

Pathways for Strengthening Validation and Verification Body (VVB) Capacity in Africa

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Abbreviations

ACMI	Africa Carbon Markets Initiative	ICROA	International Carbon Reduction and Offset Alliance
AFOLU	Agriculture, Forestry and Other Land Use	ICVCM	Integrity Council for the Voluntary Carbon Market
AFRAC	African Accreditation Cooperation	ISO	International Organization for Standardization
ARSO	African Organisation for Standardisation	ITMO	Internationally Transferred Mitigation Outcome
CDM	Clean Development Mechanism	M&E	Monitoring and Evaluation
CER	Certified Emission Reduction	MRV	Monitoring, Reporting and Verification
CCP	Core Carbon Principles	NABCB	National Accreditation Board for Certification Bodies
CIWP	Continuous Improvement Work Programme	NDC	Nationally Determined Contribution
COP	Conference of the Parties	PACM	Paris Agreement Crediting Mechanism
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation	PoA	Programme of Activity
CPA	Component Project Activity	PMP	Performance Monitoring Program
DFI	Development Finance Institution	QA/QC	Quality Assurance / Quality Control
DNA	Designated National Authority	RCC	Regional Collaboration Centre
DOE	Designated Operational Entity	SADCAS	Southern African Development Community Accreditation Service
dMRV	Digital Measurement, Reporting and Verification	SANAS	South African National Accreditation System
EGAC	Egyptian Accreditation Council	SD	Sustainable Development
ETS	Emissions Trading System	SDG	Sustainable Development Goal
EU ETS	European Union Emissions Trading System	UNFCCC	United Nations Framework Convention on Climate Change
FRA	Financial Regulatory Authority (Egypt)	VCM	Voluntary Carbon Market
GHG	Greenhouse Gas	VCMI	Voluntary Carbon Markets Integrity Initiative
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	VCS	Verified Carbon Standard
GS	Gold Standard	VVB	Validation and Verification Body
ISO	International Organization for Standardization		
IAF	International Accreditation Forum		



Executive Summary



Following the finalisation of the Paris Agreement Article 6 rulebook, Africa is entering a period of rapidly expanding high-integrity carbon market activity to support implementation of Nationally Determined Contributions (NDCs), compliance mechanisms including the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and voluntary mitigation commitments by corporates. While these interrelated market segments are separately moving towards implementation, Africa is starting from a limited base of validation and verification capacity. The current shortage of Africa-based Validation and Verification Bodies (VVBs) and qualified auditors leads to higher validation and verification costs due to travel, logistics and higher overheads, longer validation and verification timeframes (approximately 2 – 9 months) and a continued reliance on international auditors.

Evidence from literature and stakeholder insights indicates that Africa still relies on international VVBs and non-African auditors for over 90% of verification activities. Developers estimate that 10-50% of total project delays and cost overruns are attributable to VVB bottlenecks. If unaddressed, these constraints risk slowing credit issuance and weakening Africa's competitiveness in global carbon markets and limiting the creation and retention of highly qualified jobs.

There is strong consensus across the literature and consulted stakeholders that one of the primary constraints is the shortage of qualified personnel, rather than the absolute number of VVB entities – making targeted hiring and skills development one of the key levers for accelerating capacity. However, developing sustainable VVB capacity does not emerge through training alone. Africa's

VVB challenge is not a technical skills problem, but a structural market and institutional gap that will widen without coordinated action. Global benchmarking and consultations with African stakeholders demonstrate that effective capacity development depends on clear policy and carbon market demand signals, robust monitoring, reporting and verification (MRV) systems, accreditation frameworks aligned with the International Organization for Standardization (ISO) and structured professional pathways that link training and audit demand emerging from carbon market activities. In Africa, the most binding constraints are unclear policies under Article 6, insufficiently developed MRV and accreditation systems, limited demand predictability and poor auditor retention and career progression. Sustainable VVB ecosystems tend to emerge where governments provide clear, credible signals on the role of carbon markets in NDC implementation and explicitly recognise VVB functions within national MRV systems.

Demand for validation and verification services is expected to rise significantly until 2030, driven by Article 6.2 cooperation, the implementation of the Paris Agreement Crediting Mechanism (PACM), CORSIA and high-integrity voluntary uses. This demand is cumulative across market segments and will compete across the same limited pool of auditors, meaning capacity gaps are expected to widen without targeted intervention. The 32nd Conference of the Parties (COP32), hosted in Addis Ababa, Ethiopia, will be internationally perceived as an "African COP" which provides an opportunity to elevate this issue in particular through carbon market-related action agenda initiatives.

Strengthening Africa-based VVB capacity offers both efficiency and governance benefits. Local auditors are better positioned to assess data quality, baselines, additionality and sustainable development impacts due to better understanding of the local context, a critical requirement under Article 6. When anchored

in internationally recognised accreditation standards, expanded local capacity can reduce costs and delays, improve integrity and transparency and retain more economic value within African economies. Regional training and accreditation hubs could further position Africa as a competitive supplier of high-integrity Article 6 and voluntary carbon credits by reinforcing consistent quality, transparency and accountability

across jurisdictions. Without coordination, however, auditors risk being trained to different standards and templates across schemes, accreditation bodies may set divergent requirements and scarce training, and institutional capacity could be spread too thinly across overlapping initiatives, undermining integrity and scalability.

This report concludes that closing the VVB capacity gap by 2030 requires a phased and coordinated approach, moving from rapid deployment of Africa-based auditors in the near term to the establishment of durable African VVB institutions over time. The following priority actions synthesise and operationalise the five overarching recommendations and seven strategic pathways set out in the main report:

- 1 Providing clear policy signals on the role of carbon markets in NDC implementation and embed VVB functions within national MRV frameworks
- 2 Strengthening regional and national accreditation and training pipelines aligned with ISO standards and priority sectors in the African project pipeline
- 3 Harmonise regional training-to-accreditation pathways as a structural precondition for scaling with integrity, including mutual recognition where feasible
- 4 Rapidly scaling Africa-based auditors' engagement in VVB services for carbon market activities through co-auditing, mentorship, and permanent regional audit teams
- 5 Improving and addressing auditor retention and career progression through demand-linked professional pathways
- 6 Deploying targeted financial de-risking instruments to address accreditation costs, working capital needs, and early-stage risk
- 7 Exploring durable domestic financing options such as allocating a share of proceeds from carbon levies to fund verification capacity, reduce dependency on short-term donor cycles and align incentives for market credibility
- 8 Integrating digital MRV tools as efficiency-enhancing complements within robust institutional and accreditation frameworks
- 9 Embedding inclusivity pathways throughout all priority actions such as targeted outreach and scholarships for women and under-represented groups, multilingual materials and delivery, and deliberate representation of least developed countries and smaller markets within regional hubs

Closing Africa's VVB capacity gap by 2030 requires coordinated action to anchor verification capacity in clear high integrity carbon markets frameworks, while rapidly scaling Africa-based auditors to meet growing demand. This must be accompanied by the establishment of harmonised regional accreditation and training pathways that link accreditation, supervised audits, and career progression, alongside targeted financial de-risking to make Africa-based VVB operations commercially viable. Digital MRV tools and inclusivity should be integrated as cross-cutting enablers to improve efficiency, expand access, and ensure that expanded VVB capacity delivers credible, high-integrity outcomes at scale.

Beyond diagnosis, this work has informed the design of a strategic accelerator programme concept aimed at scaling VVB capacity in Africa in line with the recommendations set out in this report. The accelerator concept translates evidence into concrete action by combining policy engagement, accreditation-aligned training, supervised audit deployment, and targeted financial support to unlock private investment in Africa-based VVB capacity.

VCMI, GIZ, and partners are invited to engage on the findings and implementation pathways outlined in this report.

Stakeholders interested in discussing the accelerator concept or collaboration opportunities are encouraged to contact: VCMI (george.hodgetts@vcmintegrity.org) & GIZ (ritah.rukundo@giz.de)





1 Introduction



Decisions taken at the 28th Conference of the Parties (COP28) on Article 6 have reinforced the role of carbon markets as an increasingly important pillar of Africa's climate and sustainable development strategy, linking the continent's significant mitigation potential with much-needed investment for resilience, green industrialisation, and inclusive growth. Africa issued approximately 12.2 million carbon credits in 2024 and is approaching parity with Asia in voluntary market issuance yet remains underrepresented relative to its mitigation potential (CAP-A & ACMI 2025); meanwhile, carbon markets are undergoing a profound transition, with demand expected to increase substantially.

Simultaneously, there is widespread recognition that carbon markets need to be based on high environmental and social integrity. In this context, validation and verification bodies (VVBs) play a central role: they provide independent assurance that emission reductions and removals are real, additional, permanent and properly monitored, and are therefore essential to the credibility of African credits for voluntary and compliance uses. Simultaneously, VVBs globally need to respond to new requirements emerging from the Paris Agreement rulebook, particularly the Paris Agreement Crediting Mechanism (PACM) established under Article 6.4 and the alignment of methodologies with the Paris Agreement by most carbon crediting programmes. VVBs will also need to ensure their assurance approaches and procedures are consistent with evolving integrity benchmarks, including the Integrity Council for the Voluntary Carbon Market's Core Carbon Principles (ICVCM's CCP). Until today, Africa's current VVB footprint remains thin and heavily reliant on international firms, creating bottlenecks, high transaction costs and limited local ownership and economic benefits of validation and verification services. Yet, as the carbon market is shifting towards implementation at scale, there is a significant opportunity for Africa-based VVBs to

emerge as a key enabling factor for scaling high integrity carbon markets in support of ambitious African Nationally Determined Contributions (NDCs).

This report builds on a combination of literature review and stakeholder consultations with key market actors, including accreditation authorities, buyers under Article 6.2, project developers, VVBs, carbon crediting programmes, digital MRV and technology providers, think tanks and other initiatives.

The analysis draws on international experiences in emerging markets and Africa-specific evidence on accreditation systems, project pipelines, VVB operations and the evolving policy, demand and supply landscapes. Together, these sources are used to diagnose current gaps, identify feasible interventions and highlight where regional collaboration could accelerate progress on enhancing VVB capacities.

The findings support recommendations to strengthen VVB capacity in Africa, including options to enhance local VVB ecosystems,¹ improve accreditation and oversight systems, and reduce validation and verification bottlenecks. These interventions aim to ensure African countries can participate effectively in

high-integrity carbon markets across relevant market segments, in alignment with the Paris Agreement rulebook. They also provide an evidence base and strategic actions for the design of a possible VVB accelerator and complementary support instruments.

Strengthening Africa's VVB ecosystem is expected to deliver material benefits including:



Economic benefits: Creation of new technical and green jobs through regional auditor academies and university partnerships; lower validation and verification costs by reducing reliance on international auditors; and greater retention of value within African economies through the growth of viable local VVB firms.



Social and institutional benefits: Stronger domestic MRV expertise, reduced dependence on external actors, and deeper cooperation among regulators, accreditation bodies, universities and standards, alongside the integration of stronger digital MRV skills.



Market development benefits: Positioning Africa as a competitive supplier of high-integrity Article 6 and voluntary carbon market credits across priority sectors, supported by consistent audit quality and scalable verification business models.



Climate governance benefits: More transparent and accountable MRV systems, reduced risks of greenwashing and double counting, and stronger host-country control over authorisation and benefit-sharing processes.



Improved resilience: Faster project cycles and greater responsiveness to evolving methodologies and buyer requirements, enabled by a broader, regionally distributed auditor base.

¹ "VVB ecosystems" refers to the set of institutions, rules, and market actors that enable VVBs to operate effectively, including accreditation and oversight arrangements, technical capacity, methodologies and tools, and the project pipeline that generates demand for validation and verification services.



2 Global benchmarking of VVB capacity development in other emerging markets

The analysis focused on selected emerging markets in Asia and Latin America where VVB ecosystems are either relatively mature or have experienced stalled development. Asian cases include Singapore, Thailand, India, Indonesia, Viet Nam and Pakistan, while Latin American cases focus on Brazil, Colombia, and Chile, with additional

observations from Peru and Mexico. The analysis identifies enabling factors and lessons learned and assesses how and why successful approaches could be adapted to African contexts shaped by Article 6, the PACM, CORSIA, and high-integrity voluntary carbon markets (VCM).

2.1. Policy frameworks and long-term demand signals

Sustainable VVB ecosystems emerge where governments provide clear, credible signals on the role of carbon markets in climate policy for NDC implementation and explicitly recognise VVB functions within national MRV systems.

In Brazil and India, climate and carbon market regulations clarify how credits contribute to NDCs and define the roles of accredited VVBs, which reduces uncertainty and enables firms to invest in staff competence, sector expertise and ISO-aligned quality management systems (Government of Brazil 2015; Government of India 2024). Where recognition of international credits is unclear or rules change frequently, domestic VVB investment tends to follow stop-go cycles, leading to fragile capacity and continued reliance on external auditors even

when project pipelines exist (World Bank 2022). For Africa (where most demand will come from PACM, Article 6.2 cooperation, CORSIA and high-integrity voluntary markets rather than large domestic ETs), benchmarking suggests that early clarification of how these mechanisms are embedded in national frameworks is essential. It also suggests that clarity on how VVBs are recognised within them is a precondition for African VVBs to become stable market actors rather than short-term contractors (ACMI 2024). Kenya's Carbon Market Regulations (Government of Kenya 2024) illustrate early integration of carbon markets into national climate governance, including formal recognition of VVB functions. They offer an initial example of how African countries can reduce uncertainty for VVBs through clearer institutional embedding.

2.2. Market size, sector focus and accreditation architectures

Across benchmark markets, the commercial VVB viability is shaped by the interaction between market size, sectoral composition, and accreditation architecture. VVB viability depends on sufficient, repeat audit demand and a sector mix that allows specialisation, as seen in markets with sizeable renewable energy, AFOLU, waste management, and industrial decarbonisation portfolios that support local

or regional VVBs across compliance and voluntary schemes (INMETRO 2016; NABCB 2024). Where pipelines are small or volatile, countries typically depend on foreign VVBs, raising costs and limiting domestic learning. Donor-funded training that is not linked to stable demand often fails to produce lasting entities (World Bank 2021; GGGI et al. 2025).

Successful systems anchor VVB capacity in ISO-aligned national accreditation bodies recognised by major carbon crediting programmes (for example Brazil's CGCRE/INMETRO, Colombia's ONAC, India's NABCB and the Singapore Accreditation Council) allowing locally accredited firms to work across domestic and international markets (INMETRO 2016; ONAC 2025; NABCB 2024; Singapore Accreditation Council 2023). Where such frameworks are missing, externally accredited VVBs dominate, constraining national oversight (World Bank 2021). **Africa's continental accreditation cooperation through AFRAC provides a platform to further harmonise and scale accreditation for GHG validation and verification.** While some countries already offer accredited GHG-related services, including CORSIA accreditation through national bodies such as KENAS (KENAS 2026) in Kenya, broader coordination through AFRAC could strengthen mutual recognition and align training frameworks (AFRAC 2023; ACMI 2024). This could also reduce fragmentation, supporting regional aggregation of demand and more consistent market access across countries.

While institutional arrangements differ across other market countries, successful systems include formal recognition by national regulators, alignment with international accreditation standards and acceptance by major crediting programmes. This enables locally accredited VVBs to operate across domestic and international markets.

2.3. Carbon crediting programmes and workforce development

Demand generated under the Clean Development Mechanism (CDM) created the first large-scale global market for independent validation and verification services. This demand supported the emergence of a global auditing base, institutionalised through the network of DOEs, many of which later transitioned into independent programmes in the VCM. This is shaping today's concentration of VVB capacity (UNFCCC 2024). PACM now introduces more stringent accreditation standards and procedures, with early accreditations and CDM transitions and setting a common benchmark for competence, independence

and oversight (UNFCCC Accreditation 2025; A6IP 2025a). **Emerging market VVBs that align early with PACM requirements while meeting major VCM carbon crediting programmes' requirements are better positioned to serve multiple schemes in parallel** (Gold Standard 2025a; Verra 2023). In this way, **they can avoid being confined to niche sectors and expand their service portfolio across programmes.** In benchmark countries, accreditation requirements have driven structured competence development, ISO-aligned quality management systems and continuous learning, and integration of

auditors into broader carbon-services ecosystems, as in Brazil, India and Singapore (INMETRO 2016; Government of India 2024; Singapore Accreditation Council 2023).

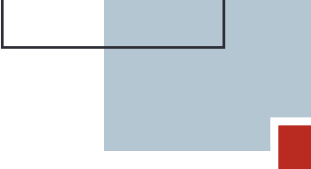
Stalled efforts share common features: weak or uncertain demand, limited funding for supervised audits and high attrition of trained auditors once projects end (World Bank 2022; GGGI et al. 2025). For Africa, the benchmarking identifies several transferable elements drawn from markets where VVB capacity has been developed sustainably. These include accreditation-linked competence requirements and supervised learning-by-doing within experienced VVBs, which have proven critical for translating training into accredited practice. Successful systems also rely on institutionalised training delivery. This has taken the form of regional training hubs and accredited online platforms recognised by accreditation bodies, complemented by the integration of VVB-related competencies into university and professional curricula. In Africa, these approaches could build on existing human-capital instruments supported through AFRAC (AFRAC 2023; Government of India 2024; World Bank 2023).



An aerial photograph of a river winding through a lush, green forest. The river is dark and narrow, contrasting with the vibrant green of the surrounding trees. The forest appears dense and healthy, with some areas showing lighter green, possibly indicating different tree species or a clearing. The overall scene is a natural, undisturbed landscape.

