-30K	$10-30K
	Feasibility	$50-150K	$50-100K
	PDD	$250-500K	$100-200K
	Listing	$1-5K	$1-5K
	Validation	$40-60K	$20-40K
	Registration	$5-30K	$5-30K
Ongoing costs	Implementation & monitoring	Depends on scale and project type	Depends on scale and project type
	Verification	$100-300K / cycle	$50-150K / cycle
	Issuance	$0.002-0.15 / credit	$0.002-0.15 / credit
Total costs (rounded)	One-off	**$350-800K**	**$200-400K**
	Ongoing	**$100K+ / cycle**	**$50K+ / cycle**

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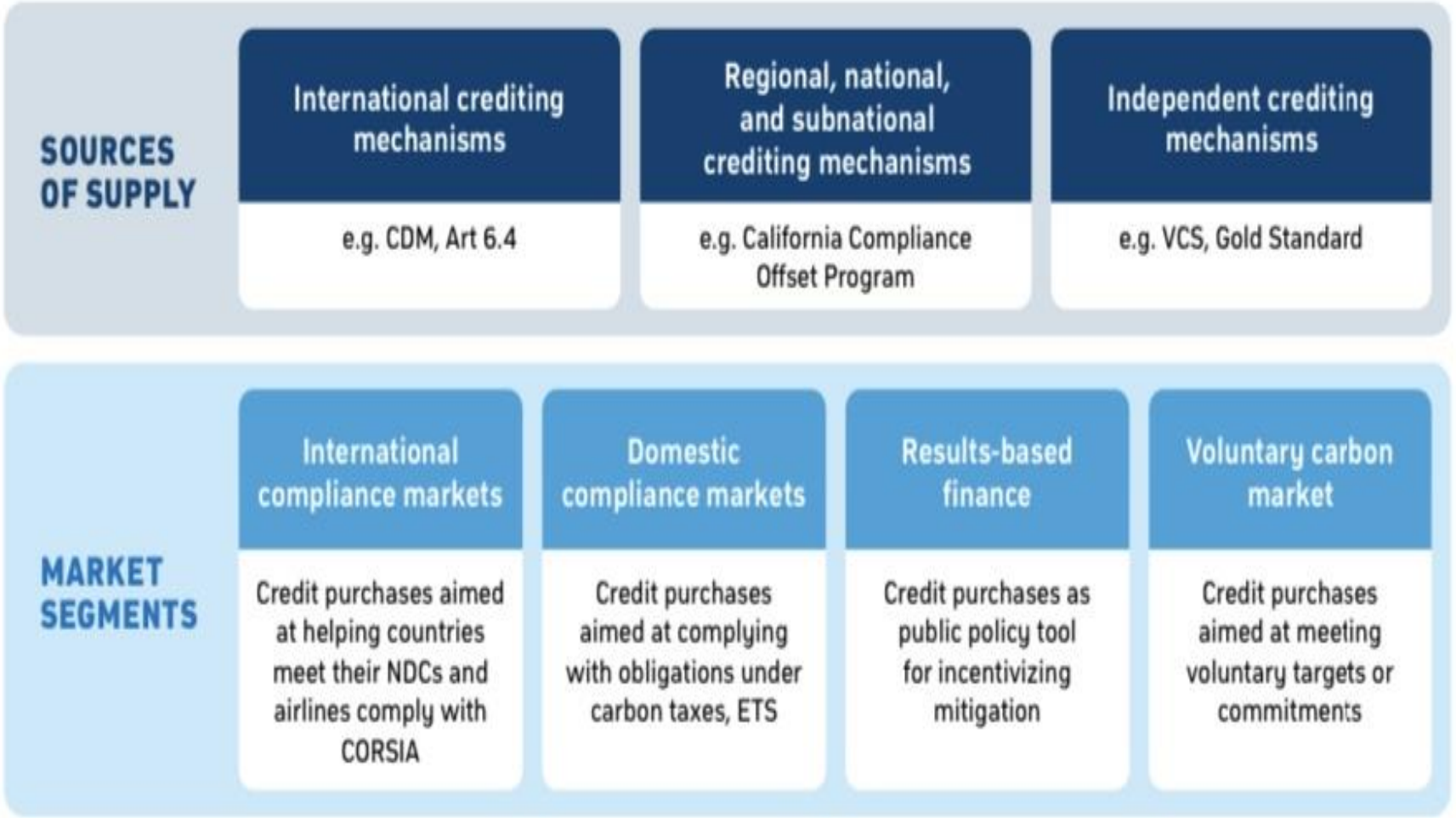
Demand and supply of carbon credits



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Readiness of Africa carbon markets: Case Study of Selected countries with focus on regulatory framework and role of Article 6.2 & 6.4

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Status of carbon markets in Africa

The consultancy overall objective is to evaluate carbon market readiness in Africa with a focus on the voluntary carbon market. The target countries are DRC, Kenya, Zambia, Cameroon and Ethiopia.

The project aims to learn from GCAP member countries from Asia and Latin America, which have advanced carbon markets.

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Background & Rationale for the side event

Carbon Market Revenues was **$104 B** in 2023 from ETS across 75 active instruments worldwide, with carbon tax accounting for **$30 B**

Asia, China leads with the world's largest ETS, while South Korea, Japan, and India are exploring markets

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Background & Rationale for the side event

Africa's market is emerging, with South Africa's carbon tax and voluntary projects like reforestation and clean energy in DRC, Keny and Zambia

Latin America shows growing interest, with Mexico, Colombia, Brazil, and Chile advancing carbon tax and ETS initiatives.

