ACQF
African Continental Qualifications Framework

ALL-AFRICA STUDENTS UNION
UNION PANAFRICAINE DES ETUDIANTS
UNIÃO DOS ESTUDANTES DE TODA A ÁFRICA
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CONCEPT DOCUMENT

GREENING SKILLS AND QUALIFICATIONS IN AFRICA

Users' Engagement

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FOREWORD FROM THE AFRICAN CONTINENTAL QUALIFICATIONS FRAMEWORK (ACQF-II) PROJECT

Africa's green transition will be shaped not only by policies and frameworks, but by the energy, aspirations and insights of its young people. This concept document is the result of a unique and dynamic partnership between the African Continental Qualifications Framework (ACQF) and the All-Africa Students Union (AASU), bringing the voices of youth to the centre of the debate on greening skills and qualifications.

AASU's involvement has ensured that the perspectives, needs and ambitions of students and young professionals are not just reflected, but drive the analysis and recommendations. Through a multi-country survey, interviews and direct engagement with youth-led organisations, this work captures the realities and hopes of Africa's next generation—those who will live, work and innovate in a rapidly changing climate and labour market.

As a result of this partnership, a practical framework for greening qualifications based on evidence and user experience has been presented to the ACQF community. The document also lays the foundation for a Toolkit and Case Book to support implementation and peer learning across the continent.

We thank all contributors, especially the young people who shared their experiences and ideas. Readers are encouraged to use this document as a resource and inspiration to appreciate the skills of Africa's youth, to reflect on curriculum alignment with labour-market realities, and to explore ways of strengthening qualifications systems for the continent's next generation.

ACQF-II Project Team
European Training Foundation (ETF)

FOREWORD FROM AASU SECRETARY GENERAL

Africa's transition toward a green and climate-resilient economy requires a workforce equipped with the appropriate skills, knowledge, and qualifications. As climate challenges intensify, it has become increasingly important for education and training systems to respond by integrating green competencies that prepare young people for emerging labour market opportunities.

This Concept Document on Greening Skills and Qualifications in Africa – Users' Engagement is a product of the partnership between the All-Africa Students Union and the African Continental Qualifications Framework (ACQF) under the ACQF II project. It provides an analytical foundation for strengthening stakeholder engagement and advancing the integration of green skills within qualifications systems across Africa.

Drawing on evidence from surveys, interviews, and a desk review conducted across ACQF priority countries, the document highlights key challenges, emerging practices, and opportunities for aligning education, training, and qualifications with the demands of sustainable development. Importantly, it reflects the perspectives of users of qualifications systems, including students, educators, and industry stakeholders.

It is our hope that this document will inform policy dialogue, support reforms within education and TVET systems, and contribute to building a skilled generation capable of driving Africa's sustainable transformation.

Peter Kwasi Kodjie
Secretary General
All-Africa Students Union (AASU)

1.0 INTRODUCTION

Africa's green transition is accelerating in response to intensifying climate risks, structural economic vulnerabilities, and the urgent need to prepare its youthful population for emerging labour-market opportunities. The region remains one of the most climate-exposed globally, already experiencing heightened temperatures, prolonged droughts, erratic rainfall, and coastal degradation, with direct implications for livelihoods, productivity, and economic competitiveness (IPCC, 2022). Climate impacts are disproportionately borne by young people and marginalised groups, with evidence showing that climate change will exacerbate inequality, disrupt learning, and limit access to decent work unless skills systems are rapidly adapted (South African Institute of International Affairs, 2021).

Simultaneously, global evidence indicates that a shift to low-carbon and resource-efficient economies will create new forms of employment while transforming existing occupations across all sectors. The International Labour Organization estimates that the green transition could generate up to 24 million new jobs globally by 2030, but only if countries invest in anticipating skills needs, strengthening TVET systems, and aligning qualifications with evolving labour-market demands (ILO, 2018). Yet skills mismatches remain a persistent constraint: 21 of 27 countries surveyed by the ILO identified skills shortages as a major barrier to green growth, alongside limited coordination between environmental and skills policies (Kizu et al, 2018).

Against this backdrop, the African Union, through the African Continental Qualifications Framework (ACQF), has prioritised greening qualifications as a core strategic pillar under ACQF II Project. The ACQF emphasises the need for coherent qualifications systems, recognition of prior learning (RPL), and micro-credentials to support emerging skills demands and promote mobility across the continent. Recent ACQF studies further highlight that green skills are increasingly cross-sectoral, spanning renewable energy, construction, agriculture, transport, water, waste management, blue economy activities, and digital-enabled green services (Gvasalia et al., 2024)

However, evidence from across African countries reveals important systemic challenges:

- fragmentation between national skills frameworks and environmental policies;
- limited integration of green competences into curricula and TVET programmes;
- insufficient investment in labour-market intelligence and skills anticipation systems;
- weak alignment between industry needs and training provision; and
- persistent exclusion of youth, women, and informal workers from green skills pathways (Ramsarup et al., 2024; McGrath, 2022; Mwaura & Glover, 2017).

At the same time, African youth express strong interest in sustainability-oriented employment and entrepreneurship, while calling for improved access to climate education, green career guidance, and community-linked learning (SAIIA, 2021). The continent's demographic advantage, over 60% of its population under the age of 25, positions Africa to become a global hub for green talent, provided that qualifications and training systems evolve quickly enough to meet demand.

This Concept Document is situated within this continental context and is an integral component of the All-Africa Students Union (AASU) and ACQF II partnership to strengthen users' engagement in greening skills and qualifications. Building on emerging literature, trends from global skill ecosystems, and Africa-specific evidence, the document synthesises findings from a multi-country data collection exercise undertaken through this project, by including a continental survey, country-level interviews, and a desk review of green skills frameworks.

The purpose of the concept document is to:

- provide an analytical framing of green skills and qualification needs in Africa;
- consolidate evidence from AASU's data collection and the broader ACQF knowledge base;
- propose a technical framework for greening qualifications systems;
- situate the six best practices within a broader continental transition approach; and
- inform ACQF II implementation, policy dialogue, and future programme design.

By combining empirical insights from learners, educators, TVET providers, employers, and youth-led organisations with continental-level research and global policy directions, this concept provides a coherent knowledge base for operationalising green skills development in Africa's education, training, and qualifications systems. The document advances the view, widely affirmed in the literature, that there will be no green transition without a strong, future-ready skills and qualifications ecosystem (European Commission, 2023; OECD, 2010). Strengthening such systems will be pivotal in ensuring that Africa not only adapts to climate realities but also seizes new economic opportunities, enhances social equity, and drives a just, sustainable transformation.