3

Analysis of Africa's carbon market and VVB landscape



Demand for African carbon credits is increasing at a rate exceeding global averages, yet supply remains highly concentrated across a limited number of countries and project types. Notably, while global demand declined by 22% between 2022 and 2023, African carbon markets recorded continued growth (ACMI 2024). Despite strong potential, the region's carbon credit market, representing about 11% of global issuance, has

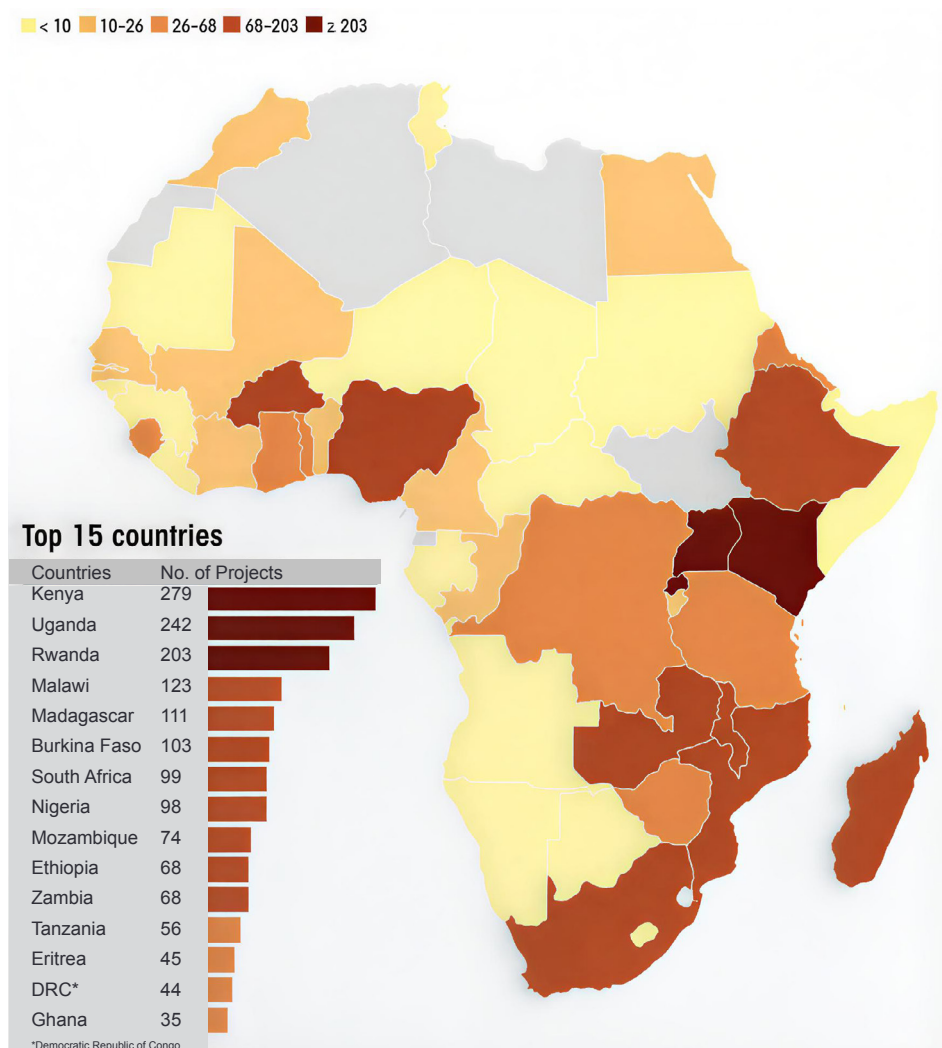
tapped only 2% of its maximum capacity (EEP Africa 2023). These market imbalances, combined with an acute shortage of locally accredited VVBs and auditors, pose critical bottlenecks. Addressing these capacity constraints is vital to unlocking Africa's untapped carbon market potential and should be a priority for funders seeking scalable, high-integrity climate finance outcomes.

3.1. Overview of Carbon Market Activity and Demand in Africa

Amid stagnating demand for carbon credits globally over the past few years, demand for African credits (measured through retirements) has shown an increasing trend (ACMI 2024). The overall transaction volumes in the VCM remained relatively stable, as prices rose, especially for forestry, land-use, and higher quality credits counterbalancing a decline in transaction volumes (Ecosystem Marketplace 2025). The African Carbon Markets Initiative (ACMI) (2024) observes an 11% increase in demand (measured through retirements) between 2022 and 2023, while global retirements declined over the same period. This demand is increasingly met by rising supply. In 2024, approximately one-fifth (20%) of all new projects listed across the world's top carbon market registries originated from Africa, marking a significant shift from historical trends where the continent accounted for only 3% of projects under the CDM (CSE India 2024). However, the overall share of African credits in carbon markets remains low, with a share of 16% in global carbon credit retirements originating from projects in Africa (ACMI 2024).

African participation in carbon markets remains highly concentrated and fragmented, with just five countries accounting for approximately 65% of total issued credits, led by Kenya with a 23% share, while many countries with substantial mitigation potential remain underrepresented (EEP Africa 2023). Africa's total technical potential for voluntary carbon markets is estimated at 2,400 MtCO₂e by 2030, with ambitions to retire up to 300 MtCO₂e of African credits annually by that date (ACMI 2024). Nevertheless, NDCs of African states increasingly prioritise international cooperation through Article 6, signalling political commitment to scaling Paris-aligned carbon markets.

Figure 1: Carbon projects registered or in the pipeline in Africa



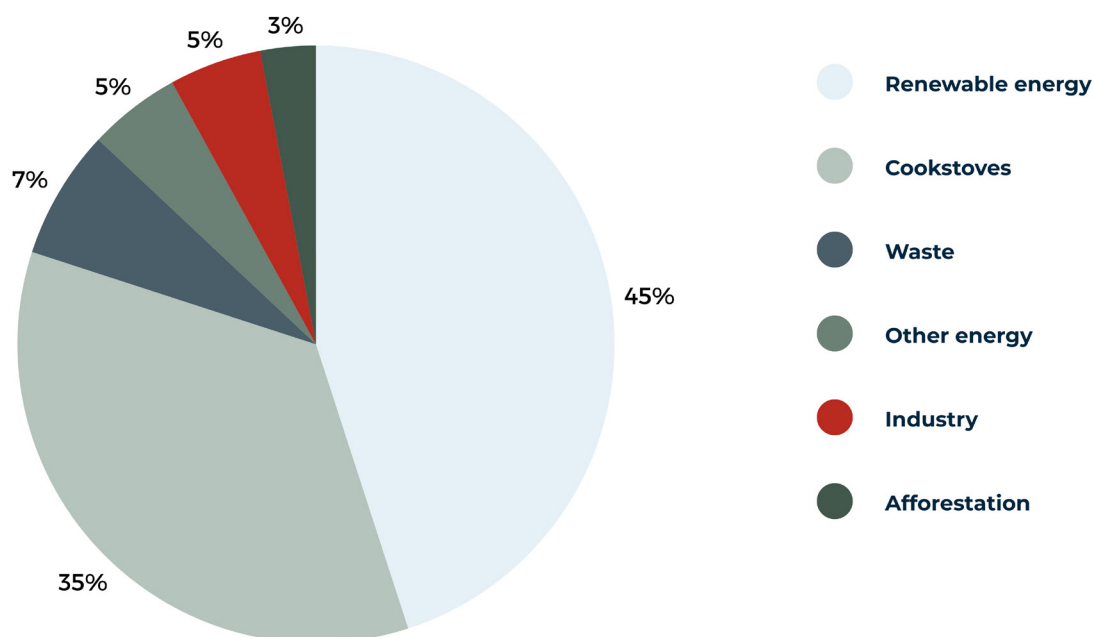
Source: CSE India 2024

Across independent carbon crediting programmes, cookstove and REDD+ projects account for approximately 90% of Africa's voluntary carbon credit supply (ACMI 2024; Hoch et al. 2023). Most carbon crediting activities in Africa are registered under the Gold Standard, with Verra's VCS playing a secondary role. Gold Standard dominates in East and Southern Africa (79%) and in West and Central Africa (65%), while VCS accounts for most of the remainder (IGES 2025).

Under the PACM, 1,389 Project Activities (PAs), 119 Programme of Activities (PoAs) with 954 Component Project Activities (CPAs)) have requested transition from the CDM, of which 110 have received host country approval as of January 2026 (UNFCCC 2026).² Africa's PACM portfolio is experiencing a rapid build-up and is expected to expand further ahead of the final deadline (June 2026) for approving the transition of CDM projects. This signals a near-term increase in demand for validation and verification services, particularly for CPA-level transitions under PoAs.

² As of January 2026, the Africa based host country approvals have been provided by Benin (2), Burkina Faso (3), Burundi (1), Egypt (1), Madagascar (3), Morocco (1), Chad (1), Togo (1), Ghana (2) and Uganda (13) (UNFCCC 2026)

Figure 2: Distribution of transition requests by activity types



Source: Authors, based on UNFCCC 2025a

While PACM is expected to drive the long-term demand for validation and verification services aligned with Article 6.4 requirements, sustained demand is also expected from CORSIA-eligible activities and high-integrity VCM pipelines, especially

in sectors such as cookstoves, AFOLU and waste. These demand streams draw on largely the same pool of qualified auditors and VVBs, meaning that capacity constraints will be cumulative.

3.2. National Regulation and Article 6 Readiness

Most African countries have initiated regulatory processes to enable participation in carbon markets under Article 6, including designation of national authorities and development of carbon market frameworks applicable to both voluntary and compliance use. While host country approval and authorisation frameworks are at various stages of development, many African countries still lack fully operational approval, authorisation, tracking and registry infrastructure remains a major bottleneck. As of 2025, only Ghana, Côte d'Ivoire and Zimbabwe operated national registries, with many others are

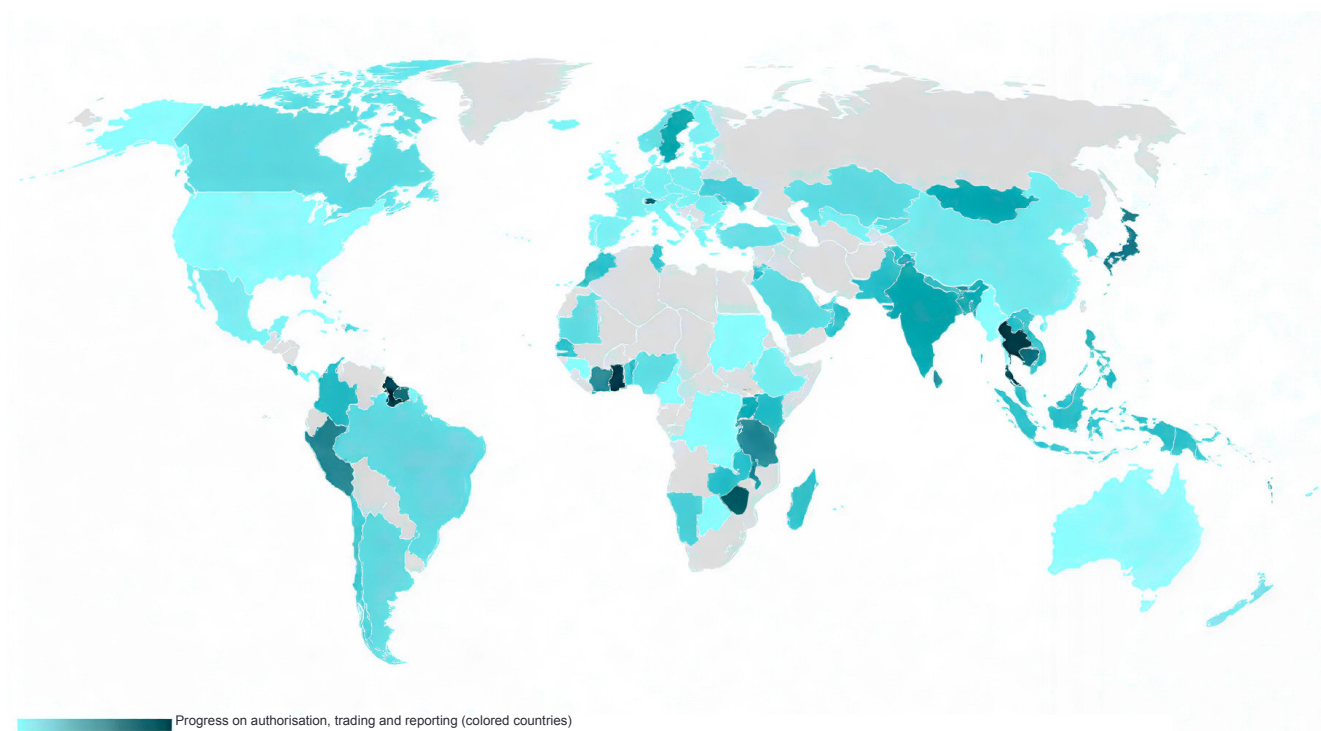
either in the process of developing one, cooperating with partners on registry systems or waiting for the Article 6.2 international registry to be implemented.

As of December 2025, 13 African countries have entered MoUs or bilateral cooperation agreements under Paris Agreement Article 6.2, reflecting growing international engagement in Africa's carbon markets. Switzerland, Singapore, Sweden, Norway and Japan are among the most active buyers, supporting or planning activities across clean cooking, renewable energy, waste management, e-mobility

and agriculture. Switzerland alone is implementing or planning 17 activities across Ghana, Senegal, Kenya, Malawi and Morocco (KliK 2025; FOEN 2025a). Singapore has signed MoUs with Kenya, Morocco, Senegal and Zambia, and implementation agreements with Ghana and Rwanda, while Sweden, Norway and Japan are pursuing or implementing

Article 6 activities in countries including Ghana, Kenya, Senegal, Benin and Ethiopia.³ In December 2025, 38 African countries had communicated an Article 6.4 Designated National Authority (DNA) whereof 14 have submitted the host country participation form, which is a precondition for any participation in the mechanism (UNFCCC 2025b).

Figure 3: Level of national progress on authorisation, tracking and reporting



Source: Adapted from IGES 2025

3.3. Global Market Context and Outlook

The uptake of CORSIA, signs of sovereign buyers using Article 6 for international compliance, as well as a recently relatively stable voluntary market – also due to efforts to restore integrity and confidence, lead to a positive outlook for global carbon credit demand, from which African carbon markets may benefit. CORSIA Phase 1 demand projections have

increased to 146–236 MtCO₂e up from 106 to 137 MtCO₂e, while international compliance demand could reach 65–100 MtCO₂e by 2030 (IETA 2025). Voluntary corporate demand remains uncertain in the near term but is expected to increase in the medium to long term, particularly among companies with science-based targets. In 2024, new interest

³ Government of Singapore 2025; Swedish Energy Agency 2025; A6IP 2025

was noted in nature-based carbon removal activities, reflecting the growing importance of removals in corporate net-zero targets. Regarding the corporate demand, substantial long-term demand for high-integrity carbon credits (4.5 GtCO₂e by 2030 and up to 14 GtCO₂e by 2050) to address residual emissions is expected (AlliedOffsets 2024). Africa is well positioned to benefit from this trend. Only around 2% of Africa's nature-based mitigation potential is currently harnessed through carbon markets (ICVCM 2025), despite high biodiversity and co-benefit potential. Beyond afforestation and avoided deforestation, opportunities exist in biochar, soil carbon and, in selected contexts, technological removals.

Beyond removals, high integrity carbon credits generated by household technologies – namely clean cooking solutions – are of high demand. The World Bank (2025) observed the first signs of a potential shift of the preferences of markets participants, potentially as a result of recent ICVCM decisions: The number of new renewable energy projects declined and new cookstoves projects largely used methodologies labelled as CCP-approved. Looking ahead, estimates suggest African carbon markets could reach up to 300 MtCO₂e of annual retirements by 2030, generating up to USD 6 billion per year (ACMI 2024), provided regulatory clarity, integrity and institutional capacity improve.

3.4. Africa's validation and verification landscape

Africa's validation and verification ecosystem remains underdeveloped relative to projected demand. AFRAC⁴ ensures that African accreditation systems meet international standards (AFRAC 2025). Currently, the regional accreditation authority specified that a total of eleven VVBs are expected to be accredited in the near term through national and regional accreditation bodies. To date, nine VVBs have been accredited through African national accreditation bodies.