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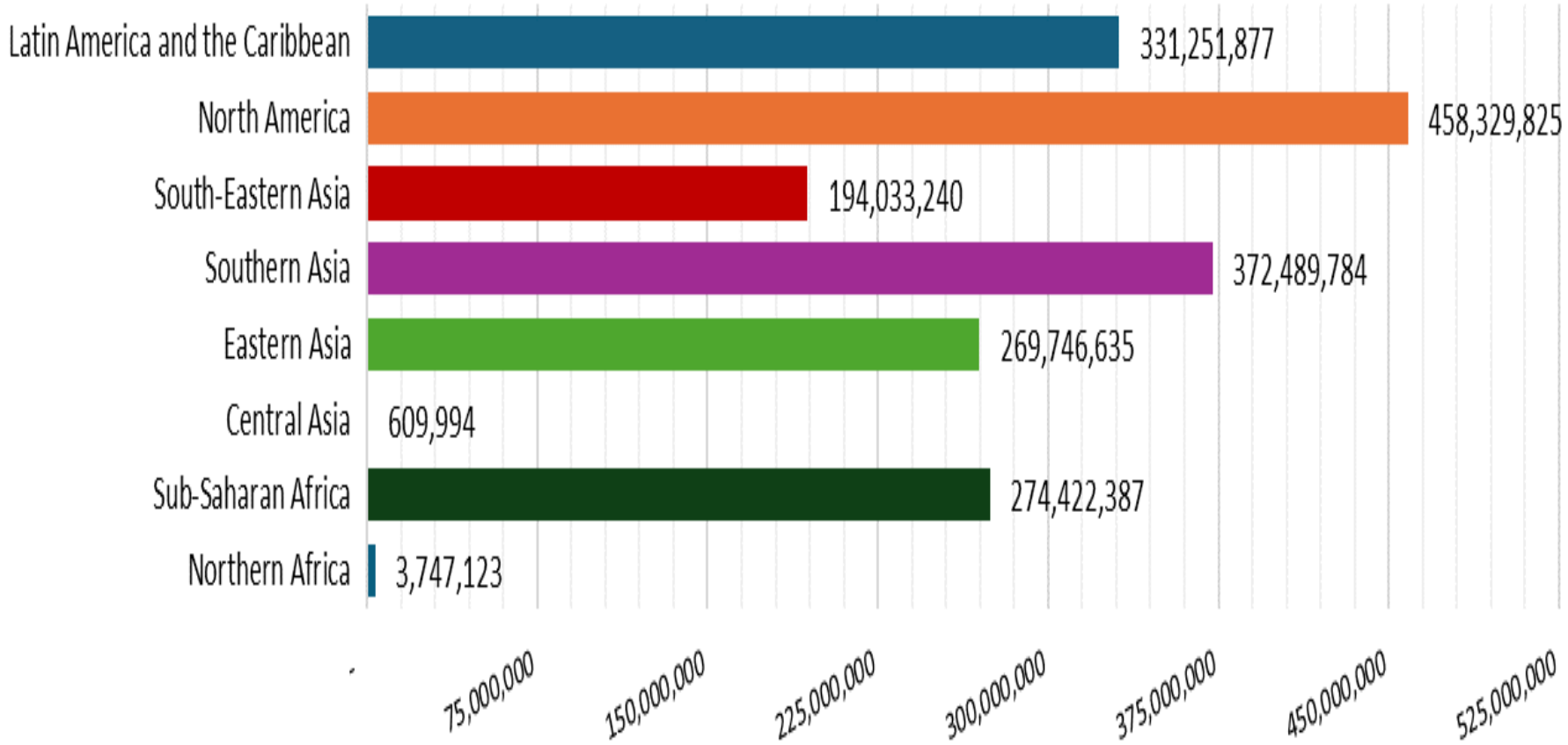
Problem Statement

Why has Africa not benefited from carbon markets?

Africa's market is emerging, with South Africa's carbon tax and voluntary projects like reforestation and clean energy in DRC, Kenya and Zambia

There is a growing momentum to increase their engagement in these markets moving forward through the newly established African Carbon Markets Initiative (ACMI).



	Northern Africa	Sub-Saharan Africa	Central Asia	Eastern Asia	Southern Asia	South-Eastern Asia	North America	Latin America and the Caribbean
Credit Count	3,747,123	274,422,387	609,994	269,746,635	372,489,784	194,033,240	458,329,825	331,251,877