2.0 OBJECTIVES OF THE CONCEPT DOCUMENT

This Concept Document forms part of the AASU–ACQF II Pilot Project on Greening Skills and Qualifications in Africa – Users' Engagement. It provides the analytical foundation required to support policy dialogue, qualification reforms and stakeholder engagement across the 13 ACQF priority countries. Its objectives are both strategic and operational, responding to the growing continental imperative to align education and training systems with the demands of a green and climate-resilient economy.

2.1 Strategic Objectives

1. Strengthen continental understanding of green skills and qualifications needs

The document synthesises evidence from ACQF technical studies, global labour-market analyses (ILO, OECD, UNESCO), and Africa-specific climate and employment projections to clarify the skills required for a just and inclusive green transition. This includes identifying emerging occupational roles, transversal competences, and sector-specific demands in areas such as renewable energy, waste management, sustainable agriculture, mobility, the blue economy and nature-based solutions.

2. Provide a structured lens for analysing system readiness

Drawing on the survey and interview data collected, the concept assesses the extent to which National Qualifications Frameworks (NQFs), TVET systems, higher education institutions, employers and community-based actors are prepared to integrate green competences. The analysis addresses alignment gaps, institutional capacities, labour-market intelligence, and the recognition of informal and indigenous knowledge, an area emphasised in both ACQF II and UNESCO lifelong learning frameworks.

3. Support harmonisation efforts under the ACQF

The concept contributes to ongoing continental efforts to enhance the comparability, portability and quality of qualifications across Africa. It highlights how green competences, learning outcomes, micro-credentials and Recognition of Prior Learning (RPL) can be systematically embedded in qualifications structures, ensuring that learners and workers can transition across countries, sectors and learning pathways.

2.2 Operational Objectives

4. Translate empirical evidence from users into actionable insights

The document incorporates findings from the multi-stakeholder survey conducted across National Qualification Authorities, universities and TVET centres, industry actors, students and community leaders. These insights help illuminate the practical challenges and opportunities within the green-skills ecosystem, ensuring that recommendations are grounded in user experience rather than purely conceptual analysis.

5. Propose a technical framework for the greening of skills and qualifications

Building on ACQF green-skills research, ILO's "Skills for a Green Transition" framework, and AU policy orientations, the document proposes a conceptual model outlining the institutional, structural and learner-level processes required to embed green competences into qualifications systems. This framework is intended to guide national reforms, continental referencing processes and provider-level curriculum development.

6. Inform policy, programme design and capacity-building activities

The findings and framework from this concept will feed into:

- future ACQF II peer-learning activities;
- national dialogue among ministries, qualifications authorities and training institutions;
- curriculum review and occupational standards development;
- youth-focused advocacy and capacity-building programmes led by AASU; and
- collaboration between education and industry stakeholders.

7. Support the development of the Toolkit and Case Book

The concept lays the analytical foundation for the other two major project outputs:

- the Toolkit for stakeholder engagement on greening skills;
- the Case Book of Good Practices.

The findings help identify the entry points, capacity gaps and promising models necessary to design practical guidance materials.

2.3 Contribution to Continental Priorities

The Concept Document aligns with:

- Agenda 2063, which calls for environmentally sustainable economies and empowered youth;
- the Continental Education Strategy for Africa, which emphasises TVET transformation and competency-based learning;
- the AU Climate Change and Resilient Development Strategy;
- ILO Global Framework for Just Transitions, which recognises skills anticipation and lifelong learning as core pillars;
- UNESCO frameworks on green competencies and sustainability education;
- IPCC findings on the urgent need for climate adaptation and resilience.
- the African Continental TVET Strategy 2025-34

Through this alignment, the concept ensures that Africa's green-skills agenda is not treated as a stand-alone initiative but as an integrated component of broader development, skills, and climate policies.

3.0 METHODOLOGY

3.1 Overall Research Design

The research followed a mixed-methods design that integrates policy analysis, empirical data collection and interpretive analytical techniques. This design aligns with ACQF principles of transparency, evidence-based decision-making and multi-stakeholder engagement. The approach combined a structured desk review of continental and global literature on green skills, a multi-country survey targeting five stakeholder groups, and semi-structured interviews with key informants across regulatory bodies, training institutions, industry actors and community leadership structures. Quantitative and qualitative methods were used in a complementary manner to generate a consolidated understanding of the readiness of Africa's skills and qualifications systems to support a green transition. This integrated approach ensured that the analysis remained rooted in the experiences of users while also grounded in established frameworks from ACQF II, ILO, UNESCO, OECD and the IPCC.

3.2 Desk Review

The desk review formed the conceptual foundation of the study and drew on a wide range of continental and international sources. It included a structured analysis of ACQF II technical papers, the "Data for the Green Revolution" report, greening TVET studies, and key African Union frameworks on skills development, climate action and sustainable economic transformation. In addition to these institutional sources, the review incorporated evidence from global organisations such as UNESCO, the ILO, the OECD and the IPCC, particularly focusing on their frameworks for green competencies, just transitions, skills anticipation and the future of work.

Beyond policy and institutional documents, the desk review also included an examination of peer-reviewed journal articles and academic publications on green skills, sustainability education, labour-market transitions, curriculum reform, green industrialisation, and youth engagement in climate-related learning. These articles provided deeper theoretical grounding and highlighted emerging empirical insights from African, Asian, Latin American and European contexts. The review of academic literature enabled the study to draw from established theories in skills governance, competency-based training, systems strengthening, environmental education, and recognition of prior learning, while also identifying cross-regional trends relevant to Africa's green transition.

Collectively, the desk review helped clarify the conceptual definitions of green skills, identify the sectors undergoing the most rapid transformation, and establish the analytical variables used for assessing system readiness. It also informed the design of survey instruments and interview guides by highlighting common gaps such as limited coordination across ministries, insufficient labour-market intelligence, weak integration of sustainability competences in curricula, and the need for more adaptive and modular qualifications frameworks.

3.3 Survey Design and Administration

The study designed and administered a continental survey structured around five stakeholder groups considered indispensable to the greening of Africa's skills ecosystem: National Qualifications Authorities, universities and TVET institutions, religious and traditional leaders, students, and industry leaders. Separate instruments were created for each group to reflect their distinct roles within the education-to-employment system. Survey items included Likert-scale assessments, single-choice and multiple-choice questions, and structured open-text questions that allowed respondents to elaborate on system gaps, institutional capacities, green-skills integration, labour-market alignment, community awareness, and youth participation.