Overall, there is a significant undersupply of VVB services accredited by the major carbon crediting programmes (Battocletti et al. 2024). The insufficient local verification and validation capacity including lack of African-based VVBs and local expertise is considered a key challenge that must be overcome to scale the VCM in Africa (ACMI 2023; FSD Kenya 2023). As of November 2025, from the 48 VVBs accredited by major VCM programmes (Gold

Standard, Plan Vivo, and Verra), only 19 maintain offices in Africa, and most are headquartered outside the continent (Plan Vivo 2025; Verra 2025; Gold Standard 2025b). *Please refer to Annex II for the list of approved VVBs with office locations in Africa.*

Stakeholder consultations nuance this picture by emphasising that the most binding constraint is not only the number of VVB firms, but the shortage of qualified auditors, lead verifiers and technical specialists available to staff audit teams. This shortage is global, but it is more constraining in Africa, where verification relies heavily on a small pool of internationally mobile experts and local training and progression pathways remain limited. Accreditation authorities and carbon crediting programmes warned that the rapid emergence of new VVB firms without strong accreditation, liability and quality-assurance systems risks undermining consistency. In Africa, these risks are compounded by the absence of

⁴ Government of Singapore 2025; Swedish Energy Agency 2025; A6IP 2025

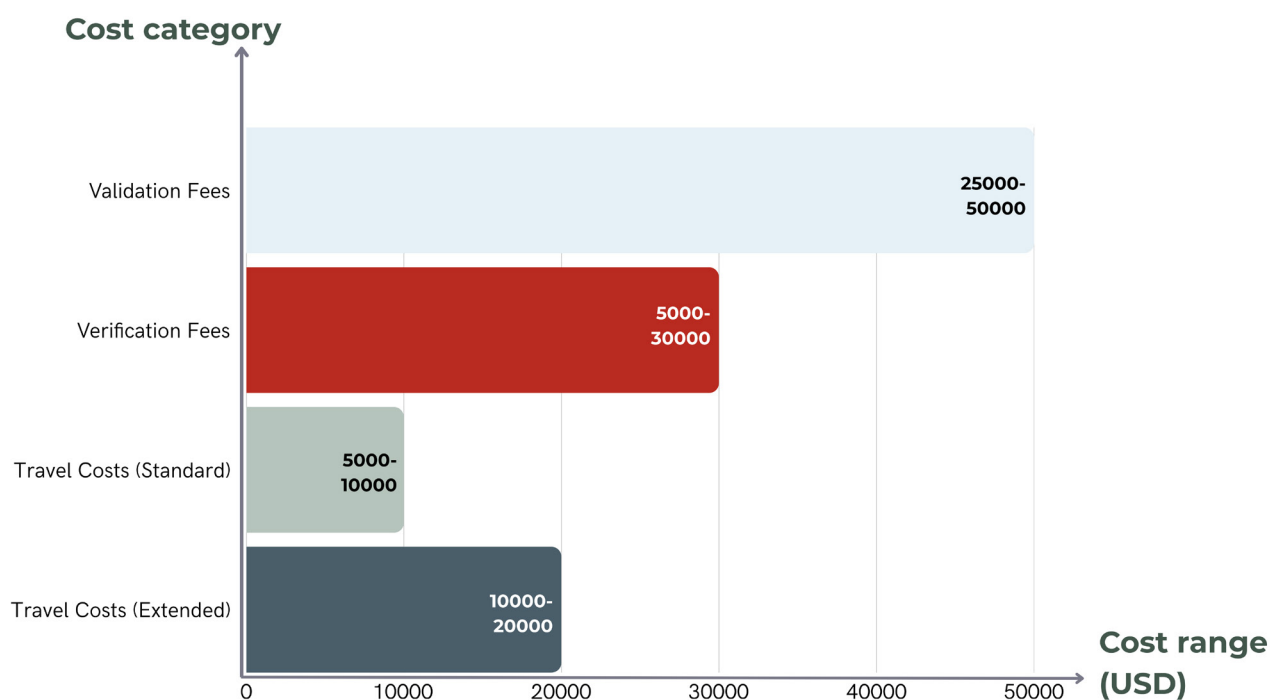
robust local auditor pipelines, increasing reliance on external capacity. Many respondents therefore see expanding local auditor pipelines linked to real project demand as the most effective near-term solution, with universities (notably engineering, environmental science, and accounting faculties) playing a key role over the medium to long term in building this capacity.

This reliance on international VVBs creates significant cost and time burdens. Studies consistently identify high fees and long lead times for validation and verification as major barriers to African project development (ACMI 2023; FSD Kenya 2023). Evidence from agricultural carbon projects shows that costs are dominated by implementation and compliance, with operating expenses accounting for around 70% of total costs and validation, monitoring, and verification accounting for a further 30% (NewClimate Institute 2025). These costs significantly reduce net revenues from credit sales, particularly at lower carbon prices, leaving only a limited residual share available for participating communities (NewClimate Institute 2025). While exact MRV figures vary sector-to-sector, project development costs covering baseline assessment, monitoring and verification can account for 50–80 % of total carbon project costs (Sylvera 2025).

Project developers broadly confirmed that VVB-related expenses represent a material share of total project costs.

Three developers estimated validation and verification costs at around **3–5%** of total project budgets, while others reported shares of **11–20%**, and in some cases even higher. Several developers also reported recent increases of **30–50%** in VVB quotes, reflecting tightening Article 6 and ICVCM requirements, growing methodological complexity and a shortage of available auditors.

Figure 4: Cost Range for African Project Validation and Verification



Source: Authors

Developers consistently expect cost savings from greater local participation in validation and verification. Estimates of the cost difference between international and local VVBs range from 10–25% to 25–50%, with one developer suggesting international VVBs can be more than 50% more expensive, largely due to travel, logistics and higher overheads.

Some sources (ACMI 2023, Odhiambo 2025) highlight that African carbon projects face long lead times from design to issuance due to high certification costs and limited local validation capacity; in Kenya, for example, only 38% of potential projects pass validation, with many stalling because of complex methodologies, high transaction costs, and weak technical capacity. Other analyses consistently find that validation and verification are slow and resource-intensive, delaying cash flow and weakening investor confidence - especially where Article 6 and

VCM rules are still evolving - though they offer no harmonised data on the scale of these delays (FSD Kenya 2023).

Delays are equally significant. Project developers reported average validation and verification timelines of roughly 4.5–5 months on African projects, with peak delays of up to nine months, while a buyer implementing Article 6.2 activities indicated that validation and verification can take up to six months. In contrast, most developers consider an ideal turnaround to be no more than 2–3 months, and in some cases as little as one month, depending on the complexity of the project and the procedural requirements. However, actual procedural timelines under major programmes such as VCS and Gold Standard are typically longer, often 6–12+ months for validation and periodic verification cycles thereafter, due to month-long public comment periods, detailed

documentation reviews, and audit requirements. Developers further estimate that between 10% and 50% of total project delays and cost overruns can be attributed to VVB-related constraints, and several noted that high fees or long waiting times have already led to the cancellation or postponement of planned African projects. Globally, verification-related delays linked to capacity shortages could impose up to USD 2.6 billion in additional costs by 2030 (Battocletti et al. 2024).

Under Article 6.2 cooperation, VVBs must often meet both buyer and host country accreditation requirements. According to the Ghana-Switzerland bilateral agreement, both countries must accredit the verifiers and make the information on accredited verifiers publicly available (FOEN 2025b; FOEN 2025c). As of October 2025, Switzerland counts 18 accredited VVBs covering a range of sectors (FOEN 2025b). Ghana's Carbon Market Framework specifies that the Carbon Market Office (CMO) will publish national modalities for accrediting independent entities responsible for validating and verifying mitigation activities generated under its Article 6.2 cooperative approaches; however, these have not yet been published as of January 2026 (CMO 2022). In the interim, the CMO accepts third-party auditors accredited under the CDM, Gold Standard, VCS, or ISO 14065.⁵ The only requirement already clearly established is that these auditors must appoint a local expert to the validation and verification team to support the assessment and stakeholder engagement processes (CMO 2022).

Stakeholders confirmed that Article 6 introduces additional complexity and cost compared to voluntary market projects. Buyers noted that validation requirements under Article 6.2 are more stringent, explaining the higher validation fees and longer timelines. At the same time, host countries such as Ghana explicitly prioritise local expertise to avoid language barriers and cultural misunderstandings and to build domestic capacity, and are actively developing sectoral rosters of experts. Buyers and carbon crediting programmes also stressed that African VVB and auditor capacities will need to expand into emerging areas such as green hydrogen, blue carbon and advanced agriculture, where Article 6 demand is expected to grow.

⁵ Ghana's Carbon Market Framework was adopted prior to the full operationalisation of the PACM



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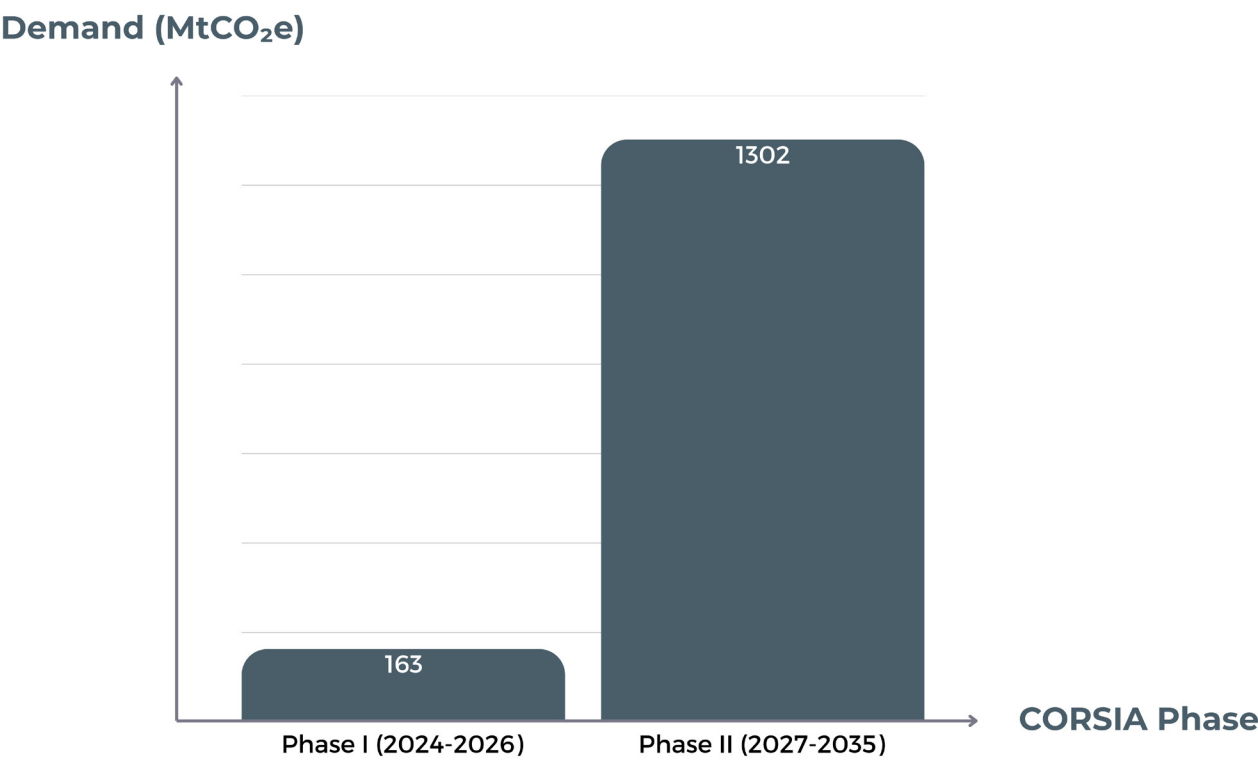
Demand & capacity gap assessment

4.1. Demand for validation and verification services in Africa

Compliance-linked markets are expected to be a primary driver of future carbon credit demand growth, with CORSIA providing the clearest near - to medium-term signal. Beyond aviation, demand could also scale materially through Article 6.2 cooperative approaches, with projections of 0.2–1.5 GtCO₂e by

2030 (with broader scenarios extending further). Realising this scale is expected to depend on country readiness, including the ability to operationalise registries, apply corresponding adjustments, and implement enabling domestic frameworks (CAP-A & ACMI 2025).

Figure 5: CORSIA demand and market value projections



Source: adapted from CAP-A & ACMI 2025

Across all stakeholder groups consulted, there is a clear and consistent expectation that demand for validation and verification services in Africa will increase substantially toward 2030. While

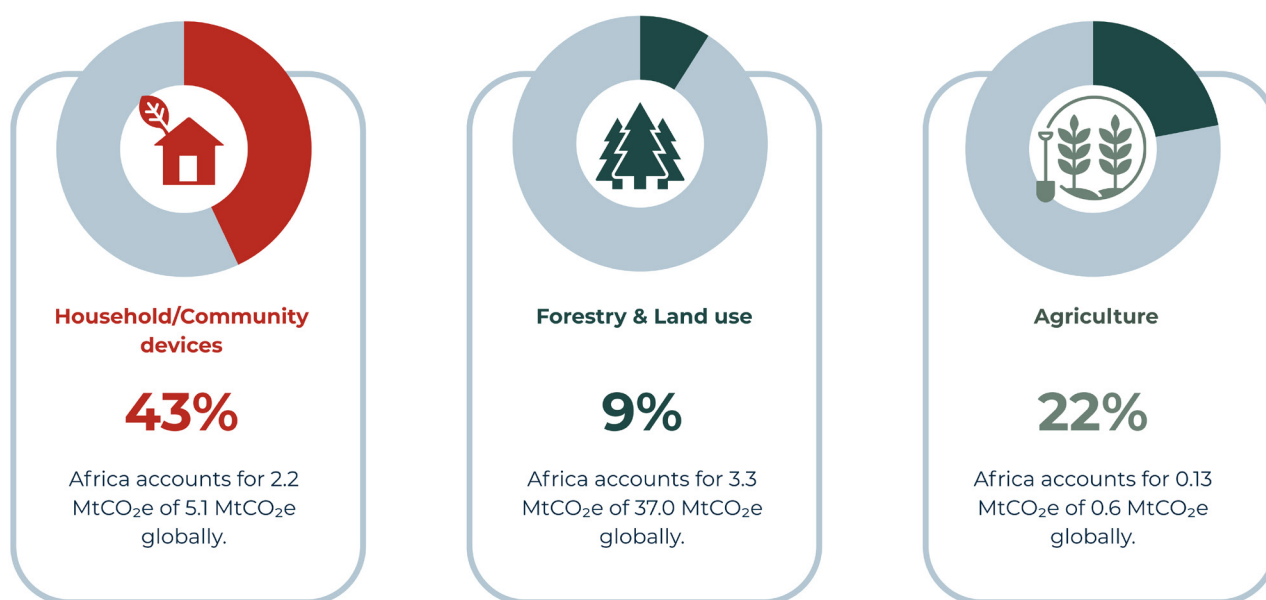
stakeholders diverge on the precise magnitude of this growth, ranging from more conservative projections of 10–25% to higher estimates of 25–50%, these figures must be interpreted in the

context of broader market trends. When combined with ACMI's projections of rapidly rising African credit issuance, the implication is not marginal growth in workload, but a several-fold increase in the number of validation and verification events required across the continent by the end of the decade (ACMI 2025).

This expected expansion in demand is closely tied to sectoral dynamics within Africa's carbon markets. Household energy activities, particularly clean cookstoves and biogas projects, remain a dominant

feature of African carbon credit supply. Africa is currently the largest global source of household-level activities within the voluntary carbon market (Ecosystem Marketplace 2025), and these project types also feature prominently in Africa's Article 6.2 cooperation portfolio as well as in the CDM transition pipeline. As a result, household energy is expected to continue generating sustained and high demand for VVB services, particularly given the frequency of verification cycles and the scale at which these activities operate.

Figure 6: Africa's traded volumes by project category (2024)



Source: adapted from Ecosystem Marketplace 2025

Nature-based mitigation activities represent a second major driver of future VVB demand. With an estimated 98% of Africa's nature-based removal potential still untapped (ICVCM 2025) and increasing prices for African forestry and land-use credits (Ecosystem Marketplace 2025), demand for high-integrity validation and verification in community-based projects and forestry and land-use sectors is expected to grow rapidly. At the same time,

interviewed VVBs consistently identified these sectors as among the most technically complex, citing challenges related to baseline setting, permanence, leakage, safeguards and monitoring requirements. The combination of high growth potential and high technical complexity places particular strain on existing verification capacity, especially given the limited availability of locally based experts.



Beyond household energy and land use, renewable energy projects are expected to continue generating verification demand in the near term, while transport-related activities, especially e-mobility, are widely seen as having stronger medium- to long-term growth potential. Agriculture and blue carbon

were repeatedly identified by VVBs as particularly capacity-constrained sectors, requiring specialised expertise that is currently scarce in African markets. Waste management and water and sanitation activities were also highlighted as emerging, though smaller-scale, sources of future demand.

4.2. Capacity gaps and their economic and operational impacts

Despite the rapid growth of carbon market activity, Africa's validation and verification capacity has not expanded at a comparable pace. Though limited, recent literature consistently highlights that African projects face structurally higher transaction costs due to the "high cost and long lead times for certification, validation and verification," a challenge directly linked to insufficient African-based VVB and MRV capacity (CAP-A & ACMI 2025). High upfront accreditation and re-accreditation costs, often in the range of USD 50,000 – 60,000 create a significant financial barrier for VVBs, limiting market entry, expansion, and the sustainability of locally based verification services. These costs are further compounded by fragmented governance systems and underdeveloped domestic MRV frameworks, which increase the volume of clarification, revision and iterative exchanges required between project developers, carbon crediting program bodies and international auditors. For smaller and community-based projects in particular, these elevated transaction costs can materially undermine financial viability.

Delays represent a second major impact of limited local VVB capacity. Stakeholders consulted cited verification and validation delays of between 2 to 9 months. Multiple studies describe extended validation and verification timelines as a primary constraint on Africa's ability to scale carbon markets. Both ACMI and FSD Kenya emphasise that long lead times, slow credit issuance, delay revenue flows and weaken investor confidence, particularly in contexts where developers rely on carbon revenues to service debt or unlock follow-on financing (FSD Kenya 2023; CAP-A & ACMI 2025). In practice, these delays can result in missed market windows, postponed project implementation or, in some cases, project cancellation.

4.3. Policy uncertainty, MRV weaknesses and institutional constraints

Insights from the stakeholder consultations underscore that the most binding constraint on scaling VVB capacity is not training alone, but the broader weakness of MRV systems and the lack of clear and consistent policy signals. While the development of technical skills remains essential, respondents emphasised that auditors and VVBs operate within national MRV and regulatory environments that are often unclear, incomplete or still evolving. In many African countries, uncertainty around authorisation procedures, corresponding adjustments, data requirements and institutional roles under Article 6 creates hesitation among developers and VVBs alike. Weak MRV infrastructure amplifies these challenges.

Inadequate data systems, limited availability of high-quality activity data and inconsistent reporting requirements increase the burden on verification teams and raise the risk of protracted review cycles. Even highly experienced international VVBs consulted reported difficulties operating efficiently in contexts where domestic MRV frameworks are underdeveloped, resulting in repeated requests for clarification and additional documentation causing verification delays. This not only increases verification costs by shifting the burden of extended QA/QC activities onto verification teams, but also reinforces reliance on international auditors with the scale and specialist capacity to manage these risks, further constraining the development of local VVB and auditor capacity.

National authorities themselves often face capacity limitations. Stakeholders noted that government counterparts responsible for reviewing methodologies, baselines, safeguards and Article

6 requirements frequently lack the technical depth required to assess complex projects. Additionally, with the increasing implementation of Article 6.2 cooperation in Africa, there is a growing trend for countries to require VVBs operating domestically to obtain country-specific accreditation in addition to accreditation under international schemes. This trend contributes to demand for country-specialised VVBs (or auditors) with a strong understanding of domestic contexts, including national regulations and priorities. On the other hand, the requirement for VVBs to obtain separate national accreditation (in addition to the international accreditation requirement), was noted to potentially hinder market growth.