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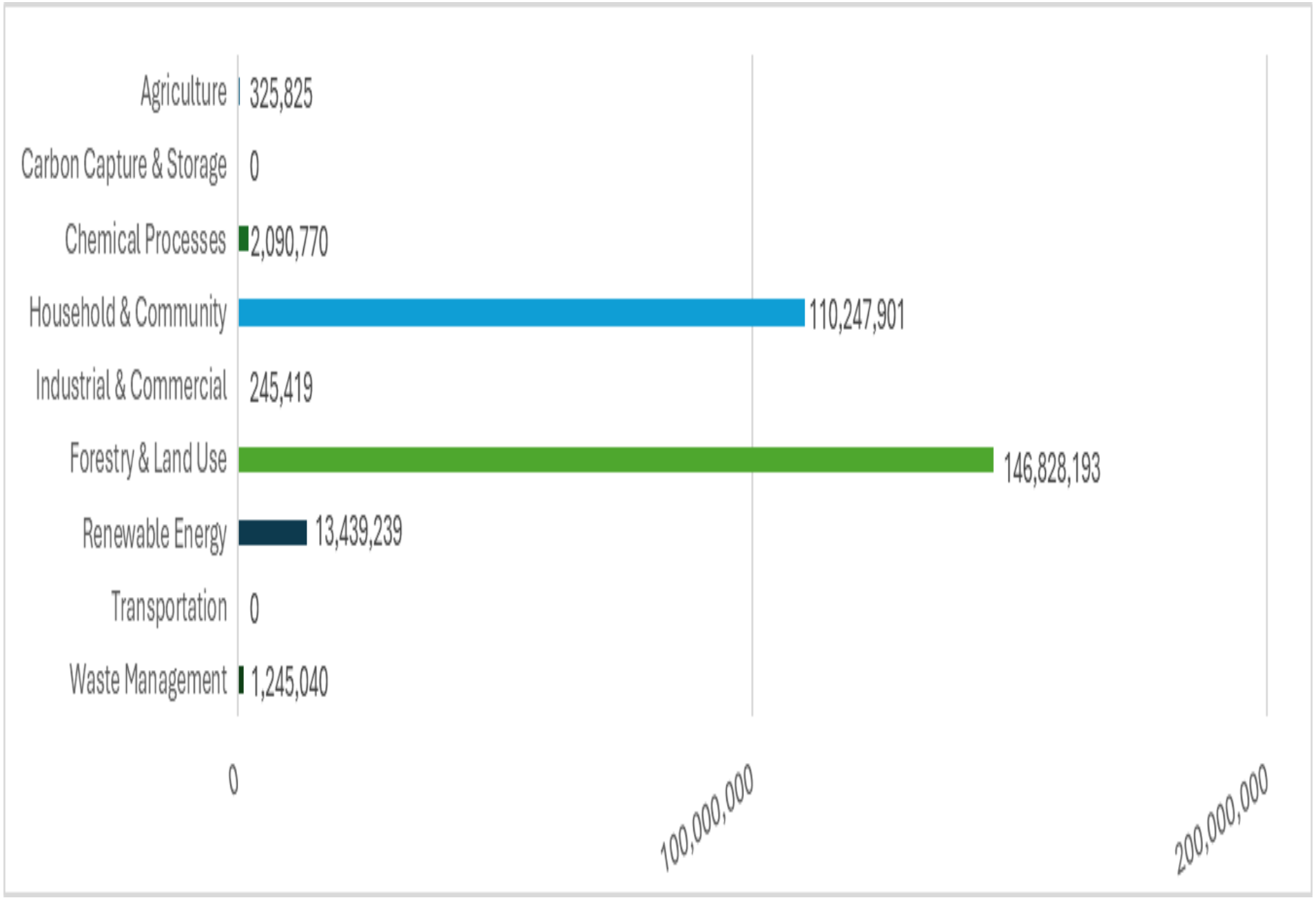

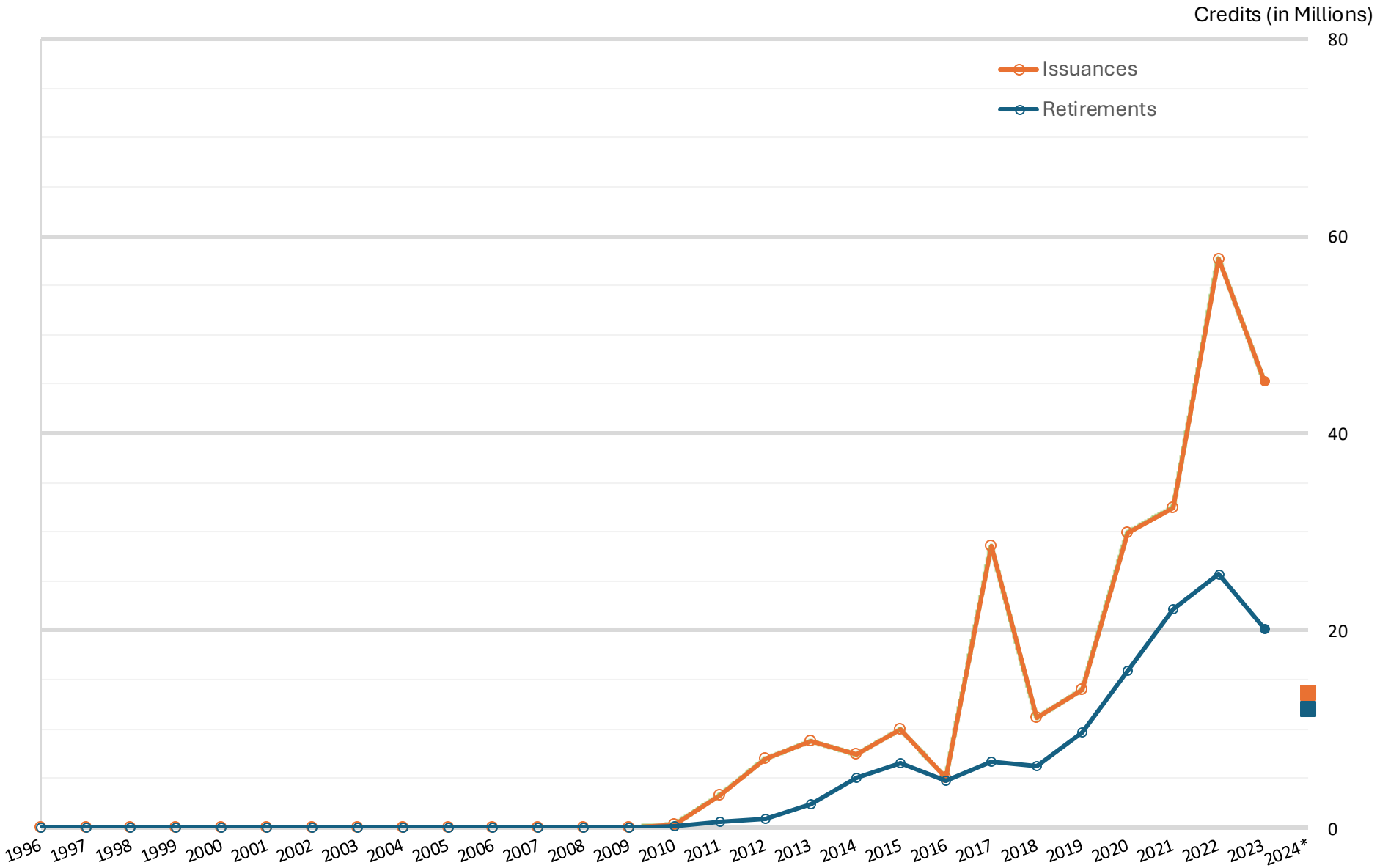
Credits (in Millions)
80
60
40
20
0
Issuances
Retirements
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024*

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Kenya Carbon Market regulatory frameworks

Kenya has established a Carbon Markets Regulations to regulate carbon project development and in the country in preparation for implementing Article 6.2 and 6.4 of the Paris Agreement.