The survey generated 137 valid responses from South Africa, Nigeria, Mozambique, Namibia, Sierra Leone, Malawi, Guinea, Bissau, Ghana, Somaliland, Zimbabwe, Democratic Republic Congo, Rwanda, Kenya, Eswatini, Mauritius, Togo, Libya, the Gambia, Zambia, Botswana, Uganda, Senegal and Liberia distributed across students (65.7%), universities and TVET institutions (13.9%), industry actors (8.8%), religious and traditional authorities (6.6%), and National Qualifications Authorities (5.1%). Although responses varied numerically across stakeholder groups, the dataset is sufficiently diverse to provide a multi-perspective understanding of the opportunities and constraints shaping the greening of qualifications in Africa. Responses reflected a cross-section of African countries, with representation from ACQF priority clusters as well as additional countries engaged through youth networks.

Table 1. Breakdown of Respondents

Stakeholder Group	Number	% of Sample
Students	90	65.7%
Universities, Polytechnics & TVET Centres	19	13.9%
Industry Leaders	12	8.8%
Religious & Traditional Leaders	9	6.6%
National Qualifications Authorities	7	5.1%
Total	**137**	**100**

Source: Field Survey, 2025

3.4 Semi-Structured Interviews

To complement the survey, semi-structured interviews were conducted with representatives of qualifications authorities, training institutions, youth organisations and employers. The criteria for selection of interviewers was based on the scope of targeted stakeholders with expertise in fields related to education, TVET, qualification and policy and industry. These interviews enabled deeper exploration of the underlying institutional, socio-cultural and political factors affecting the integration of green skills into education and qualifications systems. Interviewees provided insight into curriculum revision processes, the availability and use of labour-market intelligence, the operationalisation of Recognition of Prior Learning (RPL), the state of public–private partnerships, and the constraints faced by institutions and communities in adopting green technologies. The interview data were transcribed and analysed thematically to identify patterns and contextual drivers that quantitative data alone could not capture.

3.5 Quantitative Analysis

Quantitative analysis of the survey data was conducted. Descriptive statistics were generated to illustrate response distributions across stakeholder groups and key variables such as preparedness, integration levels and institutional practices. Cross-tabulations were used where appropriate to compare perceptions across education levels, institutional types or stakeholder categories. A composite Green Skills Policy Readiness Index was developed for National Qualifications Authorities to provide a structured measure of their readiness to integrate green competences into qualifications systems. The index was constructed from four variables: the extent of integration of green skills into the NQF, the existence of qualification reform processes, alignment with national green-transition strategies, and the systematic use of labour-market data. The variables was scored on a scale of 1-4 and 1–5, generating a readiness range of 0–12. Summary statistics were generated to analyse variation in readiness across NQAs.

3.6 Qualitative Analysis

Qualitative data derived from open-ended survey responses and interview transcripts were coded and analysed thematically. The thematic analysis focused on institutional capacity constraints, policy alignment challenges, infrastructure limitations, barriers faced by learners and informal workers, community-level perceptions of environmental change, and the role of indigenous knowledge and traditional leadership in facilitating green-skills adoption. This analytical layer enriched the quantitative findings by revealing depth, nuance and contextual variability across countries and stakeholder groups.

3.7 Triangulation and Validation

Triangulation was undertaken by comparing data from the desk review, surveys and interviews to identify convergences, contradictions and cross-cutting issues. This process strengthened the validity of the findings and ensured coherence with broader ACQF II objectives and global green-skills frameworks. The triangulation exercise also allowed the study to capture both the technical aspects of skills system readiness, such as curriculum integration and labour-market alignment, and the socio-cultural and governance realities that influence implementation across African contexts.

3.8 Limitations

Although the methodology provides a strong evidence base, several limitations were observed. Response sizes varied across stakeholder groups. Not all countries were equally represented, and in some contexts, national-level green-skills data remain limited. Despite these limitations, the methodological approach provides robust and multi-layered insights that sufficiently support the conceptual framing and policy recommendations offered in this report.

4.0 CONTINENTAL LANDSCAPE OF GREEN SKILLS IN AFRICA

4.1 Emerging Trends in Green Skills in Africa

Across the continent, demand for green skills is increasing rapidly as African economies respond to climate stress, technological innovation, population growth and shifts in global production systems. Multiple ACQF II analyses emphasise that green skills are no longer peripheral; they are becoming central to economic competitiveness, institutional resilience and national development strategies (ACQF, 2024). Labour-market projections from the ILO show that the transition to low-carbon economies could generate up to 24 million jobs globally by 2030, many of which require new or adapted skills profiles (ILO, 2018). Africa is positioned to capture a significant share of this growth due to its renewable energy potential, expanding urbanisation and young workforce.

Survey findings from this study reinforce these continental trends. Students, institutions and industry leaders consistently identified renewable energy, agriculture, waste management and environmental conservation as the most immediate areas where green skills are needed. Industry respondents reported that sustainability competencies increasingly influence hiring decisions and productivity outcomes, while TVET and higher education institutions reported ongoing attempts, though often limited, to integrate sustainability competencies into their programmes.

A salient trend is the growing role of transversal green competencies, such as problem-solving, systems thinking, resource efficiency, digital skills for environmental monitoring, and entrepreneurial skills for green ventures. The Foresight on Demand (FoD) Futures4Europe Policy Brief similarly highlights that future green labour markets will require hybrid profiles blending technical, managerial and digital competencies (Knudsen et al., 2023). ACQF studies align with this view, emphasising that Africa's green transition depends not only on technical upskilling but also on developing adaptive learning pathways, lifelong learning systems, and recognition frameworks for skills acquired outside formal education (Gvasalia, 2024).

Demographically, Africa's extraordinary youth population amplifies the urgency of developing green skills. Youth submissions analysed in the SAIIA climate report show strong motivation for participating in green entrepreneurship, climate action and environmental governance, but also point to limited access to structured green-skills training, funding and mentorship (SAIIA, 2021). This trend underscores the need for targeted investments in youth-focused green vocational training, innovation hubs, and flexible qualification pathways.

4.2 Gaps in Education and Training Systems

Despite growing demand and political emphasis on sustainability, African education and training systems remain insufficiently prepared to deliver green skills at the scale required. ACQF and TVET-greening documents repeatedly identify fragmented curriculum reform processes, a lack of coordinated policy frameworks, and limited alignment between qualifications and labour-market needs (ACQF, 2024). Survey findings from this study confirm that green skills are only "moderately integrated in some sectors" within most National Qualifications Frameworks, with several countries reporting minimal integration.

A key systems gap lies in labour-market intelligence. Many African countries lack mechanisms for forecasting green skills needs or systematically collecting data on emerging occupations, as highlighted in the ACQF "Data for the Green Revolution" report by Gvasalia et al. (2024). TVET institutions often revise curricula without adequate data on sector transformation, leading to outdated content and weak relevance. The ILO WESO 2018 report similarly notes that skills anticipation systems in Africa lag behind global standards, leaving policymakers unaware of future green skills shortages (Kizu et al, 2018).