These factors place sustained pressure on already limited local VVB capacity, while weak accreditation frameworks and inconsistent oversight amplify uncertainty for market participants and undermine confidence in verification processes.

From a demand perspective, these institutional bottlenecks weaken investment signals and reduce the predictability of project pipelines, which in turn discourages VVBs from investing in local presence or long-term staffing.

4.4. Skills, technology and structural capacity constraints

There is also a strong consensus across literature and stakeholders consulted that Africa's capacity gap is driven primarily by shortages of qualified personnel rather than by the absolute number of VVB entities. Building technical expertise through targeted hiring and skills development was consistently identified as the most critical lever for accelerating VVB capacity.

Importantly, these competencies must align with evolving regulatory requirements, particularly those emerging from the Article 6 rulebook.

Beyond technical carbon accounting skills, auditors are increasingly required to demonstrate competence in social safeguards, stakeholder engagement, health and safety, human rights assessments and Sustainable Development Goals (SDG) impact evaluation. These requirements are especially pronounced in community-based and nature-based projects, which dominate Africa's carbon market portfolio. As integrity expectations rise, the skill profile required of auditors continues to broaden, increasing pressure on an already limited talent pool.

Technological change further reshapes these capacity needs. Digital MRV tools such as remote sensing, mobile data collection and automated quality assurance systems offer significant potential to improve efficiency and reduce costs. Stakeholders cited potential efficiency gains of 30–60% in verification workflows, and several developers identified digital MRV as a promising means of reducing delays. Early digital MRV adoption is already emerging in Africa through practical pilots which are testing mobile and remote-sensing-

enabled workflows for field data capture, audit trails, safeguards/sustainable development (SD) monitoring, and verification readiness while also building local user capacity (GSMA 2025). However, uptake remains limited due to low market readiness, lack of awareness and slow approval of new tools within existing methodologies. As a result, digital MRV has not yet delivered system-wide relief to Africa's verification capacity constraints. Scaling will require dedicated investment to validate approaches across standards, embed them into formal VVB processes, and expand applicability, especially for dispersed, smallholder-heavy sectors.

A recurring constraint emerging from the literature and stakeholder consultations is that establishing an Africa-based VVB is capital intensive and front-loaded, while revenues are delayed and uncertain. Unlike advisory or project-development services that can generate fees early, VVBs typically realise income only once projects reach validation and verification milestones – often months after mobilisation and subject to issuance timelines and buyer/registry processes. This creates a structural mismatch: significant upfront investment is required to become operational and credible.

The evidence points to a widening mismatch between the pace of growth in Africa's carbon markets and the availability of robust validation and verification capacity. Demand for VVB services is rising across multiple sectors and geographies, driven by expanding Article 6 activity, increasing integrity requirements and a growing pipeline of projects.

Without addressing these structural barriers, Africa risks facing persistent bottlenecks in credit issuance, higher transaction costs and reduced competitiveness in high-integrity carbon markets.

The findings highlight that strengthening VVB capacity cannot be approached in isolation but must be understood as part of a broader ecosystem challenge encompassing policy clarity, MRV infrastructure, institutional capability and workforce development.

4.5. Interventions currently addressing the capacity gaps

The picture that emerges is of fast-growing carbon-market ambition constrained by uncertain demand, price volatility and a very thin layer of local validation and verification capacity, with a handful of promising national and regional initiatives starting to respond to the capacity gaps.

In Egypt, the EGAC has formally extended its accreditation scope to validation and verification “in the framework of market needs and Egyptian policy to make Egypt a regional voluntary carbon market”, explicitly covering claims related to greenhouse-gas emissions under ISO-based schemes (EAGC n.d.). In parallel, the Financial Regulatory Authority (FRA) approved three organisations (TÜV NORD Cert, TÜV NORD Egypt and Center of Organic Agriculture in Egypt (COAE)) as verification and certification bodies for carbon-emission-reduction projects, requiring them to hold ISO-based accreditation and formalising a national list of VVBs, while a new Carbon Credit Regulatory Committee sets criteria for VVB selection and broader carbon-credit oversight (Daily News Egypt 2024).

South Africa illustrates a second, more market-linked pipeline, centred on cooperation between an international standard and a national accreditation body. Verra and the South African National Accreditation System (SANAS) signed a memorandum of understanding in 2021 to create a domestic accreditation programme for VVBs under Verified Carbon Standard (VCS), explicitly because there were no VCS-approved auditors in-country and importing auditors had become costly as carbon-tax-driven domestic demand for carbon credits really grew (Verra 2021). As part of this pipeline, Verra organised the first VCS-specific training for potential South African VVBs, making programme-specific training an integral step toward accreditation and approval.

These early national efforts demonstrate that linking accreditation expansion to clear policy mandates accelerates early mover advantage.

The West African Alliance on Carbon Markets and Climate Finance (WAA) is developing a capacity-building initiative specifically focused on strengthening VVB capacity as a complement to its ongoing Article 6 readiness support. This initiative recognizes that effective participation in carbon markets requires not only robust regulatory and governance frameworks, but also sufficient local verification capacity to operationalise them. WAA's approach situates VVB capacity development within a holistic readiness framework, linking improvements in MRV systems, oversight functions and technical skills including assistance in developing host country accreditation standards for VVB in the context of Article 6.2 cooperation. By embedding VVB training within a broader regional capacity-building architecture, the Alliance aims to address critical

gaps in local verification capacity while supporting the integrity, credibility and scalability of carbon market activities across its member countries.

More recently, private actors are beginning to plug into these pipelines: for example, SGS obtained accreditation from the Indian National Accreditation Board for Certification Bodies (NABCB) to validate and verify greenhouse-gas projects and environmental claims under various ISO/IEC standards (SGS 2025a), and has subsequently been approved by Verra as a VVB under the VCS programme for a wide range of sectors, including AFOLU and carbon capture and storage. SGS cited having VVB operations in several African countries (e.g. South Africa, Mozambique, Zambia) (SGS 2025b).

The evidence suggests that current regional interventions are characterised by:



Option 1

A few national hubs where ISO-based accreditation and carbon-market regulation are being linked (EGAC/FRA, SANAS/Verra)

Option 2

Growing involvement from globally active VVBs that are securing both accreditation and programme approval to serve African projects (e.g. SGS, TÜV NORD),



Option 3

A lack of continental/regional coordination on training and accreditation standards.

The shift towards implementation in global carbon markets is beginning to show stronger demand for carbon credits, and consequently for VVB services. However, while compliance-related demand signals are emerging, overall market demand remains

uncertain, which continues to hold back regional VVB growth. This underscores the need for continuous tracking of regional initiatives to measure real capacity growth rather than project counts.



5 Evaluation of regional training and accreditation pipelines



Literature on African carbon markets increasingly points to regional training and accreditation pipelines, such as auditor academies or certification hubs, as both viable and strategically important (ACMI 2024). Analyses of current bottlenecks consistently highlight shortages of domestic technical expertise, fragmented accreditation frameworks and heavy reliance on foreign service providers, factors that a regional pipeline of qualified experts could directly address (FSD Kenya 2023). Recent assessments by ACMI (2024) and UNEP (2023) show that fewer than 20 African-based VVBs currently operate across major standards, compared to over 170 in Asia and more than 250 in Europe, signalling a clear structural deficit that reinforces the value of coordinated regional training systems.

Under “Action Programme 4”, ACMI framed scaling third-party verification as a cornerstone of Africa’s carbon market strategy: this proposed auditor training, sharing analysis on the business case for VVBs, supporting the creation of new local VVBs, and leveraging technology to speed MRV so existing auditors can cover more projects (ACMI 2024). This strategic framing is now being complemented by more concrete institutional pipelines in a few frontrunner countries. Ghana’s Carbon Market Office illustrates how national institutions can act as regional training nodes, having launched a five-part national masterclass on carbon markets that covers emissions accounting, project design, certification and registry operations, explicitly aimed at equipping Ghanaian experts and institutions with the skills needed to participate in carbon accreditation and trading processes and to maintain international credibility (GBN 2025).

From an economic perspective, regional hubs would enable targeted local training and accreditation of

VVBs and auditors, reducing travel and consultancy costs for developers and keeping more economic value in African economies. Country studies done, such as in Kenya, show that high certification, validation and verification costs significantly undermine project viability, especially for smaller, community-based activities (FSD Kenya 2023). By pooling resources and standardising curricula, regional academies could lower per-auditor training costs, expand local VVB companies and support specialised expertise (e.g. in forestry, agriculture or blue carbon), thereby improving cost-efficiency and competitiveness for projects across the continent (Pagop & Savard 2024). Especially if expertise is scarce at the national level, a regional focus can help balance out such shortages.

All carbon crediting programmes consulted strongly support the establishment of regional African training and accreditation hubs as a necessary foundation for aligning auditors with Paris-compliant requirements and ensuring consistent audit quality across countries. Gold Standard offers open trainings that are generally available to auditors, consultants and other stakeholders and are often published online rather than being restricted to a closed cohort. Additionally, Gold Standard has conducted national level trainings in Ghana with a list of local experts that the Ghanaian government approved for national level audits. For ongoing access to training resources, Gold Standard also maintains a YouTube channel offering quarterly VVB training sessions.⁶ Furthermore, Gold Standard provides a learning platform exclusively available to Gold Standard-approved VVBs. In contrast, Verra runs a more structured programme, providing quarterly trainings for all Verra-approved auditors and having organised country-specific training in South Africa in 2021 through a partnership with SANAS, the South African National Accreditation System. Verra also

6 GS4GG Webinars (GS4GG Webinars - YouTube)

noted that they have provided accreditation body training to 1-2 African accreditation bodies.

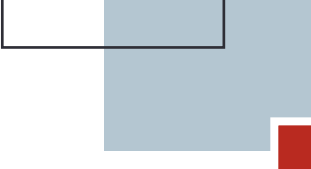
Related, regional approaches can explore collaboration with United Nations Framework Convention on Climate Change Regional Collaboration Centres (UNFCCC RCC) and Article 6 capacity building initiatives, as well as identify which auditing firms are already providing relevant technical audits e.g. for energy and infrastructure projects which are unrelated to carbon market but have generated technical auditing expertise that can be also utilized for carbon market services. Many DOEs have not specifically been created for carbon market services but have expanded their auditing business models once carbon markets emerged. Moreover, regional hubs enable VVB service providers to offer their services more easily across regional jurisdictions. Digitally enabled MRV training incorporating satellite analytics, AI-supported data verification and remote auditing protocols can further reduce per project verification time by 30–50% based on evidence from early pilot programmes in East and Southern Africa (World Bank 2022).

The social and institutional benefits are equally important. Recent political economy work on African carbon markets emphasises that without strong domestic capacity, countries risk having limited influence over standards, market rules, and benefit-sharing arrangements, weakening national ownership and long-term developmental outcomes (UNU IRS 2024). UNDP's capacity building tools for high-integrity carbon markets further underline the need for host countries to institutionalise training, safeguards and accreditation systems that work for their own policy instruments and finance mobilisation in support of NDCs and long-term strategies (UNDP 2025).

In terms of long-term market development and climate governance, regional training and accreditation hubs could help position Africa as a competitive supplier of high-integrity Article 6 and voluntary carbon credits by ensuring consistent quality, transparency and accountability across jurisdictions.

Standardised regional pipelines have the potential to support faster activity cycles through better availability of locally based experts, better responsiveness to evolving methodologies or buyer requirements, and more resilient MRV systems that reduce risks of double counting, greenwashing or external market capture (UNDP 2021).

However, robust governance is important to ensure sufficient independence of VVBs e.g., from governments or project developers that have an interest in maximizing the issuance of high-quality carbon credits. Key governance risks highlighted by OECD (2024) include conflicts of interest, political capture and inconsistencies in standard interpretation across borders; these can be mitigated through independent oversight boards, peer-review mechanisms and transparent performance reporting for accredited auditors. Overall, the literature and stakeholder consultations support the conclusion that investing in regional training and accreditation pipelines is both viable and high value: it offers economic gains through job creation and cost savings, social and institutional strengthening, and long-term resilience and integrity for Africa's carbon markets.



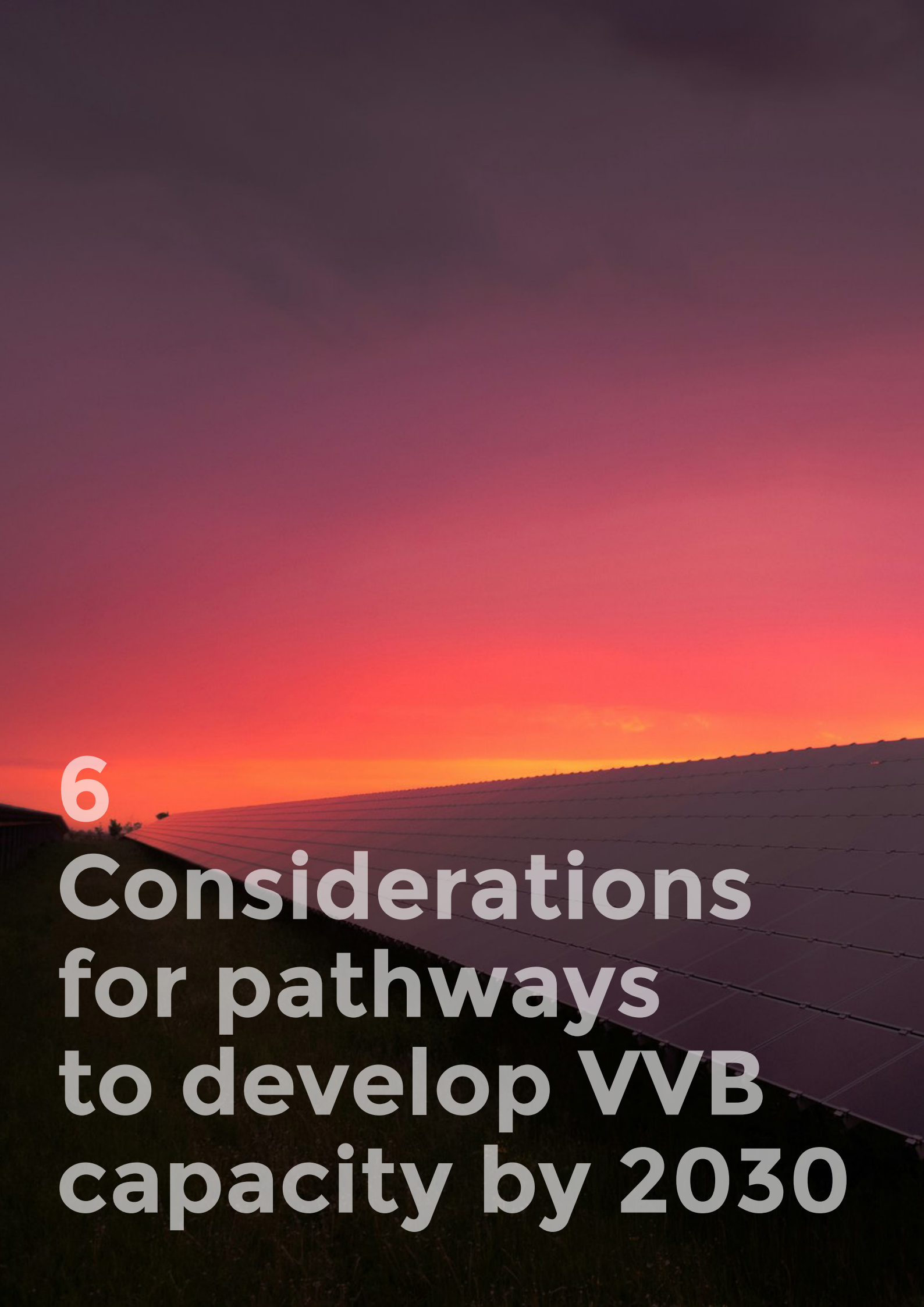
What's the way forward?

The assessment shows that regional training and accreditation pipelines are not merely complementary interventions but represent a structural precondition for Africa's carbon market to scale with integrity.

A critical cross-cutting lesson from the evidence is that training and accreditation initiatives for VVBs cannot be designed as isolated, programme-specific projects; they need to be deliberately harmonised so that efforts reinforce rather than duplicate each other.

Without coordination, there is a real risk that auditors are trained to different standards and templates for each scheme, that accreditation bodies set slightly divergent requirements, and that scarce African training and institutional capacity is spread too thinly across overlapping courses and frameworks.

A more efficient pathway to 2030 would see organizations such as ICVCM working closely with standard-setters, regional initiatives such as the carbon market alliances (EAA and WAA), national accreditation bodies and development partners to agree common core competencies (technical, safeguards and contextual), shared reference to ISO standards, and mutually recognised training modules that can be “stacked” across programmes. This kind of harmonisation would allow an auditor trained under a regional curriculum to be employable across multiple schemes; it would also give training institutions and regional accreditation bodies a clear blueprint for building pipelines of VVB personnel that serve the wider market, rather than a single standard. These conditions create strong incentives for regional collaboration to harmonise accreditation criteria, share auditor rosters, develop standardised curricula, and jointly strengthen quality assurance. Regional systems would also leverage key pressure points under Article 6 (authorisation, corresponding adjustments, bilateral readiness) and the VCM (ICVCM compliance, CCP-aligned QA requirements) to accelerate the professionalisation of auditor training and oversight. The focus should not only be on the existence of accreditation schemes, but on how well they are connected to carbon crediting programmes (Verra, Gold Standard, etc.), how accessible they are to African institutions, and whether they are producing a steady flow of Africa-based VVBs who can operate across multiple programmes by 2030.