The country has actively participated in global efforts to address climate change by adopting policies and implementing regulations in compliance with UNFCCC.

As a result, it has attracted significant investments in carbon projects, with companies like Microsoft, Gucci and Netflix already offsetting emissions through Kenyan projects.

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Kenya's CDM &VCM

Kenya has the largest CDM portfolio in East Africa, with a total of 210 registered activities.

Kenya issued through VCM a total 60,996,588 carbon credits across 279 projects, with 28,490,317 credits still remaining to be sold/retired. **Retirement rate is about 55%**

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VCM Credits issued by sector & scope in Kenya

Renewable Energy	Forestry & Land Use	Industrial & Commercial	Household & Community	Agriculture
509, 657	35,994,692	-	24,166,414	325,825

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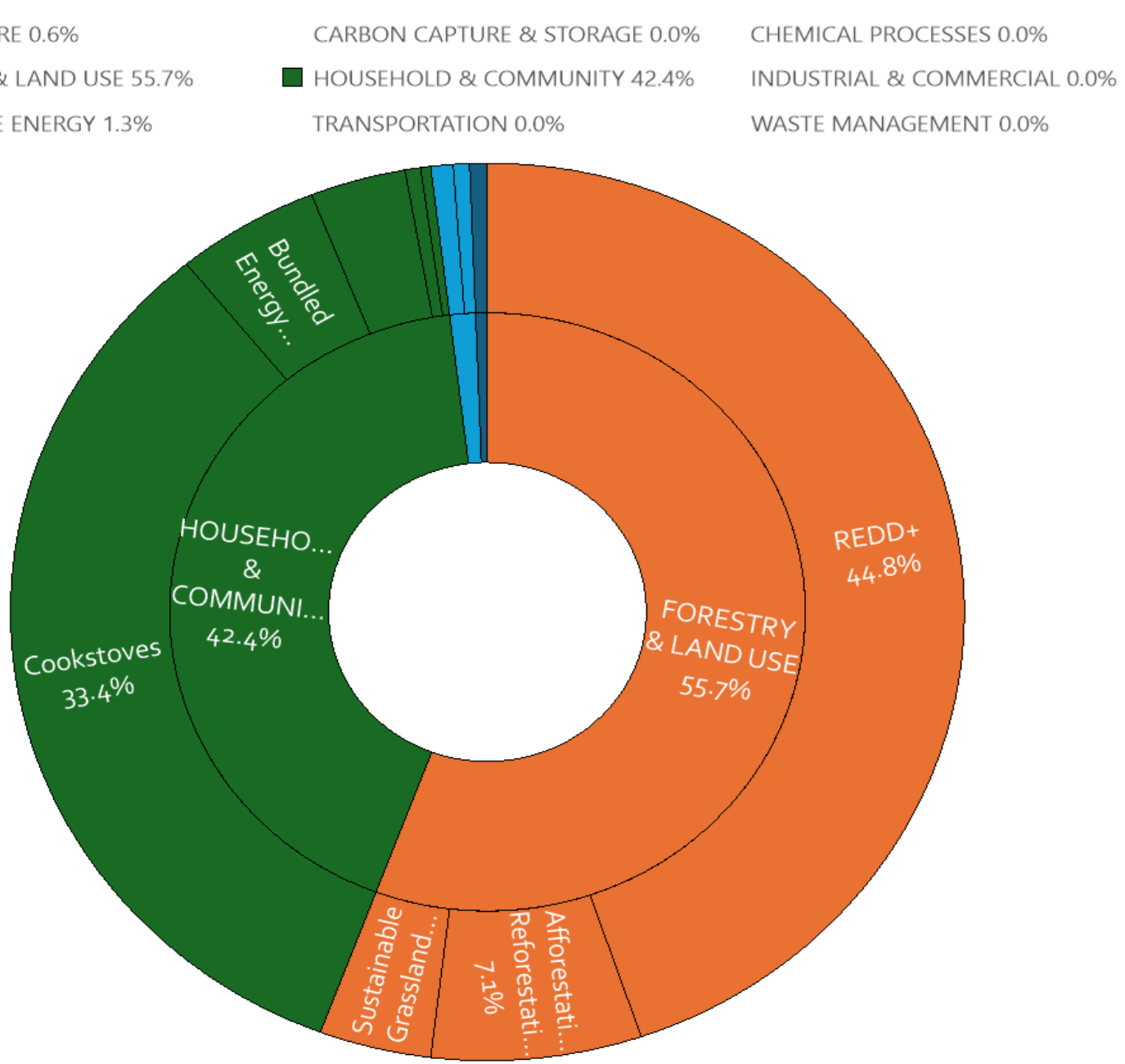