Infrastructure constraints represent another major barrier. Technical institutions often lack laboratories, renewable-energy equipment, digital tools, waste-processing technologies, or simulation environments needed for practical training. This is consistent with findings from the Kinshasa ACQF workshop, which emphasised that "greening TVET requires capital investments in equipment, retraining of instructors and partnerships with industry" (ACQF, 2024).

Human capacity limitations also inhibit system readiness. Many educators lack exposure to green technologies or up-to-date sustainability pedagogy. Training-of-trainers programmes are limited, and instructors frequently rely on outdated learning materials. Survey responses from universities and TVET centres pointed to insufficient professional development opportunities and limited guidance from national authorities on integrating sustainability competencies.

Other systemic gaps include:

- weak coordination between ministries of education, labour, industry and environment, resulting in fragmented policy implementation.
- insufficient Recognition of Prior Learning (RPL), despite the fact that a majority of Africa's green practices, particularly in recycling, repair, regenerative farming and community forestry, occur informally (ILO, 2018; ACQF, 2024).
- low access to green-skills training in rural and peri-urban areas, often due to lack of infrastructure, connectivity and qualified trainers.
- limited private-sector engagement, despite industry being a key creator and user of green competencies.

Collectively, these gaps constrain Africa's ability to harness the full potential of its young workforce, informal economy and natural resource endowments.

4.3 Sector-Level Analysis of Green Skills Demand in Africa

4.3.1 Renewable Energy

The renewable energy sector is one of Africa's fastest-growing green labour markets. Countries including Kenya, Nigeria, South Africa, Morocco and Egypt have expanded investments in solar PV, hybrid mini-grids, bioenergy and wind power. The ACQF desk review highlights strong demand for technicians in installation, maintenance, energy auditing, project design and systems optimisation (Gvasalia et al. 2024). Survey findings also confirmed renewable energy as the top priority sector identified by students, institutions and industry leaders.

Key green skills include:

- solar system installation and diagnostics
- battery management and safety
- energy efficiency auditing
- smart-grid monitoring
- climate-risk modelling

ILO projections indicate that renewable energy could create millions of new jobs globally while requiring major reskilling and certification systems (ILO, 2018).

4.3.2 Agriculture and Food Systems

As Africa's largest employment sector, agriculture faces the most climate-induced disruption. ACQF sources show that green skills for agriculture are needed in climate-smart agriculture (CSA), sustainable irrigation, agroecology, regenerative land management, and resilient value-chain practices. Yet, agriculture remains one of the least modernised TVET sectors (ACQF, 2024).

Survey findings show strong youth interest in agricultural sustainability but limited institutional capacity to offer hands-on training. Skills gaps include:

- soil and water conservation
- integrated pest management
- climate forecasting for farmers
- post-harvest waste minimisation
- sustainable agribusiness and value-chain management

The SAIIA Youth Report reinforces that young Africans view agriculture as a future green opportunity but lack supportive skills programmes (SAIIA, 2021).

4.3.3 Waste Management and the Circular Economy

Africa's waste and circular economy is emerging as a major source of green employment. The Foresight on Demand (FoD) Futures4Europe Policy Brief indicates that circularity will transform jobs in recycling, repair, materials recovery, eco-design and logistics (Knudsen et al., 2023). ACQF studies highlight that circular-economy skills are particularly relevant in urban Africa, where informal waste pickers form the backbone of recycling economies but lack recognition and formal training (ACQF, 2024).

Survey results show that waste management ranked among the top three sectors identified by students as green-job opportunities. Skill shortages are most visible in:

- waste sorting and recovery
- composting and biogas production
- eco-design and extended product lifecycles
- waste-to-energy systems
- repair and remanufacturing

RPL represents a major opportunity for integrating informal waste workers into formal green-skills pathways (ILO, 2018).

4.3.4 Construction and Built Environment

Africa's rapid urbanisation drives strong demand for skills in sustainable construction, energy-efficient building design, green materials, and environmentally conscious urban infrastructure. The ACQF greening-TVET papers emphasise that construction curricula rarely incorporate sustainability despite global trends toward low-carbon building systems (ACQF, 2024).

Skills needs include:

- green building codes
- energy-efficient retrofitting
- sustainable materials use
- urban climate adaptation

Industry survey responses echoed this gap, noting difficulties in hiring workers trained in sustainable building techniques.

4.3.5 Transport and Mobility

Transport contributes significantly to emissions, and African cities are experimenting with cleaner mobility models, including electric mobility, non-motorised transport systems and low-emission logistics.

This creates new green skills demands in:

- electric-vehicle (EV) system maintenance
- battery diaganostics
- transport data analytics
- smart-mobility planning
- sustainable logistics

The ILO and OECD identify sustainable mobility as a future growth sector in emerging markets (ILO, 2018). However, ACQF studies reveal that TVET institutions have not yet integrated EV maintenance or low-carbon transport competencies systematically (Gvasalia et al., 2024).

4.4 Summary

Overall, Africa's continental green-skills landscape is characterised by significant labour-market potential, strong youth interest and emerging sectoral opportunities. However, the transformation is constrained by structural weaknesses in education systems, limited labour-market intelligence, inadequate infrastructure, gaps in curriculum greening and insufficient recognition of informal learning. These realities reinforce the need for coordinated action through ACQF II, particularly in developing harmonised green-competency frameworks, scaling RPL, strengthening industry partnerships and mainstreaming green-skills development across all levels of education and training.

5.0 KEY FINDINGS

5.1 Overview of Stakeholder Perspectives

The empirical evidence gathered through surveys and interviews across five stakeholder groups, National Qualifications Authorities (NQAs), universities and TVET institutions, students, industry leaders, and religious and traditional authorities, reveals a continental landscape marked by both optimism and structural constraints regarding the greening of skills and qualifications. Across all groups, there is broad recognition that green skills are becoming increasingly important for employability, environmental resilience, and national development. Students expressed strong interest in sustainability-related careers, educators acknowledged that training systems must adapt to emerging labour-market needs, and industry representatives signalled rising demand for workers with green competencies. However, the level of readiness to integrate these skills varies significantly across institutions and countries. Stakeholders consistently emphasised that while awareness is growing, the systems, tools and capacities required to embed green skills effectively remain underdeveloped.