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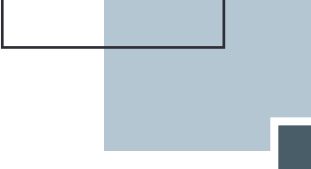
Considerations for pathways to develop VVB capacity by 2030

The preceding chapters have shown that Africa's carbon market potential will not be realised without stronger, more geographically balanced validation and verification capacity. Developing VVB capacity in Africa by 2030 requires a coordinated set of pathways that address institutional constraints, workforce shortages, accreditation gaps, and the need for scalable business models. **Evidence from the literature and stakeholder insights points to a system where demand for validation and verification is growing rapidly, yet the continent still relies on international VVBs and non-African auditors for more than 90% of verification activities.** This imbalance reflects both the scarcity of accredited African VVBs and the absence of structured training and accreditation pipelines that could expand the pool of qualified domestic auditors (CAP-A & ACMI 2025; IGES 2025).

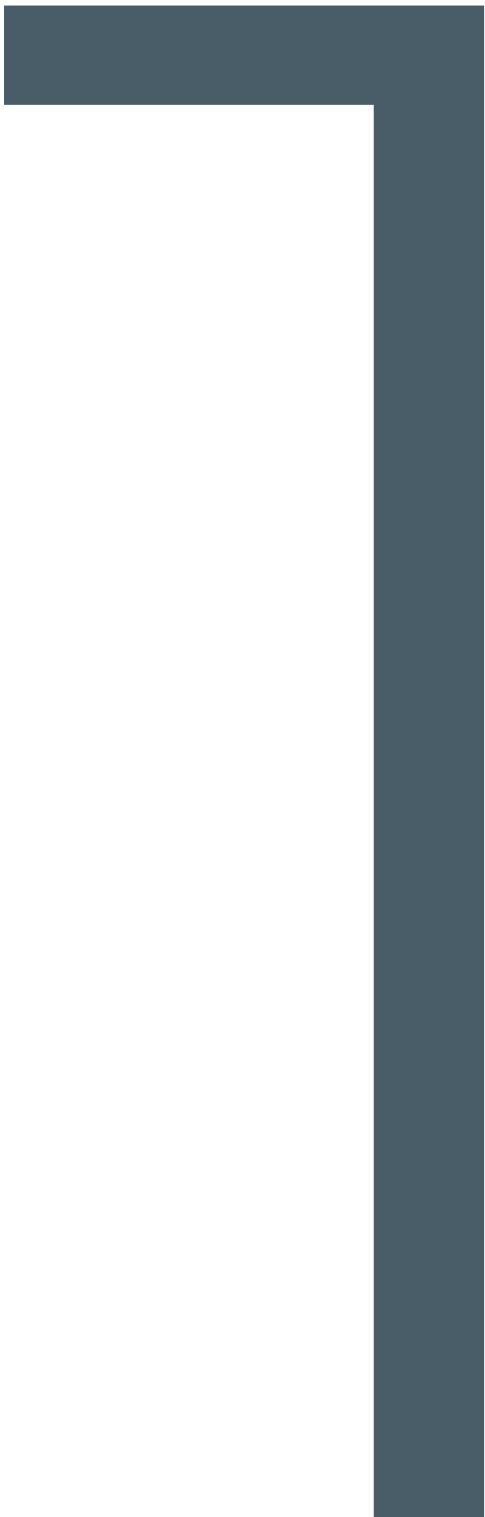
This chapter recommends that the proposed action points be implemented in close partnership with existing regional carbon market alliances that have already established enabling environments and maintain active engagement with their member countries. Working through these alliances would help avoid duplication of efforts, build on trusted institutional relationships, and ensure that interventions are aligned with national priorities and regional realities. Leveraging their existing coordination mechanisms, technical expertise and convening power would also enable more efficient allocation of resources, faster implementation, and greater coherence across capacity-building, policy and market-readiness initiatives. Without targeted interventions, rising Article 6 and voluntary market demand risks deepening these bottlenecks over the next decade.

Key considerations to develop VVB capacities in Africa include:

- 1 Strengthening institutional and governance frameworks and MRV functions
- 2 Strengthening accreditation frameworks
- 3 Structured training, certification and auditor progression pathways
- 4 Building auditor pipelines through regional training
- 5 Supporting sustainable and scalable VVB business models
- 6 Leveraging digital MRV to scale verification capacity
- 7 Advancing regional collaboration and knowledge exchange

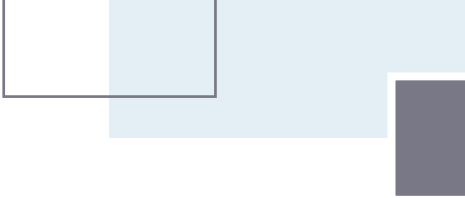


Strengthening institutional and governance frameworks and MRV functions



A cross-cutting requirement for developing VVB capacity by 2030 is the strengthening of institutional and governance frameworks that underpin credible, efficient MRV. Stakeholder consultations and the literature consistently point to weak or fragmented national carbon market rules, slow Article 6 implementation, and limited technical capacity within DNAs and government counterparts as major constraints on validation and verification performance (IGES 2025; CAP-A & ACMI 2025). Without clear authorisation procedures, defined institutional mandates, robust registries and reporting systems, and reliable data systems, VVBs, whether domestic or international, face higher transaction costs, longer timelines, and greater uncertainty in audit scoping and evidence requirements (FSD Kenya 2023; UNDP 2025).

Accordingly, strengthening MRV-related governance functions needs to be implemented before or in parallel with establishing regional VVB hubs and auditor pipelines. Training and accreditation hubs can expand the supply of auditors, but they cannot resolve bottlenecks caused by unclear host-country procedures, inconsistent rules, or limited oversight capacity. Early progress in countries such as Ghana and Egypt illustrates how national institutions can begin to formalise these enabling functions, through the development of national modalities, verification lists, and ISO-aligned accreditation scope expansions, thereby creating a more predictable operating environment for VVBs and improving readiness to absorb scaled verification capacity (CMO 2022; Daily News Egypt 2024; EAGC n.d.).



Strengthening accreditation frameworks



A critical pathway involves reinforcing national and regional accreditation systems, enabling African institutions to accredit VVBs in line with ISO 14065 and evolving Article 6.4 requirements. Emerging initiatives, such as Egypt's expansion of EGAC's mandate, Ghana's forthcoming national accreditation modalities, and SANAS' collaboration with Verra demonstrate that African accreditation bodies can play a central role in shaping a credible and continent-wide verification ecosystem (EAGC n.d.; FOEN 2025b; Verra 2021). However, the current landscape remains fragmented, with accreditation rules varying widely across countries. Stronger regional harmonisation, such as mutual recognition agreements among African accreditation bodies, would reduce duplicative accreditation requirements and support cross-border deployment of auditors (AFRAC 2025). By 2030, creating a coherent African accreditation architecture is foundational for scaling local VVBs and ensuring consistency in audit quality.

Structured training, certification and auditor progression pathways

To ensure scalable and high-integrity capacity development, **training and certification pathways should be tiered and competency-based, aligned with ISO 14065 requirements and other key standards and initiatives.**⁷

VVB accreditation requires documented quality systems, personnel competency, conflict-of-interest safeguards and compliance with international specifications for validation and verification development. Structured training can be delivered through regional classroom and field-based modules over a defined period, for example 4 – 6 days of intensive instruction complemented by supervised practical exposure. Existing market-based programmes, such as ISO 14064 Stage 1, 2 and 3 GHG Lead Verification and Validation training, provide a practical benchmark, covering organisational and project-level GHG accounting, validation and verification processes, audit techniques, reporting, and conformity assessment requirements (KBS 2026). Such courses are typically delivered online over 4 days and are priced at approximately USD 360 (excluding taxes), illustrating a relatively accessible and affordable entry point for building foundational auditor capacity in African contexts (KBS 2026).

Progression to senior and lead auditor status should be based on both documented field experience as well as classroom training, including participation in a defined number of independent audits across methodologies and sectors, supported by audit logbooks, peer reviews and internal competency assessments. Formal curricula should integrate both international technical standards (ISO 14064-2 and ISO 14064-3) and carbon programme-specific requirements under VCM programmes and Article 6 approaches, ensuring auditors can operate across diverse carbon crediting programmes and regulatory contexts.

⁷ These include the UNFCCC (PACM) accreditation standard, VCM carbon crediting programmes (e.g., Verra, Gold Standard, Plan Vivo, etc.), CORSIA and other Paris-aligned initiatives e.g., ICVCM's CCPs. Sustainable development and safeguards standards are becoming increasingly central to GHG validation and verification, with Article 6.4 requiring VVBs to assess and validate host-country sustainable development criteria aligned with the UN SDGs.

Building auditor pipelines through regional training

Workforce development is central to closing Africa's VVB gap. Multiple assessments highlight that shortages of trained auditors, not the number of VVB companies, is the primary constraint (ACMI 2024; CAP-A & ACMI 2025). Regional training hubs and auditor academies can offer standardised curricula, supervised logbooks, and sector-specific specialisations (e.g. forestry, agriculture, blue carbon), reducing onboarding time while dramatically expanding the pool of qualified professionals. Some initiatives identified as potential hubs to provide **hands-on, practical training** for African MRV practitioners and future VVB staff, including experience with **digital MRV tools and methodologies** include:

WAA initiative: WAA is developing a dedicated VVB training initiative as part of its broader Article 6 readiness support, with the aim of strengthening regional validation and verification capacity alongside regulatory and institutional development.

Stakeholder input: One stakeholder indicated that they are also exploring a capacitation partnership with the polytechnic division of a Senegalese university (Saint Louis University), positioning it as a potential regional training hub where African MRV practitioners and future VVB staff could gain hands-on experience with digital tools and methodologies through a formal training programme.

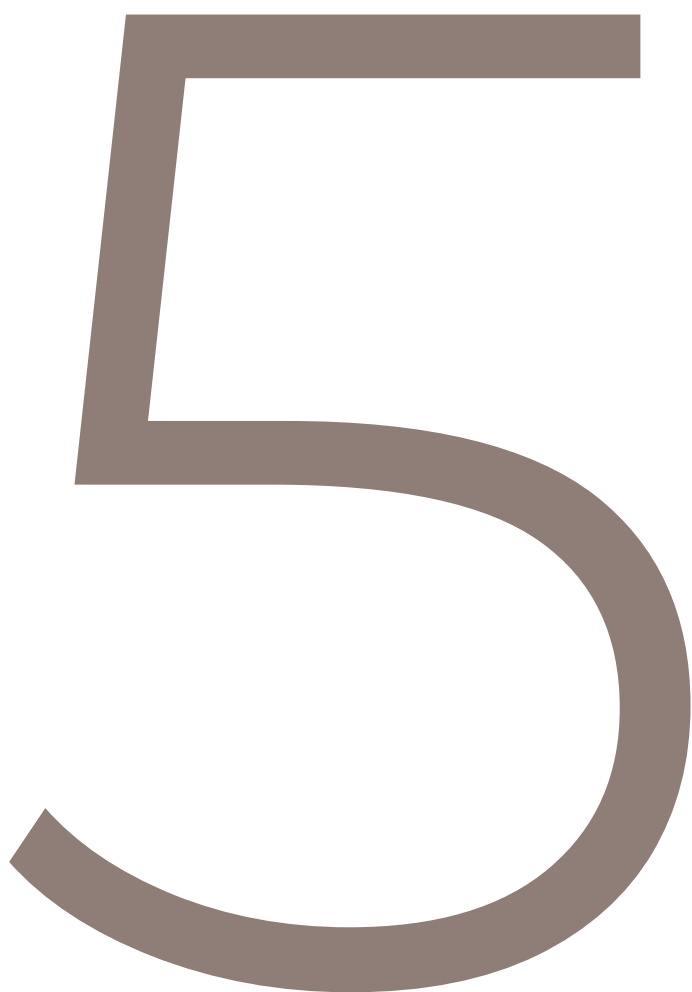
Anecdotal evidence (Kenya): Anecdotal evidence from the Kenya Civil Aviation Authority suggests a clear training-to-accreditation pathway: the Kenya National Accreditation Service (KENAS) provides CORSIA-focused auditor training that can feed into subsequent accreditation decisions, while cross-border recognition is supported through AFRAC's mutual recognition arrangements and the African Organisation for Standardisation (ARSO)'s continental conformity-assessment initiatives.

This will enable a shift towards hybrid training pathways that combine classroom instruction with real digital-MRV tooling environments, which could significantly accelerate Africa's readiness for emerging methodologies. This suggests that African VVB training and accreditation pipelines should not only build human skills, but also explicitly connect VVBs to digital MRV actors, with funding and partnership structures that lower adoption barriers and lock in these efficiency gains for the region. Similar models led by Ghana's Carbon Market Office and Egypt's EGAC demonstrate early national leadership, but regional platforms will be essential for achieving scale and supporting jurisdictions with thin domestic talent pools (GBN 2025; EAGC n.d.). By 2030, such hubs could form the backbone of Africa's VVB workforce, enabling countries to meet rising audit demand without relying on international deployment.

Supporting sustainable and scalable VVB business models

Economic viability remains a core barrier to establishing African VVBs. High accreditation and liability costs, combined with unpredictable project pipelines, make VVB operations financially challenging, especially for smaller firms or countries with low project density (FSD Kenya 2023; Pagop & Savard 2024).

Building on the demand analysis and institutional assessment, *three complementary VVB business models* emerge as viable pathways for scaling verification capacity in Africa by 2030:



i. **independent Africa-based VVBs** operating locally or nationally

ii. **regional hub-and-spoke VVBs⁸** serving multiple jurisdictions through pooled technical teams; and

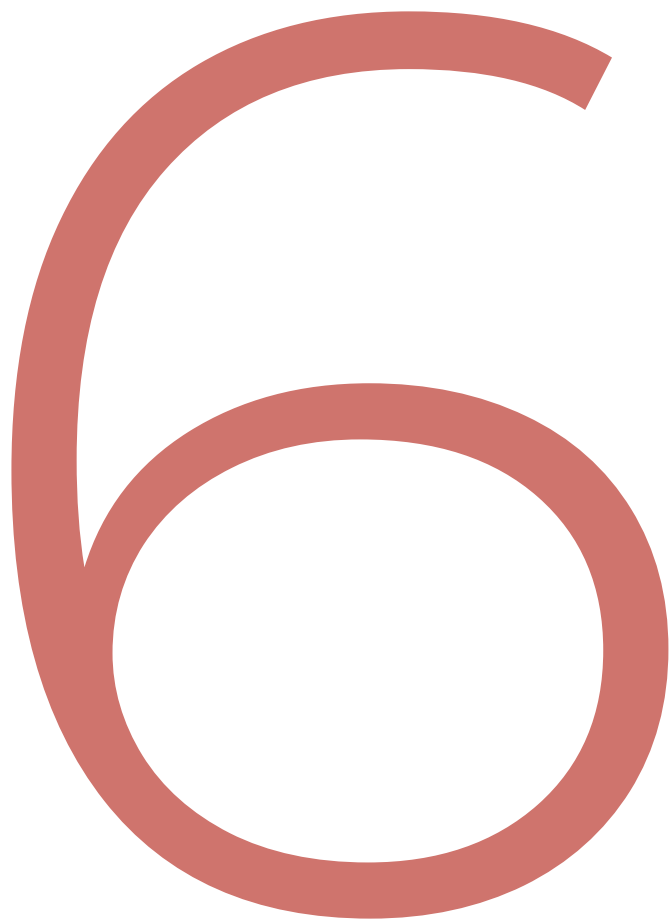
iii. **Africa-based auditors embedded within international VVBs** who leverage existing global accreditation and quality systems to deliver services rapidly.

Pathways to 2030 must therefore include an array of enabling financial instruments such as donor-funded accreditation support, results-based payments for completed audits, and/or facilities that provide short-term financing (such as revolving credit, advance payments, or concessional loans) that covers upfront operating costs, like staffing, accreditation fees, travel, and audit preparation, so organizations are not constrained by initial capital barriers. Regional hubs, for example could also reduce overhead by pooling specialist expertise that individual VVBs cannot afford to maintain in-house.

As carbon markets mature under Article 6, CORSIA, and high integrity VCMs, improved demand visibility may strengthen the long-term business case for African VVBs, but targeted incentives will be necessary to catalyse early entrants.

⁸ A regional hub-and-spoke VVBs refer to a model in which a central, regionally accredited VVB (hub) coordinates methodology oversight, quality assurance, and accreditation compliance, while locally based satellite teams or partner entities (spokes) conduct field audits and stakeholder engagement across multiple countries.

Leveraging digital MRV to scale verification capacity



Responses received indicate that regional training and accreditation pipelines for VVBs need to be designed with digital tools in mind from the outset. DMRV tools already exist for key functions, including mobile/field data capture, remote sensing for land-use change, emissions and removals quantification, sampling design, safeguards and SD monitoring, audit trails, and registry integration. These systems offer substantial opportunities to enhance audit efficiency, reduce costs, and expand coverage, especially in geographically dispersed African contexts. Early pilots suggest potential efficiency gains of 30–60% in audit workflows. Integration is already happening through active pilots with crediting programmes and VVBs, including work to digitalise methodologies and integrate workflows with platforms such as Verra's Project Hub, alongside registry/serialization integration and alignment efforts with broader dMRV guidance. However, the uptake is slowed by limited market readiness and awareness, and by slow procedural cycles needed to iterate, validate, and approve digital tools within existing crediting programmes/VVB assurance processes.

Mainstreaming and integrating these digital tools into regional training pipelines would ensure that new auditors are trained on digital methodologies from the outset, while reducing the burden on verification teams and improving data integrity. By 2030, digital MRV is likely to be indispensable for managing Africa's projected verification volumes, particularly in land-use sectors, where field-based verification is both costly and time-intensive.



Advancing regional collaboration and knowledge exchange

Current capacity gaps, manifested in fragmented national and international accreditation systems, dependence on foreign VVBs, rising audit costs and multi-month delays, reflect systemic weaknesses that individual countries cannot resolve alone. A regional approach offers economies of scale, standardisation of auditor competencies, and more efficient deployment of limited technical expertise across borders.



Moreover, aligning pipelines with Article 6 requirements and emerging national regulations would create a more predictable and interoperable validation and verification ecosystem, reducing transaction costs and strengthening regional value creation (jobs) and African ownership of MRV functions. Stakeholders further underscored that without harmonised regional standards, project developers face duplicative documentation demands across countries, contributing to higher VVB attrition and inconsistent audit quality.