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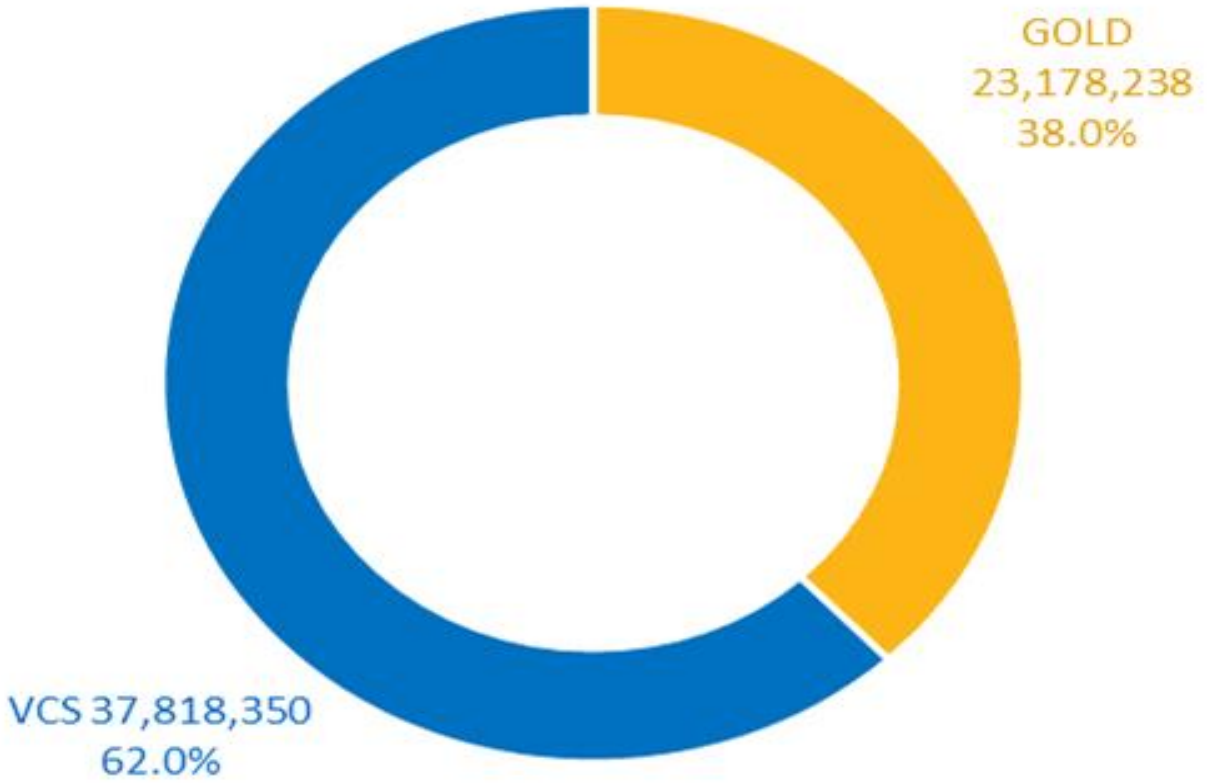
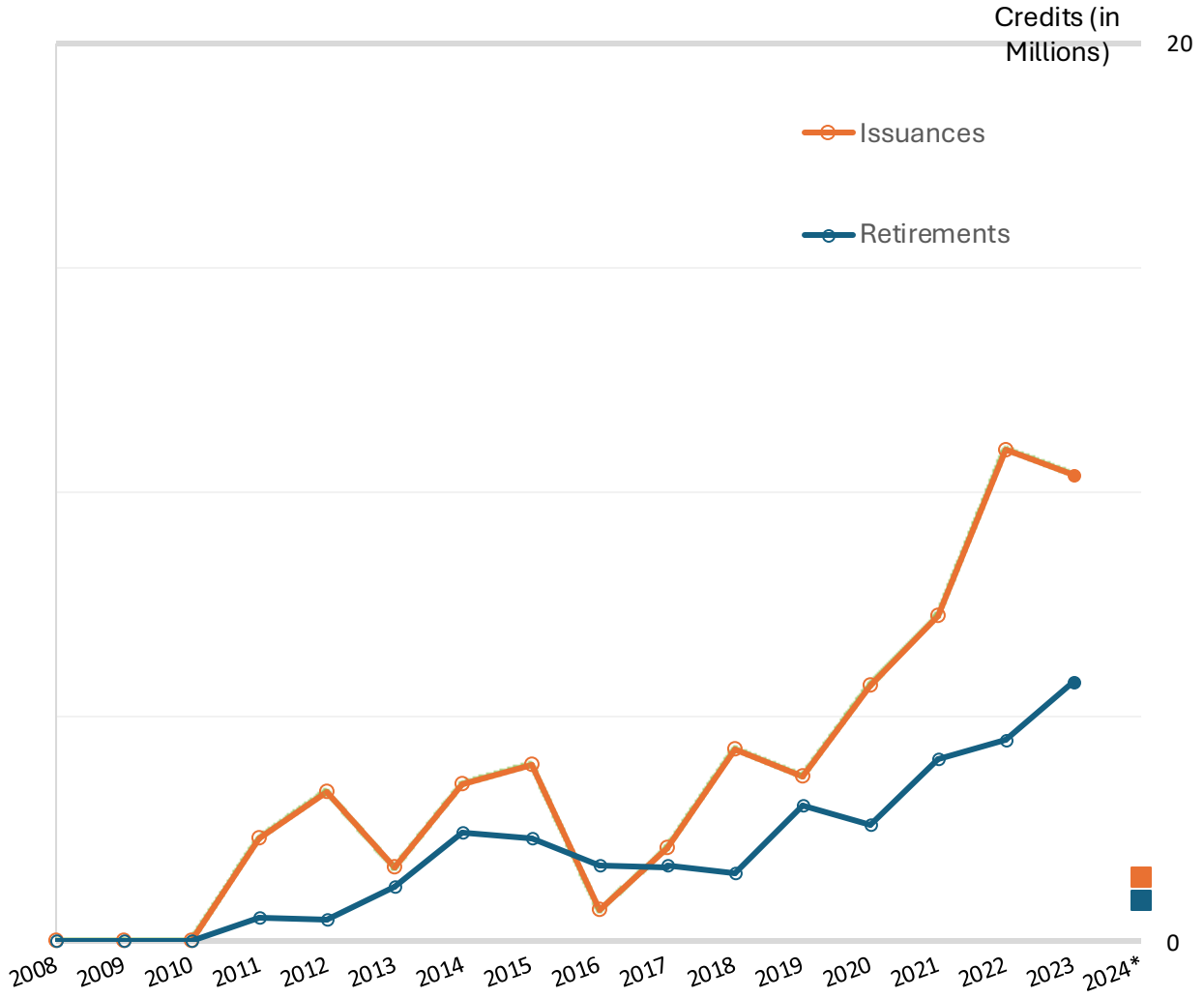
Credits issued by standard in Kenya




Credits (in Millions)
20
Issuances
Retirements
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024*

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Democratic Republic of Congo

The DRC Mitigation efforts are strongly centered around protecting its forests, which are part of the Congo Basin, one of the largest carbon sinks globally.