5.2 Readiness of Qualifications Systems

Findings from NQAs in Nigeria, Ghana, Eswatini and Guinea Bissau indicate that the greening of qualifications frameworks is still at an early stage. Most NQAs reported that green skills are only moderately integrated in certain sectors, with limited system-wide adoption. Only a small proportion indicated any significant reform efforts aimed at embedding sustainability competencies within occupational standards or qualification descriptors. Table 2 shows that there are low-to-moderate readiness levels across NQAs on the extent of green skills integration in selected sectors. The Green Skills Policy Readiness Index developed for this study shows low-to-moderate readiness levels across NQAs, with index scores ranging between 2 and 4 on a 12-point scale (see Appendix A for detailed explantion). Interviews with national regulators reinforced these findings, revealing that curriculum updates and qualification reforms often occur in isolation from environmental policy processes, and that coordination between ministries responsible for education, labour, industry and environment remains weak. Labour-market intelligence systems are limited in their ability to track emerging green occupations or forecast future skills needs, creating a disconnect between qualifications design and evolving labour-market demands.

Table 2. NQAs – Extent of Green Skills Integration Across Sectors

Response Category	Frequency	Percentage
Moderately integrated in some sectors	6	85.7%
Minimally reflected	1	14.3%
Fully reflected across all sectors	0	0%
Not reflected at all	0	0%

Source: Field Survey, 2025

5.3 Institutional Capacity in Universities and TVET Centres

Institutions at the frontline of skills delivery face significant constraints that hinder the integration of green competencies. Survey responses from universities and TVET centres indicated that while many institutions recognise the importance of greening their programmes, practical implementation is limited by inadequate training equipment, insufficient funding, and a shortage of qualified instructors capable of delivering sustainability content. Interviews revealed that even where sustainability topics are included in curricula, they often remain theoretical and disconnected from hands-on applications due to lack of laboratories, renewable-energy systems, waste-processing infrastructure and other practical learning environments. Institutions also highlighted limited engagement with industry, resulting in outdated content that does not reflect current or emerging occupational requirements. This mirrors ACQF findings that greening TVET requires significant investment in infrastructure, staff development and curriculum transformation.

5.4 Industry Demand and Labour-Market Alignment

Industry perspectives demonstrate a labour market that is beginning to articulate clearer green-skills needs but still faces acute shortages of trained personnel. Half of the industry respondents indicated that their organisations already provide sustainability-related training, while one-third provide none, reflecting a fragmented and uneven commitment across sectors. Interviews with employers revealed strong demand for workers with competencies in renewable energy, circular-economy processes, environmental compliance, resource-efficient production, and sustainable construction. However, employers frequently expressed frustration at the limited availability of job-ready graduates with practical experience. Many organisations rely on internal training or international certifications because national systems do not yet offer recognised pathways for certain green skills. Industry leaders widely agreed that stronger partnerships with education providers, co-designed curricula, and structured apprenticeship pathways are essential to narrowing the skills gap.

Table 3. Integration of Training related Sustainability/Green Skills

Response Category	Frequency	Percentage
Yes, extensively	6	50.0%
Yes, but limited	2	16.7%
No, not currently	4	33.3%

Source: Field Survey, 2025

5.5 Youth Aspirations and Barriers to Accessing Green Skills

Students demonstrated the highest levels of awareness and motivation regarding green skills. Survey responses show strong interest in solar technologies, climate-smart agriculture, recycling and environmental advocacy. Many students view the green economy as a source of future employment and entrepreneurial opportunity. However, they also reported significant barriers, including limited access to training programmes, insufficient information on green career pathways, and high costs associated with specialised courses or certifications. Interviews revealed that students frequently rely on social media, NGOs and external short courses for sustainability-related learning because formal institutions offer limited structured content. This disconnect highlights the need for more informative guidance systems, youth-friendly learning pathways, and enhanced participation of young people in skills governance processes. Youth across interviews expressed a desire for more practical experiences, internships, community projects and green innovation platforms.

5.6 Community-Level Insights from Religious and Traditional Leaders

Religious and traditional authorities play a significant but often under-recognised role in the green-skills ecosystem. Survey and interview findings indicate that these leaders possess strong awareness of environmental degradation, climate impacts and the cultural dimensions of ecological stewardship. They emphasised the importance of community-based training, locally relevant knowledge, and approaches that incorporate indigenous practices in agriculture, forestry and water management. They also highlighted the linguistic, cultural and socio-economic barriers that prevent rural populations from accessing formal green-skills programmes. These insights reinforce the importance of Recognition of Prior Learning (RPL) as a mechanism for integrating community-based environmental knowledge into formal qualifications systems. They also underscore that successful greening initiatives must account for local belief systems, cultural norms and community governance structures.

5.7 Cross-Cutting System Challenges

Across stakeholder groups, several systemic challenges emerged consistently. Weak policy coordination was identified as a core obstacle, with education, labour and environmental authorities often working in silos. The absence of comprehensive national green-skills frameworks or implementation plans means that reforms remain fragmented and reactive. Funding limitations affect nearly all levels of the system, from national curriculum review processes to institutional infrastructure upgrades and community training delivery. Instructor capacity remains a widespread

constraint, with many educators lacking exposure to green technologies or sustainability pedagogies. Recognition of competencies acquired informally, particularly in sectors such as waste management, small-scale construction and regenerative agriculture, remains limited, despite the high relevance of informal workers to the green transition. These challenges collectively hinder Africa's ability to scale up and harmonise green-skills development in line with ACQF objectives.