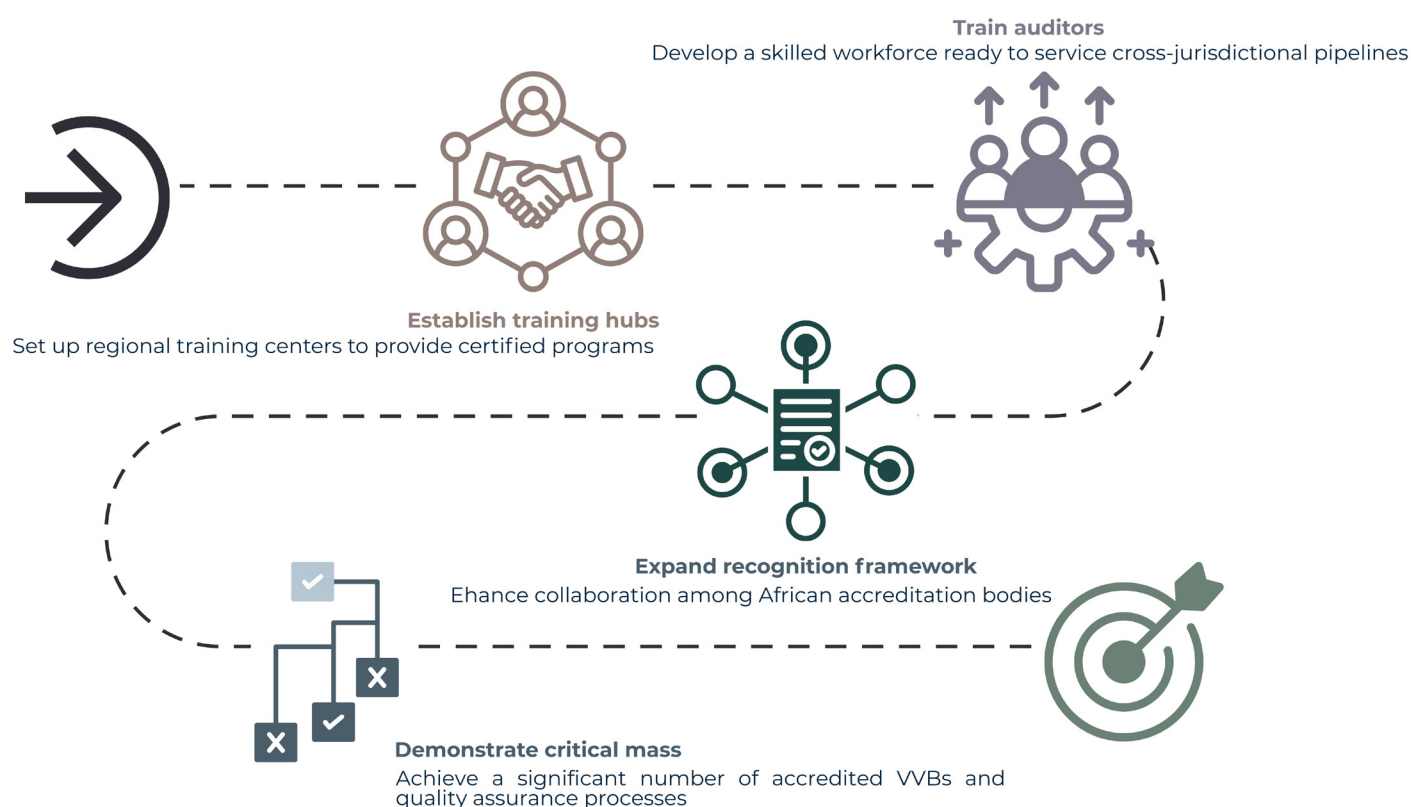
Thus, regional collaboration emerges as a necessary enabling condition across all pathways. Shared training infrastructure, harmonised accreditation processes, and coordinated databases of qualified experts would reduce fragmentation and support mobility of auditors across jurisdictions. Collaboration with UNFCCC RCCs and the carbon market alliances can also anchor long-term institutional capacity. The literature further highlights that without regional coordination, Africa risks entrenched disparities in capacity between early movers (e.g., Ghana, Kenya, South Africa) and countries with lower institutional readiness (UNDP 2025; UNU-IRS 2024). A regional approach ensures equitable access to high-integrity market participation and prevents the concentration of verification services in a few countries.

Implementation milestones, financing and inclusivity considerations

Implementation milestones should be sequenced logically to deliver measurable capacity outcomes by 2030. For example:



Figure 7: Roadmap to achieving VVB capacity outcomes by 2030



Source: adapted from Ecosystem Marketplace 2025

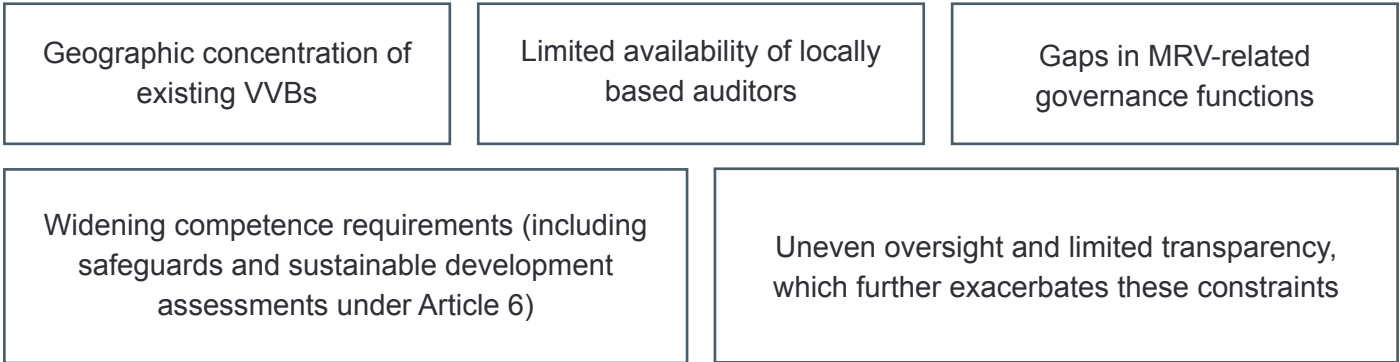
Sustainable financing models should blend early-stage donor support with longer-term self-sustaining mechanisms, such as partial reinvestment of carbon market levies or results-based remuneration models tied to completed verification milestones.

Using proceeds from carbon levies to fund verification capacity has precedent in broader environmental finance strategies and aligns incentives for ecosystem stewardship and market credibility while reducing dependency on short-term donor cycles.

Additionally, integration of carbon levy reinvestment into national climate strategies can help anchor stable funding for verification systems.

Inclusivity pathways must be embedded throughout, including targeted outreach and scholarships for women and under-represented groups in auditor training, multi-lingual materials and course delivery, and deliberate representation from least developed countries and smaller markets within regional hubs ensuring broad geographic and social participation in capacity building.

The pathways identified reflect both immediate needs and long-term ambitions. They show that the core problem is not only the limited number of accredited VVBs, but also:



Addressing these issues requires a system-wide approach in which institutional infrastructure (accreditation bodies and oversight systems), personnel skills (trained, multidisciplinary auditors), market design (demand signals and policy frameworks) and technology (digital MRV and data tools) are deliberately co-designed/ co-developed in parallel.

If implemented in a coordinated way, the proposed pathways would move the market from today’s concentrated, externally delivered verification model toward a more regionally grounded, multidisciplinary and technology-enabled VVB system that can credibly support African and global carbon-market growth by 2030.



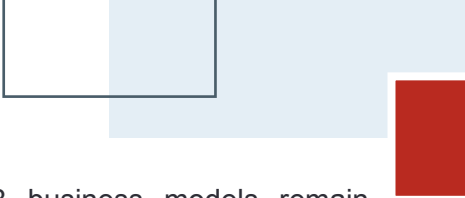
7 Conclusions

This assessment confirms that Africa is entering a phase of rapidly rising demand for validation and verification services, while starting from a very limited and fragmented capacity base. Existing local VVB and auditor capacity is insufficient to support projected growth from Article 6, CORSIA and high-integrity voluntary carbon markets. The resulting gap is already visible in higher transaction costs, prolonged validation and verification timelines, and continued dependence on international auditors, particularly in technically complex sectors. If left unaddressed, these constraints will slow credit issuance, weaken project viability, risk highly qualified regional employment opportunities and value creation, and undermine confidence in Africa's role in global mitigation efforts.

A central finding is that capacity constraints are not driven by training gaps alone, but by weak policy clarity and underdeveloped MRV and governance functions. Stakeholder consultations consistently highlight that unclear or evolving national carbon market rules, inconsistent Article 6 procedures, and limited technical capacity within DNAs create uncertainty for projects and VVBs alike. Weak domestic MRV systems increase audit complexity, lengthen review cycles and raise costs, even for experienced international VVBs. Without clearer policy signals on authorisation processes, corresponding adjustments and domestic oversight responsibilities, investments in local verification capacity will remain risky and demand for VVB services will remain volatile. This may improve in the medium term, once national carbon market frameworks, and NDC-based demand signals become more predictable after the comparatively recent finalisation of the A6 rulebook at COP29.

Comparative evidence from other emerging markets shows that durable VVB ecosystems emerge where governments provide clear, long-term policy direction on carbon markets, anchor assurance functions in ISO-aligned accreditation systems and invest in institutional MRV capacity alongside workforce development. Where these conditions are absent, training initiatives and ad hoc capacity building have produced only temporary or uneven results.

For Africa, this underscores that VVB capacity expansion must proceed in parallel with strengthening national MRV frameworks and policy coherence under Article 6 and voluntary markets.



An important consideration is the role of VVBs in assessing and validating SD claims and impacts, which is now a mandatory element of the Article 6 framework. This requirement elevates the importance of ensuring VVB capacity and coverage, not only for emissions accounting but also for credible SD outcomes. In this context, strengthening and enabling local VVBs can deliver clear benefits: local entities are often better positioned to interpret national priorities and regulatory frameworks, assess community-level impacts with greater nuance, and engage stakeholders in an accessible manner. Expanding the participation of capable local VVBs, alongside appropriate safeguards for consistency and integrity, can therefore improve both the quality and practicality of SD validation under Article 6.

Beyond easing operational bottlenecks, stronger local VVB capacity offers qualitative advantages. Africa-based auditors are better positioned to assess data quality, implementation realities and sustainable development impacts within the local context, including land tenure, community engagement, labour conditions and social safeguards. This is increasingly critical given Article 6 requirements to validate sustainable development claims alongside emissions outcomes. Capacity indicators should monitor not only the total number of VVBs and auditors, but also their geographic coverage, sectoral specialisation, and the proportion of audits led by Africa-based teams, enabling early detection of market concentration and emerging skills gaps. Local verification, under internationally recognised accreditation, can strengthen trust, improve integrity oversight and reinforce African ownership of MRV norms.

However, current VVB business models remain difficult to scale. High upfront costs for accreditation, quality assurance and experienced staff, combined with delayed revenue realisation and limited access to finance, constrain market entry. Financial institutions have little experience assessing VVB risk profiles, further limiting debt financing. Without improved demand visibility and targeted de-risking mechanisms, private investment in African-based VVBs is likely to remain cautious unless they are fully accredited with leading international crediting programmes such as PCM, GS, Verra and others. Digital MRV tools offer potential efficiency gains and can help address logistical constraints, but adoption remains uneven due to capacity gaps, regulatory uncertainty and slow approval cycles. Digital solutions should therefore be integrated gradually as part of broader MRV system strengthening, rather than treated as a standalone fix.

Any regional approach to strengthening VVB capacity should be embedded within the frameworks of existing regional carbon market alliances that are already providing substantial carbon market readiness support to their member countries. These Alliances such as WAA and the Eastern Africa Alliance (EAA) have established trusted relationships with governments and stakeholders and are actively supporting policy development, institutional strengthening, and Article 6 readiness. Anchoring VVB-related interventions within these platforms would help avoid duplication, ensure coherence with national priorities, and enable more efficient allocation of financial and technical resources.

Overall, the analysis shows that Africa has the technical talent and market potential to develop robust domestic VVB capacity, but realising this opportunity requires more than training alone. Clear policy signals, credible MRV systems, coordinated accreditation frameworks and targeted investment are all necessary to align demand with capacity. Strengthening these foundations can reduce costs and delays, improve integrity and enable Africa to participate in global carbon markets on more competitive and sovereign terms, while safeguarding environmental and social outcomes at scale. Focusing on strengthening and practical engagement of African VVBs in real world carbon market activities through initiatives that aim to provide technical assistance and address capacity gaps, including VCMI Access Strategies, regional carbon market alliances, GGGI's Carbon Transaction Platform, and the UNFCCC RCCs, all of which play a complementary role in strengthening institutional and technical readiness.

The upcoming COP32 in Ethiopia is likely to prominently feature carbon markets through the Action Agenda, where VCMI, GIZ and partners have an opportunity to showcase the salience of strengthening African VVBs through outreach and events that promote best practices.



8

Recommendations

This report finds that the gap between rapidly growing demand for validation and verification services in Africa and the continent's current capacity is structural, not temporary.

Addressing this gap by 2030 requires coordinated action across policy, institutions, workforce development, and financing. The following recommendations synthesise the report's findings and highlight key stakeholders best placed to take them forward:

1 Anchor VVB capacity development in clear policy and MRV frameworks

2 Scale capacity first through Africa-based auditors, then through African VVB institutions

3 Establish a regional, harmonised VVB accreditation and training pathway to 2030

4 Improve the financial viability of VVB operations through targeted de-risking

5 Integrate digital MRV tools and inclusivity as cross-cutting enablers

1. Anchor VVB capacity development in clear policy and MRV frameworks.



Who

African national governments, and line ministries responsible for setting clear policy signals on the role of carbon markets, defining Article 6 participation rules, authorisation procedures, corresponding adjustments, and embedding MRV requirements in national legislation and regulations; National MRV institutions and statistical agencies to anchor technical MRV functions, including data standards, reporting systems, registries, and interfaces with Article 6 infrastructure.

Key supporting actors

National and regional accreditation bodies (e.g., KENAS, AFRAC), international support and/or technical assistance partners (e.g., UNFCCC RCCs, GGGI)



Chapter 3 and Chapter 4 of the report find that the most binding constraint on sustainable VVB capacity development in Africa is not only a lack of technical training, but also largely weak policy clarity and underdeveloped MRV and governance frameworks. Unclear Article 6 authorisation processes, evolving corresponding adjustment rules, and fragmented institutional responsibilities increase uncertainty for both projects and VVBs, raising costs and discouraging long-term investment in local verification capacity. The report therefore recommends that African governments prioritise policy clarity and MRV system strengthening within national carbon market frameworks and regulations as a foundational condition for scaling VVB capacity.

The key actions recommended to take are:

- i Clarify national rules on Article 6 participation, authorisation, and corresponding adjustments.
- ii Align national MRV systems with international requirements under PA Article 6, 13, and recognised voluntary standards.
- iii Define the formal role of VVBs within national MRV and carbon market governance structures and associated regulations (e.g. licensing requirements, fee structures).
- iv Strengthen the technical capacity of DNAs and relevant ministries to oversee methodologies, safeguards, and audit quality based on trainings as well as engagement in real world carbon market activities.

2. Scale capacity first through Africa-based auditors, then through African VVB institutions.



Who

Accreditation/oversight bodies and national governments own the enabling conditions; while VVBs and training institutions own operationalisation of auditor scaling; buyer and donors de-risk investments; international support and/or technical assistance partners provide analytical support; and market initiatives (e.g., EAA, WAA, ACMI, ICVCM) typically catalyse with coordination and share best practices

Chapter 4 and Chapter 6 find that expanding the pool of Africa-based auditors, including those employed by international VVBs, is the fastest and most feasible pathway to meet near-term demand. Establishing new Africa-based VVB institutions remains an important medium-term objective, but requires predictable demand, accreditation readiness, and financial de-risking. A phased approach that prioritises Africa-based auditors while gradually strengthening domestic VVB institutions offers the most realistic path to scale.

The key actions recommended to take are:

- i Establishing baseline requirements (e.g., Ghana's approach, where VVBs are required to include local auditors in audit teams), complemented by incentives that encourage VVBs to go beyond minimum compliance
- ii Incentivise international VVBs to expand permanent Africa-based audit teams by:
 - Offering financial and risk-sharing incentives (e.g. subsidised accreditation costs, start-up grants, working-capital support, or results-based payments per audit completed in Africa).
 - Reducing administrative barriers by recognising regional or mutual accreditation arrangements, lowering the cost of operating across multiple countries.
 - Providing demand visibility through forward pipelines of Article 6 and VCM activities so VVBs can justify long-term staffing decisions.
- iii Promote co-auditing and mentorship arrangements to accelerate progression to lead auditor roles by:
 - Requiring or encouraging joint audit teams pairing senior international auditors with Africa-based auditors.
 - Formalising mentorship pathways (e.g. supervised logbooks, shadow audits, structured progression criteria).
 - Recognising co-auditing experience toward lead auditor qualification under accreditation and programme rules.

The key actions continued:

- iv Use Africa-based auditor deployment as a foundation for longer-term institutional development by:
 - Transitioning from reliance on individual auditors to stable regional or national audit teams.
 - Encouraging Africa-based auditors to move into managerial, QA/QC and technical decision-making roles.
 - Gradually supporting the spin-off or localisation of VVB entities, where demand and governance conditions allow.
- v Encourage host countries and cooperation partners to require local auditor participation where feasible by:
 - Including local auditor participation requirements in Article 6 authorisation procedures, validation guidelines or approval conditions.
 - Defining “local participation” flexibly (e.g. minimum share of audit days, mandatory inclusion of local experts).
 - Pairing requirements with capacity-building support to avoid excluding projects in low-capacity contexts.
- vi Further assess the potential of local content requirements for VVB services in bilateral A6 cooperation, as well as domestic carbon markets in Africa by:
 - Conducting policy and market assessments to identify where local content requirements are viable without undermining integrity or efficiency.
 - Evaluating impacts on costs, timelines, audit quality and market access before scaling.