The DRC estimates that it requires approximately **USD 25.60 billion mitigation finance** to achieve the 21% GHG reduction target set out in the updated NDC.

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Regulation of Carbon Markets in DRC

Article 17 of the amended law 11/009 of in 2023, concerning the fundamental principles establishes the Carbon Market Regulatory Authority, termed "ARMCA.“ whose mandate is:

Promoting the participation of public and private actors, as well as local communities, in the activities of producing, buying, selling, and reselling carbon credits under conditions set by law.

The Minister in charge of the environment, will determine its organization, composition, and functioning.

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VCM credits by sector /scope

	Renewable Energy	Forestry & Land Use	Industrial & Commercial	Household & Community
Credit Count	162,403	38,641,245	-	838,392

VCM credits by sector
Source (Verra and Gold Standard Registries)

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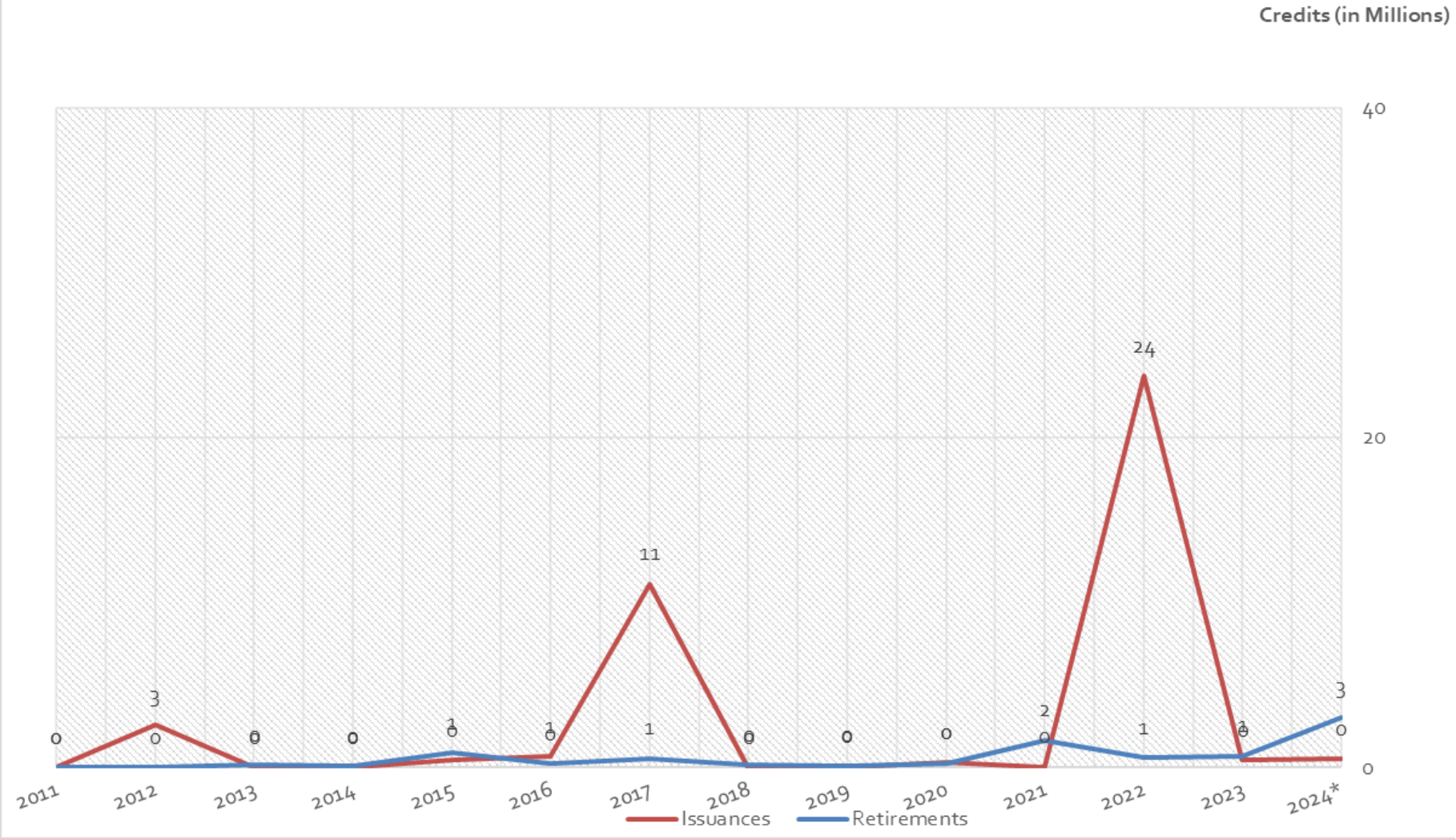
Issuance vs retirement of VCM credits in DRC



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Ethiopia Carbon profile

Ethiopia identified as having the highest technical potential among Least Developed Countries (LDCs) for developing CDM is currently a host county to three CDM projects.

However, Ethiopia's reliance on **hydropower for its electricity grid resulted in a relatively low grid emission factor**, hence inability to capitalize on RET opportunities under the CDM's assess

Since 2010, 8.9 $MtCO_2$ out of 9.4 $MtCO_2$ carbon credits issued have been retired, leaving only 1.5 $MtCO_2$ credits available for future transactions.