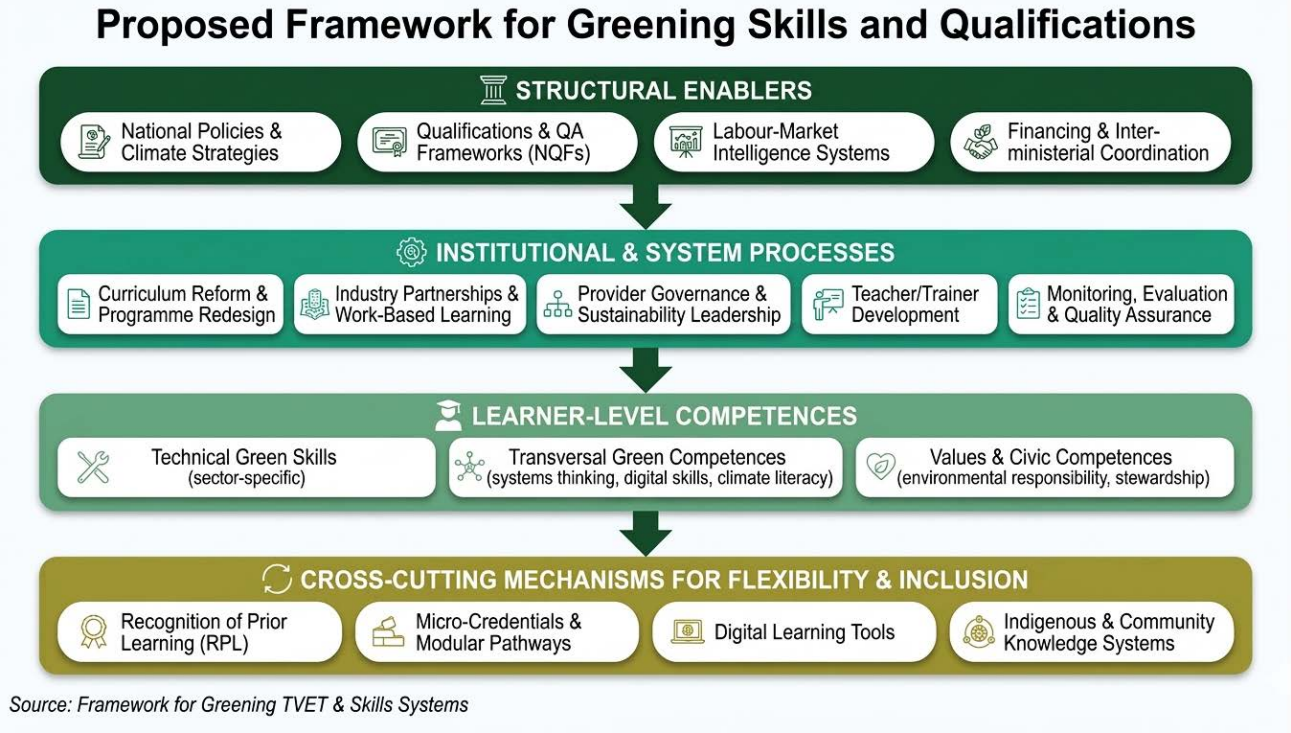
5.8 Opportunities for System Strengthening

Despite these challenges, the findings also point to important opportunities. Youth motivation represents a powerful driving force that, if supported by accessible learning pathways and innovation platforms, could accelerate green entrepreneurship and community-based learning. Industry is increasingly willing to engage in skills development, creating prospects for co-designed curricula, apprenticeships and competency-based certification. National and regional bodies such as the ACQF provide structured mechanisms for harmonising qualifications, developing green-competency standards, and formalising skills acquired outside traditional education systems. Institutions are beginning to experiment with micro-credentials, modular programmes and digital learning, making it possible to scale green training efficiently. Religious and traditional leaders also provide a critical entry point for reaching rural and marginalised communities.

6.0 PROPOSED FRAMEWORK FOR GREENING SKILLS AND QUALIFICATIONS

This section proposes an integrated framework for greening skills and qualifications in Africa. It is grounded in the empirical findings of this study, the ACQF II technical work, the ILO's "Skills for a Green Transition" agenda, and international evidence on skills systems and just transition policy (ACQF, 2024; ILO, 2018; Gvasalia et al., 2024; UNESCO, 2021). The framework is organised around four interrelated dimensions: structural enablers at continental and national level; institutional and system processes within education, training and labour-market institutions; learner-level competences; and cross-cutting mechanisms such as Recognition of Prior Learning (RPL), micro-credentials, digital tools and the valorisation of indigenous knowledge.

Taken together, these dimensions describe how qualifications systems can move from ad hoc, project-based green initiatives towards a coherent, scalable architecture that links policy, institutions and learners. The framework is not intended to replace existing national models; rather, it offers an organising lens that countries and stakeholders can adapt to their context while remaining aligned with ACQF principles.



Source: Framework for Greening TVET & Skills Systems

Conceptual Framework: Greening Skills & Qualifications in Africa

The framework illustrates the multi-layered architecture required to embed green skills and sustainability competences within African education, training, and qualifications systems. It highlights four interconnected dimensions: structural enablers, institutional and system processes, learner-level competences, and cross-cutting mechanisms that support flexibility, inclusion and relevance.

6.1 Structural Enablers

At the highest level, greening skills and qualifications depends on structural enablers that create the political, regulatory and financial conditions for sustained reform. The first enabler is a clear policy mandate. This involves explicit integration of green skills and just transition objectives into national development plans, TVET and higher-education strategies, climate and energy policies, industrialisation plans, and employment frameworks. ACQF documentation and international evidence show that where green objectives are embedded across interlinked policies, governments are better able to prioritise resources, coordinate actors and send consistent signals to education and labour-market institutions (ACQF, 2024; ILO, 2018).

A second structural enabler is the existence of robust qualifications and quality assurance frameworks. National Qualifications Frameworks, when aligned with ACQF, provide a reference structure for defining green competences, assigning levels, and ensuring quality, comparability and transparency of qualifications across sectors and countries (Gvasalia et al., 2024). Greening requires that these frameworks explicitly recognise sustainability-related learning outcomes, permit modular pathways and support flexible assessment practices, including RPL. Quality assurance agencies, in turn, must incorporate environmental and sustainability criteria into accreditation, programme review and provider evaluation processes.

A third enabler relates to labour-market intelligence and skills-anticipation systems. Without systematic data on emerging occupations, sectoral transformation and regional skills demand, reforms to qualifications risk being reactive and partial. The analysis presented in this report and in the "Data for the Green Revolution" study underscores that many African countries lack integrated systems for collecting and analysing green-jobs data (Gvasalia et al., 2024). Building such systems requires strengthened statistical capacity, collaboration with employers, and integration of data sources across ministries and agencies. Finally, structural enablers include financing mechanisms that can support curriculum reform, infrastructure upgrading, capacity-building and innovation. These may combine domestic public finance, private investment and development cooperation, but must be underpinned by clear priorities and accountability frameworks.

6.2 Institutional and System Processes

Within the enabling environment, a second layer of the framework focuses on institutional and system processes. These describe how ministries, qualifications authorities, providers, employers and community actors translate policy intent into concrete programmes, qualifications and learning opportunities. At the centre of this layer is curriculum and programme development. Greening curricula requires moving beyond isolated environmental topics to embedding sustainability competences in occupational standards, course outcomes, teaching and assessment practices. This involves systematic review of existing programmes, identification of green competences for each sector, and the design of new or revised modules that integrate technical and transversal green skills. ACQF and TVET greening work emphasise that such reforms are most effective when co-developed with employers and anchored in labour-market intelligence (ACQF, 2024; ILO, 2018).

Another critical process is partnership-building between training institutions and industry. Strong, structured partnerships allow employers to contribute to curriculum design, offer work-based learning opportunities, co-deliver short courses, and support the development of occupational standards. Survey responses from industry and providers in this study pointed to fragmented and occasional engagement; the proposed framework positions regularised partnerships, through sector skills councils, joint committees and apprenticeship systems, as central to greening qualifications. Institutional processes must also extend to governance and leadership within universities and TVET centres. This includes establishing internal green-skills strategies, allocating roles for sustainability coordination, and incentivising departments to integrate environmental dimensions into teaching and research.