3. Establish a regional, harmonised VVB accreditation and training pathway to 2030.



Who

Regional accreditation bodies to lead the regional harmonisation agenda; National accreditation bodies (e.g., SANAS, EGAC, KENAS, Ghana Accreditation Service) to own implementation at the country level

Key supporting actors

Regional market initiatives and technical assistance partners (e.g., Regional Alliances, VCMI Access strategies, GGGI, UNFCCC RCC) to coordinate and accelerate execution; and donors to de-risk early implementation



Chapter 4 and Chapter 5 show that fragmented, project-based training initiatives are unlikely to deliver sustained capacity. Instead, regionally coordinated training and certification pipelines, aligned with accreditation requirements and linked to real audit demand, are essential. Equally important is addressing auditor retention and career progression, as many trained auditors exit African markets due to volatile demand and limited advancement opportunities.

The key actions recommended to take are:

- i Embed VVB capacity development within existing regional carbon market alliance engagement and agenda.
- ii Establish regional training hubs or Auditor Academies focused on priority sectors and methodologies through sustained collaboration among partners including VCMI, ICVCM, accredited training centres, AFRAC, and other relevant institutions.
- iii Develop mutually recognised, “stackable” training modules and shared auditor rosters so that auditors trained under a regional curriculum can operate across multiple programs and standards (e.g., ISO, Verra, Gold Standard, Article 6, etc.).
- iv Link training to supervised audits, mentorship, and predictable demand.
- v Track auditor retention and progression as core performance indicators.

By convening ICVCM, carbon crediting standards, regional carbon market alliances, national accreditation bodies and development partners, stakeholders can agree on a shared set of core competencies – covering technical skills, safeguards and contextual knowledge; and where possible, with relevant ISO standards. The focus should be on interoperability and quality assurance that ensures accreditation systems are connected to market standards and produce a steady flow of qualified, deployable auditors by 2030.

4. Improve the financial viability of VVB operations through targeted de-risking.



Who

Development partners and donor agencies (e.g., multilateral development banks, climate finance facilities) to design and capitalise de-risking instruments; Buyer governments and cooperation partners under Article 6 to de-risk investments

Chapter 6 and Chapter 7 conclude that current VVB business models in Africa face structural financial barriers, including high upfront accreditation costs, delayed revenue realisation, and limited access to finance. Without targeted de-risking, private investment in Africa-based VVB capacity is likely to remain constrained despite growing demand. Financial support should therefore focus on reducing early-stage risks while incentivising performance and quality. This can be embedded in particular in bilateral cooperation on Article 6 but should also explore how to best de-risk private sector-driven activity development.

The key actions recommended to take are:

- i Provide donor-backed or blended-finance support for accreditation, quality assurance, and liability coverage.
- ii Establish financial facilities that provide short term funding tailored to VVB operational needs
- iii Explore sustainable funding mechanisms such as levy reinvestment or fee-based models.
- iv (For buyer governments) Support de-risking by funding accreditation support, recognising local VVBs in procurement frameworks, or incorporating local-content or co-auditing requirements that create predictable demand.

5. Integrate digital MRV tools and inclusivity as cross-cutting enablers.



Who

Carbon crediting programmes to encourage and approve/recognise dMRV approaches in methodologies and audit guidance; National regulators / Article 6 institutions to embed dMRV and inclusivity requirements in national procedures and VVBs (and prospective African VVB entrants) to operationalise dMRV in audit workflows.

Key supporting actors

dMRV/tech providers to provide tools and capacity support to VVBs and project developers; Development partners/donors (incl. cooperation partners in Article 6.2) to fund pilots, and de-risk early adoption; Training providers / professional institutes to provide dMRV training



Chapters 3, 4, and 5 find that digital MRV tools can improve efficiency and reduce logistical constraints, but only when embedded in robust institutional frameworks and capacitated personnel. Evidence presented above indicates that the core digital MRV toolset already exists and are already being piloted. Early pilots suggest potential efficiency gains of 30–60% in audit workflows. However, dedicated funding and focused workstreams are still required to adapt tools to African operating contexts, validate performance and uncertainty, and mainstream adoption within standards-approved, VVB-led verification processes, particularly for smallholder-dominated sectors.

Similarly, inclusivity (including gender balance and regional representation) is essential for the legitimacy, resilience, and sustainability of VVB ecosystems. Both should be treated as cross-cutting enablers rather than standalone objectives.

The key actions recommended to take are:

- i Build practical dMRV and safeguards modules into auditor training.
- ii Pilot hybrid audit models combining digital MRV tools with targeted field verification.
- iii Build regulatory and VVB familiarity with digital tools to accelerate approval and uptake.
- iv Integrate digital readiness and inclusivity indicators into MRV and capacity-building programmes.
- v Promote equitable access to training and certification across regions and demographics.



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Annex I: Glossary of terms

Accreditation Authorities are national or regional bodies that accredit validation and verification bodies (VVBs) against standards such as ISO/IEC 17029 and ISO 14065 for greenhouse- gas (GHG) validation and verification (UKAS n.d.). They provide the formal recognition that a VVB is competent to validate and verify carbon projects and GHG statements that underpin carbon credits.

Auditors are **technical experts employed or contracted by VVBs** carrying out validation and verification of carbon projects. They review project design, data, monitoring plans and calculations to confirm that emission reductions or removals meet the rules of a carbon-crediting programme. They must satisfy the ISO 14066 competency requirements for GHG validation and verification teams (Verra n.d.).

Under Article 6.2 of the Paris Agreement, “**buyers**” are countries or authorised public/private entities that purchase Internationally Transferred Mitigation Outcomes (ITMOs) from a host country through cooperative approaches and use them toward their Nationally Determined Contributions (NDCs).

Carbon crediting programmes are entities that set rules (procedures, guidelines, methodologies) for activities that reduce or remove GHG emissions, allowing them to issue carbon credits into their own registries that issue carbon credits for eligible mitigation activities in voluntary or compliance markets.

Digital MRV (digital Measurement, Reporting and Verification) / technology actors are firms or platforms that use digital tools such as remote sensing, satellite imagery, Internet of Things (IoT) devices, artificial intelligence (AI) and data platforms—to automate and improve MRV for carbon projects (World Bank 2022).

A Designated Operational Entity (DOE) is an **independent entity** accredited by the Supervisory Body of the Article 6.4 mechanism (previously: Clean Development Mechanism Executive Board), as qualified to perform validation and/or verification/certification functions (UNFCCC n.d.).

Donors are bilateral agencies, multilateral funds and philanthropic organisations that finance readiness, capacity building and infrastructure for carbon markets – rather than (or in addition to) buying credits.

Governments (national or sub-national) are **public authorities that regulate and participate in carbon markets**. They set climate policy and NDCs, establish legal frameworks for voluntary markets and Article 6, authorise project activities and ITMO transfers, and often designate or recognise accreditation bodies and VVBs.

Market initiatives are coalitions of carbon market actors, can be governments or initiatives, that set best-practice frameworks, integrity principles or codes of conduct. Activities can include analysing market design, integrity risks, legal frameworks and governance, and publishing recommendations for example, on additionality, human rights, greenwashing or Article 6 rules, etc.

Project developers are the entities that design, implement and manage carbon projects which generate credits – such as reforestation, clean cookstoves, renewable energy or industrial efficiency. In the voluntary carbon market, they “orchestrate the projects that actively remove, reduce, or avoid emissions”, mobilise finance and work with standards and VVBs to supply credits to market

VVBs are independent, third-party organisations accredited by specific Accreditation Authorities and approved or accredited under a carbon crediting programme to validate mitigation activities against the programme’s rules and its methodologies and verify emission reductions or removals (SustainCert 2023).



Annex II: List of approved VVBs with offices in Africa

VVB	Approved for VVB services by	African office location
AENOR Confia S.A. (Unipersonal)	Gold Standard, Plan Vivo, Verra	Morocco, South Africa
Applus+ Certification (LGAI Technological Center, S.A.)	Gold Standard	Algeria, Angola, Morocco, Mozambique, Nigeria, South Africa
BM Certification	Gold Standard, Verra	Egypt
Bureau Veritas India Private Limited	Gold Standard, Verra	Algeria, Angola, Central African Republic, Congo Republic Democratic, Egypt, Equatorial Guinea, Ethiopia, Ghana, Ivory Coast, Kenya, Madagascar, Morocco, Mozambique, Nigeria, Senegal, Zambia
Carbon Check	Gold Standard, Plan Vivo	South Africa
Control Union	Plan Vivo	Kenya, Rwanda, Morocco, South Africa
China Classification Society Certification Co. Ltd. (CCSC)	Gold Standard	Egypt, Ghana, Guinea, South Africa
DNV Business Assurance India Pvt Ltd.	Verra	Egypt, Ghana, Nigeria, South Africa
ERM Certification and Verification Services Limited	Verra	Kenya, Mozambique, South Africa
GHD	Plan Vivo	South Africa
NOVA CERT, LLC	Gold Standard	Kenya
Preferred by Nature OÜ	Plan Vivo, Verra	Ivory Coast and Ghana
Rina	Verra , Gold Standard	Angola, Egypt, Morocco, Mozambique, Republic of the Congo, South Africa, Ivory Coast
SCS Global Services	Verra	Ivory Coast
SGS India Private Limited	Verra	Algeria, Egypt, Ethiopia, Ghana, Ivory Coast, Kenya, Mozambique, Nigeria, South Africa, Tanzania, Togo
TÜV Nord	Gold Standard	Egypt, South Africa
TÜV Rheinland Energy & Environment GmbH	Verra	South Africa, Tanzania, Uganda, Egypt, Morocco
TÜV SÜD America Inc.	Gold Standard, Verra	Egypt and South Africa
TÜV SÜD South Asia Private Limited	Gold Standard, Verra	Egypt and South Africa



Annex III: Risk management strategy and monitoring and evaluation (M&E) considerations

This risk and mitigation strategies presented below is derived from the literature review and cross-stakeholder consultations and is structured around five core risk domains: institutional and governance, financial, operational, market and demand, and technological risks. Together, these risks define the principal constraints to scaling high-integrity VVB capacity in Africa and inform the design of M&E mechanisms to ensure adaptive, evidence-based implementation.

Table 1: Risk and their mitigation strategies identified

Risk category	Identified risks	Proposed mitigation strategies
Institutional and governance risks	• Absence or immaturity of national accreditation frameworks for VVBs in many countries. • Fragmented governance across ministries and agencies, with unclear oversight mandates for MRV and VVBs. • Limited recognition of VVBs in national carbon market legislation and Article 6 procedures. • Growing trend for country-specific accreditation requirements, creating duplication and barriers to entry. • Weak technical capacity within DNAs and regulators to assess methodologies, baselines, safeguards and Article 6 rules. • Fragmentation of national carbon market frameworks post-Paris Agreement, increasing procedural complexity.	• Strengthen institutional mandates and clarify regulatory responsibilities for MRV and VVB oversight. • Establish or empower national accreditation bodies aligned with ISO/IEC 17029 and ISO 14065. • Promote regional harmonisation and mutual recognition of accreditation to reduce duplication. • Build technical capacity within ministries, DNAs and regulators to apply methodologies, safeguards and Article 6 rules. • Develop clear, streamlined host-country procedures and fast-track Article 6 guidance.

Risk category	Identified risks	Proposed mitigation strategies
Financial risks	• High upfront costs for VVB accreditation and re-accreditation (often USD 50,000–60,000). • High liability and insurance costs for VVB operations. • Delayed revenue streams in carbon projects, undermining business viability for new VVBs. • Lack of dedicated public budgets or donor programmes for VVB capacity development. • Nascent debt-financing options due to limited understanding of VVB business models and risk/return profiles in the financial sector. • High borrowing costs and limited access to working capital.	• Provide donor-backed or blended-finance support for accreditation, QA systems and liability costs. • Introduce results-based payments per audit or auditor certified to improve cash flow. • Establish working-capital or revolving facilities tailored to VVB business models. • Underwrite start-up costs or guarantee minimum audit volumes in early market phases. • Support regional or shared accreditation models to reduce per-firm financial burden.
Operational risks	• Shortage of trained auditors and technical specialists across priority sectors. • Heavy reliance on international auditors, leading to travel, visa, logistics and security constraints. • Validation and verification delays (often 2–9 months), causing missed issuance and buyer deadlines. • Weak data availability, organisation and documentation at project level. • Limited institutional capacity to supervise VVBs and enforce quality assurance consistently • Small number of VVBs serving multiple countries, creating bottlenecks.	• Expand availability of Africa-based auditors to reduce travel and logistical delays. • Strengthen project-side data readiness through standardised templates and pre-audit diagnostics and readiness reviews. • Align government approval timelines with VVB processes to reduce procedural delays. • Increase the number of accredited VVBs and auditors to relieve pipeline congestion. • Encourage use of local experts for site and contextual assessments combined with desk-based reviews.

Risk category	Identified risks	Proposed mitigation strategies
Market and demand risks	• Uncertain and volatile demand for carbon credits, affecting investment decisions by VVBs. • Limited visibility on long-term Article 6, CORSIA and PACM demand signals. • Perceived short market window to 2030, increasing sensitivity to delays. • Sector-specific demand variability, leading to auditor scarcity for niche activities. • Reluctance of established VVBs to invest in Africa without predictable project pipelines.	• Provide clearer long-term policy signals on Article 6 implementation and market participation. • Improve transparency and predictability of national carbon market frameworks. • Increase visibility of African project pipelines and expected audit demand. • Support demand aggregation or pipeline visibility mechanisms to de-risk market entry for VVBs.
Technological risks	• Limited uptake of digital MRV and remote auditing tools despite recognised potential. • Slow approval cycles for new digital tools within standards and regulatory systems. • Limited awareness and readiness among VVBs and regulators to adopt digital workflows. • Difficulty collecting high-quality data in dispersed or remote geographies. • Increasing methodological complexity requiring more advanced digital tools and skills.	• Pilot and scale digital MRV tools (remote sensing, mobile data capture, audit trails). • Integrate digital readiness indicators into MRV and VVB capacity assessments. • Provide funding windows for digital MRV pilots and shared-use platforms. • Support hybrid audit models combining digital tools with targeted field verification. • Build regulatory familiarity with digital MRV to accelerate acceptance and approval.

Managing risks through risk-informed capacity development and M&E

Looking ahead to 2030, the development of local VVB capacity in Africa will remain shaped by a set of interlinked structural risks that require proactive management rather than ad hoc mitigation. At the core is a persistent mismatch between the high upfront capital requirements of establishing and operating VVBs and the delayed, uncertain revenue streams characteristic of carbon markets. Accreditation, quality-assurance systems, professional liability coverage and the recruitment of experienced auditors generate substantial fixed costs, while income is typically realised only after lengthy validation and verification cycles. This structural timing gap creates working-capital constraints, particularly acute in markets with volatile demand signals and evolving regulatory frameworks. Limited access to debt financing further exacerbates these risks, as financial institutions generally lack familiarity with VVB business models and credible benchmarks for assessing risk and return. Without deliberate de-risking mechanisms, such as improved demand visibility, blended finance, or results-based payments, investment in African-based VVBs is likely to remain below the level required to meet projected demand.

These financial constraints translate directly into operational and integrity risks. Under-investment in local capacity perpetuates reliance on a small pool of international auditors, creating bottlenecks in project pipelines and increasing validation and verification timelines. As demand accelerates under Article 6, CORSIA and higher-integrity voluntary markets, overstretched verification systems risk being pushed beyond sustainable operating limits. This raises the possibility of declining audit quality, delayed corrective actions and, in extreme cases, integrity risks if

speed is prioritised over rigour. Experience from the CDM illustrates the systemic vulnerability of highly concentrated verification markets, where a small number of entities undertake the majority of audits, leaving the system exposed to workload shocks and uneven skills development across accredited bodies (UNFCCC 2024). African governance contexts add further layers of risk, including weak enforcement capacity, opaque decision-making, and contested land and carbon rights, all of which heighten the importance of strong oversight and transparency in validation and verification processes (KIPPRA 2024).