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Credits issued by sector & scope (Ethiopia)

Renewable Energy	Forestry & Land Use	Industrial & Commercial	Household & Community
51,159 MTCO2e	**9,361,633MT CO2e**	**-**	**1,089,328 MTCO2e**

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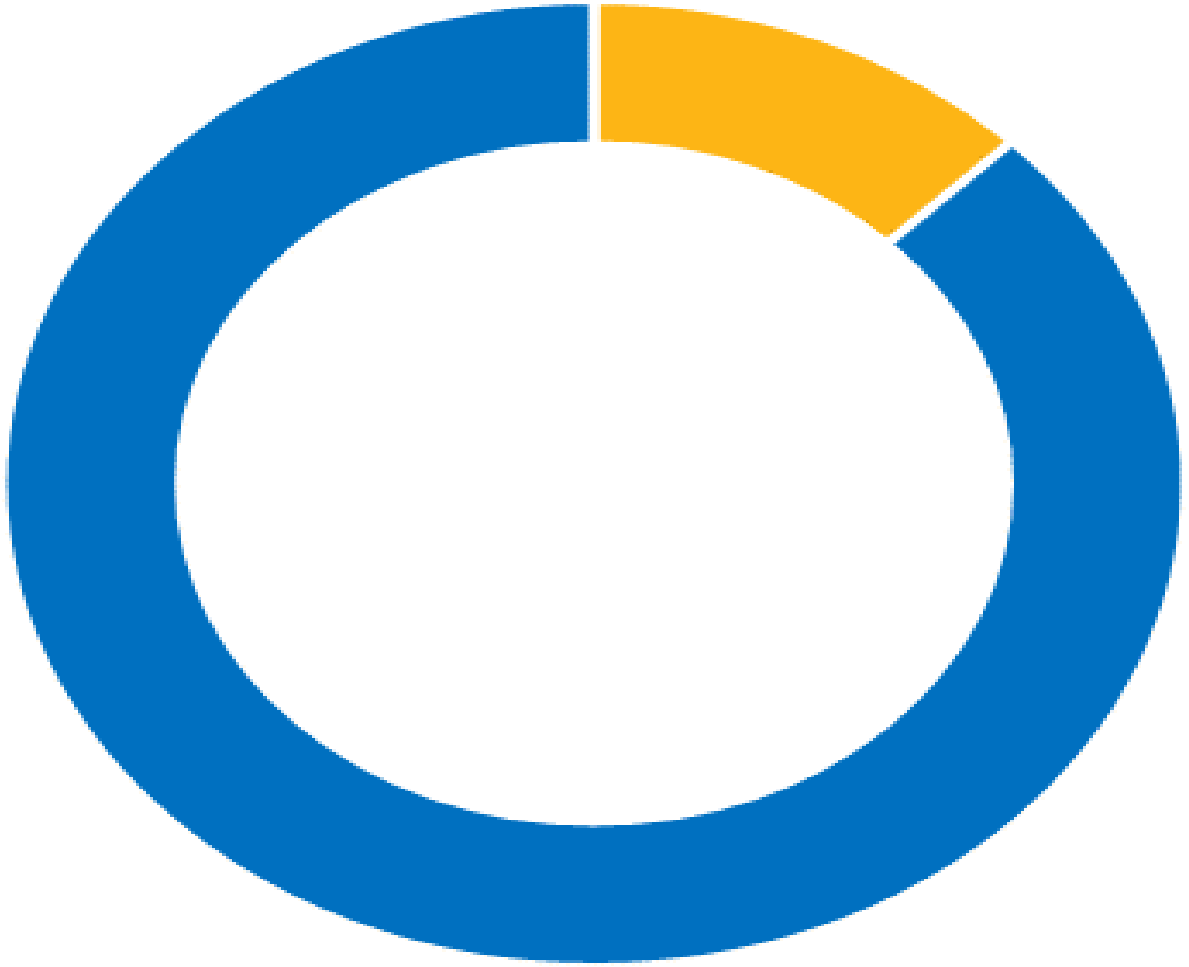

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Republic of Zambia NDC

Zambia's updated NDC 2020 aims to reduce emissions to At least 25% (20 MT CO_2 eq.) by 2030 against a base year of 2010 (120 MT CO_2 eq) under the BAU scenario with limited international support or by **47% (38 MT CO_2 eq.) with substantial international support.**

The updated NDC underscores Zambia's strong intention to leverage voluntary cooperation under Article 6 of the Paris Agreement to fulfill part of its contribution to global climate goals.

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Zambia's Carbon policy frameworks

Zambia's Carbon Market Framework aligns with Article 6 , enabling ITMO in carbon markets. Key guidelines include:

authorizing projects that meet Zambia's NDCs, ensuring **transparency and reporting to avoid double counting**, and establishing institutional arrangements like a DNA for oversight.

The framework emphasizes environmental integrity, sustainable development, and capacity building while encouraging private sector participation in carbon trading.

It ensures Zambia's carbon market activities contribute to both global climate goals and national development objectives

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Zambia's CDM Profile

Zambia is host to three CDM all of which are renewable energy sources.

The three projects have issued a total a total of 704,435 Certified Emission Reductions (CERs).