Teacher and trainer development is another core system process. Educators cannot

6.3 Learner-Level Competences

The third layer of the framework focuses on learner-level competences: what individuals should know, be able to do, and value in order to participate meaningfully in green and just economies. Drawing on ACQF analysis, ILO competencies frameworks and the broader literature, the framework distinguishes between three overlapping categories of learner outcomes. The first category comprises technical green skills specific to sectors and occupations. In energy, this may include solar PV installation, grid integration and energy auditing; in agriculture, climate-smart practices and regenerative land management; in waste and circular economy, materials recovery, recycling technologies and eco-design; and in construction, green building codes and energy-efficient retrofitting.

The second category covers transversal green competences, which cut across occupations and sectors. These include systems thinking, environmental literacy, resource efficiency, digital literacy for environmental monitoring, risk assessment, and problem-solving under conditions of uncertainty. Such competences enable workers to adapt as technologies and regulations evolve. The third category relates to values, attitudes and civic competences, including environmental responsibility, solidarity, intergenerational equity and readiness to engage in collective climate action. Evidence from youth-focused studies indicates that African learners are already strongly motivated in these areas but lack structured opportunities to translate their values into recognised learning outcomes and qualifications (SAIIA, 2021).

In operational terms, the framework suggests that learner-level competences should be expressed explicitly in qualification descriptors, curricula and assessment standards, and mapped to ACQF levels. This makes it possible to design pathways where learners can progress from basic to advanced green competences, moving horizontally between sectors and vertically between qualification levels.

6.4 Role of RPL, Micro-Credentials, Digital Tools and Indigenous Knowledge

The fourth dimension of the proposed framework is cross-cutting and describes mechanisms that can accelerate greening while promoting inclusion and flexibility. Recognition of Prior Learning (RPL) is central in African contexts, where a large proportion of green practices and innovations occur in the informal economy. Workers involved in recycling, repair, artisanal renewable-energy installation, conservation and regenerative agriculture often possess substantial competences that go unrecognised in formal systems. ACQF guidance and ILO analysis both highlight RPL as a strategic tool for validating these competences, creating progression routes into formal qualifications and improving labour mobility (ACQF, 2024; ILO, 2018). Within the framework, RPL is positioned as an integral part of qualification design and quality assurance, not as an isolated initiative.

Micro-credentials and modular learning constitute another key mechanism. They enable learners to acquire specific green competences in short, stackable formats that can be combined into full qualifications or used for targeted upskilling and reskilling. This is particularly relevant for workers in transition, small enterprises and youth seeking to enter emerging green occupations. ACQF work on flexible learning pathways, as well as international evidence from OECD and UNESCO, shows that micro-credentials can make skills systems more responsive and inclusive if they are quality-assured and referenced to national and regional frameworks (Gvasalia et al., 2024; UNESCO, 2021).

Digital tools play multiple roles within the framework. They support delivery of green-skills programmes through online and blended learning, expand access to rural and marginalised communities, and enable the use of simulations and virtual laboratories where physical infrastructure is lacking. They also underpin labour-market information systems, digital badging, e-portfolios for RPL, and data collection for monitoring green transitions. For young people in particular, digital platforms already act as de facto learning environments for climate and sustainability content; the framework therefore calls for their deliberate integration into formal qualifications approaches.

Finally, the framework recognises indigenous and local knowledge as a critical resource. Traditional ecological practices in agriculture, water management, forestry and community governance often embody principles of sustainability and resilience that are highly relevant to green transitions. Religious and traditional leaders consulted in this study emphasised the importance of grounding green-skills initiatives in local cultures and languages. Integrating indigenous knowledge into curricula, RPL processes and community-based training not only enhances relevance but also supports cultural continuity and social legitimacy. Within the framework, indigenous knowledge is not treated as a separate or marginal stream, but as a knowledge system that can inform both structural policy choices and learner-level competences.

6.5 Defining Green Skills and Green Qualifications in the Context of Africa

The growing urgency of climate action, coupled with Africa's demographic pressures and economic transformation, requires definitions of green skills and green qualifications that reflect the continent's unique labour-market realities, ecological diversity, and social systems. While global definitions from the ILO, OECD and UNESCO provide a useful foundation, this study's findings, including survey data, interview insights and analysis of over 30 African and global publications, indicate that Africa needs a more contextualised and holistic framing.

6.5.1 Green Skills in Africa

Across the literature, green skills are generally described as the knowledge, abilities, values and attitudes required to support sustainable development, climate resilience and low-carbon transitions (ILO, 2018; UNESCO, 2021). However, survey responses from African students, TVET providers, industry leaders, religious authorities and NQAs reveal that green skills on the continent carry a broader and more grounded meaning.

Stakeholders emphasised five core dimensions:

1. technical competencies linked to green sectors such as renewable energy, climate-smart agriculture, waste management, sustainable construction and water governance.
2. transversal competences, including systems thinking, environmental literacy, digital skills for environmental monitoring, problem-solving and resource efficiency.
3. socio-cultural knowledge, particularly indigenous and communi ty-based ecological practices grounded in African traditions of land stewardship and conservation.
4. entrepreneurial and innovation capabilities, reflecting the demand for youth-driven green microenterprises, repair economies, recycling start-ups and agritech solutions.
5. adaptive and resilience capacities, necessary for coping with climate shocks, uncertainty, informal labour conditions and rapidly changing technologies.

Survey data further showed that students often associate green skills with "practical experiences," "self-reliance," "community action," and "livelihood protection," while industry leaders emphasised "job-readiness," "competency-based performance," and "regulatory compliance."

Based on these insights, this study defines green skills in Africa as:

A set of technical, transversal, socio-cultural and adaptive competences that enable individuals and communities to participate in, contribute to, and benefit from Africa's transition towards environmentally sustainable, climate-resilient and resource-efficient economies. These competences draw equally from formal learning, informal and indigenous knowledge systems, and practical experiences across both formal and informal labour markets.

This definition reflects the continent's reliance on mixed livelihoods, informal economies and communal knowledge, and acknowledges the role of youth as innovators in emerging green sectors.

6.5.2 Green Qualifications in Africa

Global policy frameworks typically define green qualifications as credentials that certify learning outcomes aligned with sustainability and low-carbon economic activities. However, survey findings indicate that stakeholders across Africa see green qualifications not only as certificates but as pathways that legitimise diverse forms of learning, formal, non-formal and informal, while enabling mobility and employability.
NQAs consulted in this study stressed that qualifications must be fit for purpose, labour-market aligned, inclusive, and must integrate sustainability as a cross-curricular competence rather than an isolated module. TVET institutions argued that qualifications should be flexible, modular and linked to micro-credentials and RPL to accommodate learners who enter training from varied backgrounds. Industry leaders emphasised that qualifications must reflect actual workplace competencies in emerging green occupations, while religious and traditional leaders highlighted the importance of recognising indigenous ecological knowledge.