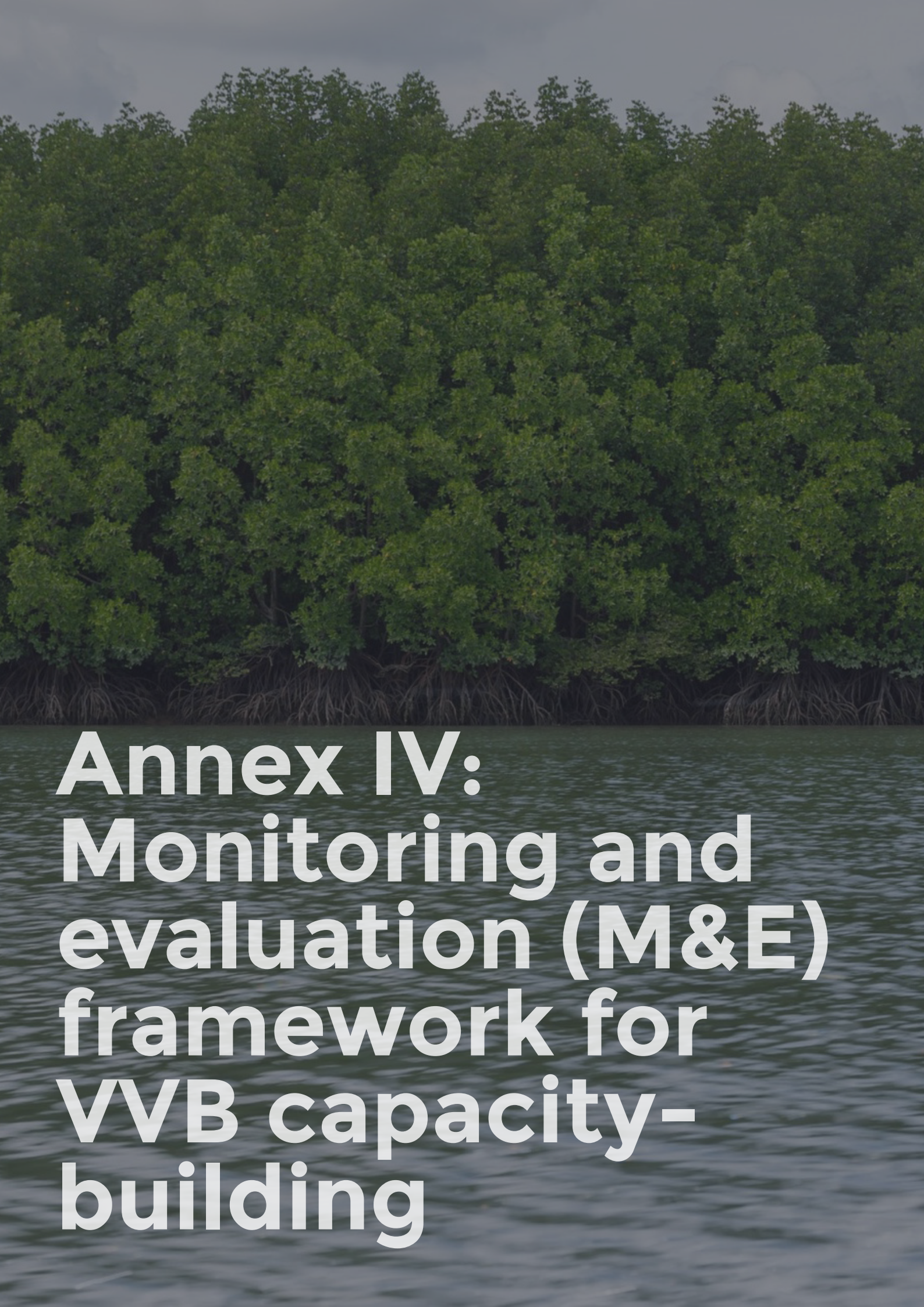
From a risk-management perspective, this underscores the need to address capacity, performance and integrity risks in an integrated manner. Capacity-building initiatives such as those proposed by ACMI, including auditor training, support for local VVBs and simplification of verification processes, directly target supply-side risks by expanding the pool of qualified professionals and reducing dependency on imported services (ACMI 2024). However, capacity expansion alone is insufficient without parallel strengthening of oversight mechanisms. Programme-level performance monitoring systems, such as Verra's VVB Performance Monitoring Programme (PMP), demonstrate how quantitative indicators, routine audits, corrective-action tracking and escalation procedures can be used to identify underperformance early and safeguard system integrity as markets scale (Verra n.d.).

An M&E framework therefore plays a central role in translating this risk outlook into adaptive management. Capacity indicators should track not only headline numbers of VVBs and auditors, but also their geographic distribution, sectoral expertise

and the share of audits led by Africa-based teams, allowing early identification of concentration or skills gaps). Performance indicators, for example: average validation and verification timelines, recurrence of non-conformities and completion rates of corrective actions, provide signals on whether operational risks are increasing or stabilising. Integrity-focused indicators are particularly critical in African contexts and should include tracking of stakeholder complaints, treatment of land-tenure and social safeguard issues, and documented cases of misreporting or greenwashing, as highlighted in regional governance analyses (KIPPRA 2024).

Finally, the evidence points to the importance of regional learning and feedback loops. Periodic reviews coordinated by regional initiatives, such as carbon market alliances and UNFCCC Regional Collaboration Centres can assess whether interventions are effectively reducing delays, improving audit quality and increasing local participation, and can recalibrate strategies as market conditions evolve. In this sense, risk management and M&E are not merely compliance tools, but central instruments for steering Africa's VVB capacity development along a path that is financially viable, operationally resilient and robust against integrity risks as carbon markets scale toward 2030.



A photograph of a dense mangrove forest with lush green trees and visible roots, situated along a body of water. The image is used as a background for the title text.

Annex IV: Monitoring and evaluation (M&E) framework for VVB capacity- building



This section proposes a light M&E framework to track whether VVB capacity building in Africa is:

- Closing the gap between rapidly growing demand and limited local supply
- Reducing delays and costs that undermine the competitiveness of African projects
- Building a credible African led assurance ecosystem aligned with Article 6, PACM requirements for DOEs and high integrity voluntary market expectations

The framework also monitors whether capacity building delivers broader benefits highlighted in this report: more context aware verification, stronger safeguards and co benefit assessment, reduced dependency on external actors, retention of carbon market value in African economies, and stronger regional cooperation.

1. Purpose of the M&E framework

The M&E framework is designed to answer three strategic questions:

- Is Africa building a minimum viable VVB ecosystem fast enough for projected demand under Article 6, CORSIA and voluntary markets?
- Are capacity building investments creating durable systems rather than temporary training outputs, avoiding the failure modes seen in other regions?
- Is the emerging Article 6 ecosystem sufficiently mature and integrity-ready, with tangible improvements in technical competence, independence safeguards, and QA/QC performance?

The scope is limited to indicators that can be collected with relatively low effort through accreditation bodies, carbon crediting programmes, regional initiatives, national carbon market institutions, universities and periodic stakeholder surveys.

2. Indicators to track effectiveness and sustainability

Indicators are grouped into five clusters aligned with the findings and pathways in this report. A phased approach is recommended, with a core set tracked from 2026 to 2027 then expanded toward a 2030 dashboard as data systems mature.

i. Supply of VVB services and workforce

- Number of Africa based VVB entities accredited under core ISO standards for VVBs (e.g., ISO 14064/ ISO 14065, ISO/IEC 17029) and at least one major carbon crediting programme (e.g., Verra, Gold Standard, Plan Vivo, UNFCCC PACM)
- Number of Africa based lead auditors and technical experts, disaggregated by priority sectors
- Share of validation and verification events for African projects led by Africa based auditors
- Retention rate of trained auditors who remain active after 3 and 5 years

ii. Market performance and demand

- Number of validation and verification events per year in Africa, by region and scheme
- Average time from request to completion for validation and verification
- Average audit cost for representative project types, for example cost per issued credit or share of total development cost
- Share of projects experiencing material delays or stalling that can be linked to VVB constraints

iii. Quality, integrity and readiness

- Frequency and severity of non-conformities or corrective actions, and average time to closure
- Share of audit outcomes that are contested, revised or cancelled
- Existence and practical application of independence rules, including conflict of interest controls, separation of consulting and assurance functions, rotation practices and transparency of reporting where applicable
- Share of African VVBs and auditors that demonstrate alignment with ICVCM's CCPs and PACM expectations for DOEs

iv. Equity, inclusion and regional balance

- Distribution of VVBs and auditors across African regions and country income groups
- Gender balance among trainees, auditors and lead auditors
- Coverage across least developed and fragile contexts compared to more mature markets
- Where feasible, stakeholder feedback on safeguards and local benefit aspects linked to verified outcomes

v. Digital MRV integration and innovation

- Share of African projects using digital MRV tools that are explicitly assessed in audits
- Share of VVBs with internal procedures to evaluate and rely on digital MRV outputs
- Documented time and cost savings from digital MRV integration, with attention to integrity safeguards
- Number of partnerships among universities, digital MRV providers and VVBs under recognised training pipelines

3. Baseline and target metrics

Baselines should draw on evidence collected in this report, including the number of Africa based VVBs and auditors, observed cost premiums, typical delays and current reliance on non-African VVBs. A small set of headline targets for 2030 should be agreed early, for example:

- Minimum number of Africa based VVBs accredited under PACM and at least one major programme
- Target share of audits for African projects led by Africa based auditors
- Reduction of average validation and verification timelines compared to the 2025 baseline
- Uptake of digital MRV in a significant share of audits
- Improved gender balance among trainees and auditors

Table 2: Indicative targets examples

Indicator	Baseline (2025)	2030 Target
Accredited African lead auditors	Very few (<10 continent-wide)	≥150
Accredited African VVB entities	0–5	≥20 (can be distributed across regions)
Average verification timeline	6–9 months	<2.5 months
Digital MRV adoption	Low, pilot stage	High (≥60% of audits)
Gender balance in auditor training	<20% women	≥45%
Countries with Article 6-ready VVB procedures	<5	Majority (>40)

4. Roles, review cycles and learning

A light governance model can support consistency without creating a new layer of bureaucracy:

- Regional coordination (for example AFRAC, ACMI, regional alliances, UNFCCC RCCs) defines templates, compiles data and publishes an annual synthesis
- National actors (carbon market offices, accreditation bodies, universities) collect core data on accreditation, training and policy milestones
- Programmes and VVBs share anonymised statistics on timelines, non-conformities and digital MRV use

Review cycles could include:

- An annual monitoring note focused on core indicators and emerging bottlenecks
- A mid-term review around 2028 to adjust financing, accreditation support and training pipelines
- A 2030 evaluation to assess whether Africa has achieved a minimum viable, high integrity VVB ecosystem that is ready for PACM, Article 6.2 and high integrity voluntary demand

Learning and adaptation should be integral to the framework. Annual learning exchanges can use indicator trends to prioritise countries and sectors for support, refine accreditation and mentoring instruments, and flag integrity or inclusion risks early, such as excessive concentration in a few firms or persistent exclusion of underrepresented regions.



Annex V: Stakeholder consultations



1. Introduction to stakeholder consultations

This document presents a synthesis and analysis of findings from the interviews and survey responses collected as part of the study *“Pathways for Strengthening Validation and Verification Body (VVB) Capacity in Africa.”* The purpose is to consolidate and analyse stakeholder perspectives across various market actors to build an evidence base for current VVB capacity, emerging challenges, and opportunities for system-wide strengthening in African carbon markets.

The analysis aims to achieve three core objectives:

- **Identify key themes and trends emerging from stakeholder insights.** The interviews and surveys provide qualitative and quantitative data on market demand, accreditation barriers, demand and capacity gaps, operational challenges, and the emerging role of digital monitoring, reporting, and verification (dMRV). The document identifies recurring patterns across stakeholder groups and highlights region- or sector-specific dynamics.
- **Identify barriers and opportunities for African VVB capacity development** that limit the emergence of African VVBs, while also mapping opportunities such as existing local expertise, Article 6 readiness processes, potential regional training hubs, and expanded auditor pipelines.
- **Inform the development of the pathways, risk strategy, and monitoring and evaluation (M&E) framework.** Findings from this analysis directly feed into the next phase of the report, including the design of feasible capacity-building pathways, the identification of institutional and market risks, and the formulation of an M&E framework that can track progress over time.
- **Support recommendations for strengthening VVB capacity in Africa.** The insights gathered form the foundation for evidence-based recommendations aimed at enhancing local VVB ecosystems, improving accreditation systems, reducing validation and verification bottlenecks, and ensuring that African countries can participate effectively in high-integrity carbon markets under Article 6 and the voluntary market.

2. Methodology for stakeholder consultations

The methodology for stakeholder consultations involved identifying key stakeholders and designing questionnaires tailored to the main stakeholder groups. identified. The study employed a mixed-methods approach that combined:

- Semi-structured interviews with key stakeholders
- An online survey tailored to stakeholder groups

These methods were selected to generate both in-depth and breadth of insights on current VVB capacity, operational challenges, and opportunities for strengthening validation and verification systems on the continent.

1.1. Data collection approach

To maximise the relevance and quality of stakeholder engagement, questionnaires were tailored to each stakeholder group. This ensured that the information collected reflected their specific roles, responsibilities, and experiences. The interview and survey tools were designed to capture insights on:

- Policy and institutional frameworks governing VVB accreditation
- Market demand dynamics for validation and verification services
- Support mechanisms provided by Carbon crediting programmes, governments, and donors
- Workforce development models and auditor training pathways
- Cost and delay implications arising from limited local VVB availability
- Identification of institutional, financial, regulatory, technical, and operational barriers that limit the development of local VVBs and auditing capacity
- Assessment of local audit expertise and availability of technically qualified auditors across key sectors and methodologies.
- Emerging opportunities for digital MRV and AI-enabled verification
- Recommendations to strengthen local institutional and technical capacity

The following stakeholder groups were targeted, with questionnaires adapted to their expected areas of insight:

- **Carbon crediting programmes** to share insights on accreditation rules, oversight systems, and procedural trends affecting VVB access and performance
- **Project developers and buyers (through bilateral agreements under Article 6.2)** to provide practical perspectives on VVB costs, delays, audit availability, and their need for timely and credible verification services
- **VVBs** to offer insights into operational realities, accreditation pathways, staffing constraints, and key bottlenecks
- **dMRV and technology actors** to highlight how AI, remote sensing, and digital workflows could improve audit efficiency and reduce costs
- **Governments and accreditation authorities** to clarify national frameworks for VVB approval, barriers to domestic accreditation, and opportunities for regional harmonisation
- **Market alliances and think tanks** to contribute insights on regional trends, coordination mechanisms, and enabling policies for VVB development
- **Training institutions and academia** to outline current training capacity, curricula, and opportunities to develop regional auditor training pathways
- **Donors** to identify funding priorities, support models, and opportunities to catalyse sustainable VVB ecosystems

1.2. Sampling strategy

The study adopted a purposive sampling strategy, selecting individuals and organisations most qualified to provide relevant insights rather than a statistically representative sample. Stakeholders were identified based not only on their preferred experience across the African continent, but also based on:

- Their operational presence in carbon markets
- Their technical experience or regulatory mandate
- Their direct involvement in validation and/or verification activities
- Their relevance to Article 6 or voluntary market standards

Once stakeholder groups were defined, key organisations were identified and invited to participate to ensure balanced representation across market roles.

1.3. Mixed-methods rationale and engagement timeline

To enable consistent comparison across responses, the questionnaires included a mix of parameterised qualitative and structured quantitative questions, allowing the study to derive homogenised conclusions on key issues such as accreditation barriers, timelines, and capacity needs.

Open-ended questions were incorporated to capture deeper perceptions, contextual nuances, and additional information that structured questions could not fully reflect. This was especially important for exploring emerging challenges, operational realities across different countries, and stakeholder priorities in their own words.

While surveys provided broader, standardised data, interviews facilitated two-way communication and allowed us to probe further, clarify responses, and gather richer insights. Together, this approach ensured that the study captured both the breadth and depth of information needed to build a robust evidence base.

Engagement followed the timeline below:

- **Survey and interview period:** 27 October – 7 November 2025 (two weeks)
- **Additional follow-up interviews:** Conducted between 17–26 November 2025 to strengthen participation and fill identified information gaps.
- After extensive outreach, the study team was able to interview **17 individuals** and received responses from **10 individuals** through the online survey.
- A summary of invitations and completed responses is provided in the following section.

1.4 Overview of respondents

This section provides an overview of the stakeholders who participated in the interviews and online survey, as well as the response rates achieved during the data collection period.

Table 3: Stakeholders participating in the interview and online survey

Stakeholder group	Respondents	
	Interviews	Surveys
Accreditation Authorities	3	0
Buyers (bilateral agreements A6.2)	2	0
Carbon crediting programmes	2	1
Digital MRV/ Tech Actors	0	1
Donors	0	0
Governments	0	0
Market initiatives	3	2
Project Developers	4	5
VVBs	3	3
TOTAL	17	12

1.5 Analytical approach

Insights from interviews, survey data, and comparative analysis were synthesised to identify capacity gaps, readiness factors, and feasible pathways for strengthening VVB ecosystems in Africa. The analysis also considered institutional, financial, regulatory, technical, and operational barriers to VVB development, as well as the feasibility of establishing regional training and accreditation hubs.

1.6 Limitations

Several limitations should be acknowledged when interpreting the findings:

- **Limited response rates:** Despite targeted outreach, the number of completed surveys and interviews was lower than anticipated, which may affect the breadth of perspectives represented.
- **Restricted stakeholder availability:** The short consultation timeline, combined with availability constraints for many organisations due to international conferences such as COP, limited the ability of some stakeholders to participate.

1.7 Mitigation strategy for limitations to the stakeholder's consultation process

To mitigate potential limitations arising from a lower response rate among identified stakeholder groups, given the short timeline for consultation, and availability considerations, the findings interpretation is complemented with desk research.

List of stakeholders engaged

Name of Organisation	Organization Type
African Accreditation Cooperation (AFRAC)	Accreditation Bodies
International Association of Validation and Verification Bodies (IAVVB)	Oversight Bodies
Integrity Council for the Voluntary Carbon Market (ICVCM)	Oversight Bodies
Gold Standard	Carbon-Crediting Programs & Standards
Verra	Carbon-Crediting Programs & Standards
Cercarbono	Carbon-Crediting Programs & Standards
Bureau Veritas	Validation & Verification Bodies (VVBs)
EcoLance Private Limited	Validation & Verification Bodies (VVBs)
AENOR	Validation & Verification Bodies (VVBs)
Verifit SAS	Validation & Verification Bodies (VVBs)
Nova-CERT	Validation & Verification Bodies (VVBs)
Ampere	Validation & Verification Bodies (VVBs)
BURN	Project Developers
Total Land Care	Project Developers
KOKO Networks	Project Developers
Aera Group	Project Developers
Global Green Growth Institute (GGGI)	Project Developers
Ecofrontier	Project Developers
Octavia Carbon	Project Developers
Conservation International	Project Developers
Straatos	Technical / Digital MRV Actors
East Africa Alliance on Carbon Markets and Climate Finance (EAA)	African Market Alliances & other Market Initiatives
West African Alliance on Carbon Markets and Climate Finance (WAA)	African Market Alliances & other Market Initiatives
Africa Carbon Markets Initiative (ACMI)	African Market Alliances & other Market Initiatives
Climate Action Platform for Africa (CAP-A)	African Market Alliances & other Market Initiatives
SEI Africa (Stockholm Environment Institute)	African Market Alliances & other Market Initiatives
BAFU/KLIK	Buyers of credits (bilateral agreements)
A6IP/JCM	Buyers of credits (bilateral agreements)



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