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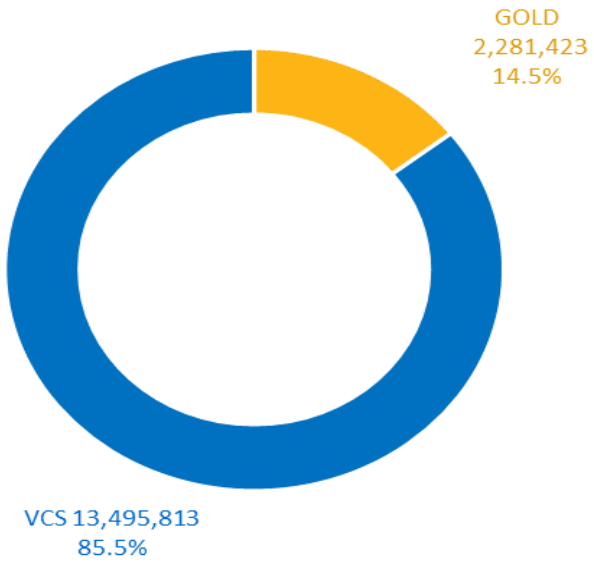
Zambia VCM profile

Renewable Energy	Forestry & Land Use	Household & Community
13,559 Gold Std	11,639,141 (Verra)	4,124,536 Gold std

Credits Issued by standards



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Cameroun CDM & VCM Profile

Cameroun hosts 3 CDM projects with two of these projects in the waste handling and disposal sector, and in the renewable energy industry, with total CERs of 522,496 $MTCO_2$.

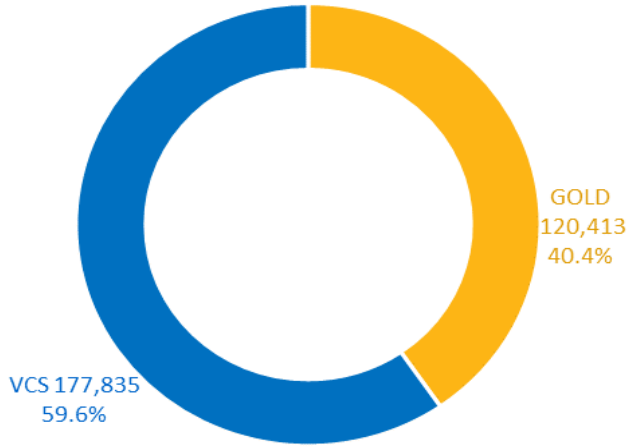
Cameroon has registered 15 VCM projects, issuing 298,248 (2.9 $MTCO_2e$), the forestry and land-use sector has been the largest contributor, accounting for 1.77 $MTCO_2e$ issued credits

Cameroun's credits by standards

VCM credits by sector

Waste Mgmt	Forestry & Land Use	Household & Community
15,081	**177,835**	**105,332**

Credit issued by standards



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CHALLENGES FACING AFRICAN CARBON MARKETS

The key challenges impeding progress are outlined as follows:

1. **Concerns about the integrity of both credit supply and demand** of carbon credits issued by VCM
2. **Concerns about displacement of indigenous and pastoralist** communities by large land use carbon projects.
3. **Land use rights issues further complicate** African carbon markets by creating legal and social challenges.
4. **Lack of validation and verification bodies** in the continent: Across the continent, there are very few validation and verification bodies (VVBs).
5. Intermediation and financing: The cost of financing carbon projects across Africa remains prohibitively high
6. **Inadequate of carbon market regulations in the continent**: A significant barrier to the development and scaling of carbon markets across Africa is the lack of comprehensive regulatory frameworks in most countries

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Role of article 6 in carbon markets

Article 6 allows countries to trade in internationally Transferred Mitigation Outcomes (ITMOs) to jointly achieve their NDCs.

ITMOs help host countries meet their unconditional NDCs or climate commitments without external support. Buying country gets carbon credit with **corresponding adjustment** to ensure no double counting of emissions reductions and removals by countries.

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Role of carbon markets (Art6.2) in NDC financing

Create	Cost-effective emission reductions by enabling entities to purchase carbon credits from more efficient projects.
Encourage	innovation by providing financial incentives for new technologies and practices that reduce GHG emissions. Eg RET, EV, AWD, SRI
Facilitate	financial flows to developing countries, thereby supporting SD and GHG reduction projects in regions with limited resources.
Enhance	Enhance environmental integrity through strict standards and verification processes, ensuring that emission reductions are real, measurable, and permanent.
Offer	flexibility for countries and companies to meet climate targets by allowing them to choose the most efficient and cost-effective approach.

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UNDP

SSN

NREL GCAP AfCAP-FWG

Thank You

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Welcome Back.....

Thursday, October 3rd

CALIFORNIA AIR RESOURCES BOARD

California AB32 Cap and Trade Program

$32.93 (2023)

per ton CO_2

Source: ICAP; Available at https://icapcarbonaction.com/en/ets/usa-california-cap-and-trade-program

Gold Standard®

Gold Standard – 300 MW Solar in Bhadla, Rajasthan

$12.00

per ton CO_2

Source: Gold Standard Marketplace; Available at:
https://marketplace.goldstandard.org/collections/projects/products/eki-energy-services-limited-300-mw-solar-pv-plant-at-bhadla-rajasthan

Jurisdictional Reducing emissions from deforestation and forest degradation (JREDD+)

~$9

per ton CO_2

Source: EDF JREDD+; Available at: https://www.edf.org/media/average-prices-jurisdictional-redd-credits-reach-15-2028

2030 carbon price levels consistent with limiting temperature rises to 1.5 °C.

$226 - $385

per ton CO_2

Source: World Bank State of Carbon Markets; Available at https://openknowledge.worldbank.org/entities/publication/b0d66765-299c-4fb8-921f-61f6bb979087

Extra

Korea Carbon Compliance Market

Won 9900 (~$7.53)

per ton CO_2

Source: Korea Carbon Compliance Market; Available at: https://carboncredits.com/carbon-prices-today/

China Carbon Compliance Market

$14.13

per ton CO_2

Source: Korea Carbon Compliance Market; Available at: https://carboncredits.com/carbon-prices-today/

FIGURE 20

Exchange-traded (ET) prices from April 2021 to 1 April 2024 and comparisons between yearly average of ET and over-the-counter prices (OTC)