Based on these diverse inputs, green qualifications in Africa must be seen as:

- outcome-based, clearly articulating the sustainability competences required for specific occupations.
- flexible, allowing learners to move between sectors, levels and learning pathways.
- inclusive, recognising the skills of informal workers through RPL and competency-based assessments.
- stackable, enabling learners to accumulate micro-credentials into full qualifications.
- aligned with ACQF, ensuring transparency, comparability and mobility across borders.
- contextualised, incorporating African ecological realities, cultural knowledge systems and varied labour-market structures.

Based on the study's findings, this report defines green qualifications in Africa as:

Formal, non-formal or hybrid credentials that validate sustainability-related learning outcomes aligned with occupational and societal needs in Africa's green and climate-resilient transition. Green qualifications recognise competences acquired through structured training, work experience, informal practices and indigenous knowledge, and they provide flexible, stackable and labour-market-responsive pathways referenced to national and continental qualifications frameworks.

This definition aligns with ACQF principles of transparency, mobility, lifelong learning and inclusivity, while responding directly to the realities expressed by survey participants.

6.5.3 Significance of an Africa-Centred Definition

The definitions above advance three key shifts needed for the continent:

From narrow technical skills to holistic environmental competences.

Africa's green economy spans urban and rural livelihoods, demanding a broader conception of skills beyond formal technologies.

2

From static qualifications to flexible learning pathways.

Survey data shows strong youth preference for short courses, micro-credentials and community-based learning, requiring a shift from rigid qualification structures.

3

From Northern-centric models to African knowledge systems.

Indigenous practices, informal innovations and community-based stewardship constitute major reservoirs of green skills that formal systems must acknowledge through RPL and competency-based assessments.

7.0 CONCLUSION

Africa stands at a critical juncture where demographic momentum, environmental vulnerability and economic transformation converge to create both profound challenges and unprecedented opportunities. The findings of this study demonstrate unequivocally that green skills are no longer a peripheral concern but a central pillar of Africa's climate resilience, industrial competitiveness and long-term development. Stakeholders across the continent, from youth to industry, qualifications authorities, educators and community leaders, recognise the urgency of equipping Africa's workforce with competencies that support renewable energy, climate-smart agriculture, sustainable construction, circular-economy systems and low-carbon mobility.

Yet, the analysis equally highlights that the integration of green skills into education and qualifications systems remains at an early stage. National Qualifications Authorities report only moderate levels of greening within NQFs, while institutions face significant capacity constraints in curriculum reform, infrastructure and instructor development. Industry signals strong demand for workers with practical green competences, but graduates frequently lack hands-on experience. Youth express high motivation to participate in green transitions but face barriers related to access, affordability and relevance of training.

The conceptual framework developed in this study clarifies that greening skills in Africa requires action across four interconnected layers: structural enablers, institutional processes, learner-level competences and cross-cutting mechanisms such as RPL, micro-credentials, digital learning and indigenous knowledge systems. Reform must therefore be systemic, coordinated and anchored in evidence-based policy. ACQF II provides a continental platform capable of guiding such transformation by supporting Member States to harmonise standards, strengthen mobility, expand recognition practices and build sustainable skills ecosystems.

Ultimately, this study affirms that Africa's transition to a green economy will succeed only if its skills systems are transformed to match the scale and speed of environmental and economic change. The continent's young population, vibrant informal sector, abundant renewable resources and deep reservoirs of indigenous knowledge position Africa uniquely for leadership in green innovation, provided qualifications systems evolve to recognise, nurture and credential the full breadth of African capacities. The recommendations that follow translate these insights into actionable steps for policymakers, institutions, employers, youth actors and ACQF bodies.

8.0 RECOMMENDATIONS

8.1 Recommendations for National Governments and Policymakers

Governments should integrate green-skills development as a core national priority within education, labour, climate and industrialisation policies. This requires establishing inter-ministerial coordination bodies that align training reforms with environmental and economic strategies. Countries should strengthen labour-market intelligence systems by investing in data collection, forecasting mechanisms and collaboration with industry associations, enabling evidence-driven policy choices. National Qualifications Frameworks should be updated systematically to include sustainability competences, support modular qualifications and embed learning outcomes relevant to green sectors. Policymakers must also create financing instruments to support curriculum reform, infrastructure upgrades, instructor development and digital learning, ensuring that resources reach TVET institutions, universities and community training centres.

8.2 Recommendations for National Qualifications Authorities

NQAs should prioritise the review and revision of occupational standards and qualification descriptors to incorporate sector-specific and transversal green competences. This includes mapping green skills to ACQF levels and ensuring that qualification catalogues explicitly reference sustainability outcomes. NQAs should embed Recognition of Prior Learning (RPL) into national systems as a central, not peripheral, pathway for validating skills gained in informal and indigenous contexts. Strengthening quality assurance processes to include sustainability indicators will improve programme relevance and provider performance. NQAs should participate actively in ACQF peer-learning initiatives and contribute to the development of continental green-competency frameworks.

8.3 Recommendations for Universities, Polytechnics and TVET Centres

Training institutions should adopt institution-wide sustainability strategies that integrate green competences across all programmes rather than limiting them to isolated courses. Curriculum redesign must be supported through structured processes involving industry, community actors and environmental experts. Institutions should expand practical learning infrastructure, including renewable-energy labs, waste-management facilities, climate-smart agriculture demonstration sites, and digital simulation platforms where physical equipment is limited. Educator professional development must become a priority, with targeted programmes on green pedagogies, digital tools, assessment practices and industry-linked technologies. Institutions should also strengthen partnerships with employers to expand apprenticeships, internships and work-based learning.

8.4 Recommendations for Industry and the Private Sector

Industry actors should play a more formalised and proactive role in green-skills development. Employers should collaborate with training institutions to co-design curricula, define occupational competences, offer practical placements, and support instructors with exposure to new technologies. Companies should develop internal green-skills strategies aligned with national climate priorities and contribute to national labour-market intelligence systems by sharing data on emerging jobs and skills shortages. Industry associations can support the establishment of sector skills councils dedicated to green transitions and promote the uptake of green standards and certifications within supply chains.

8.5 Recommendations for Youth Organisations, Students and Community Actors

Youth organisations should be integrated into national and institutional decision-making processes focused on green skills, including curriculum review committees, national dialogue platforms and ACQF-related stakeholder forums. Students need access to clear information on green career pathways, financial support mechanisms and flexible entry points such as micro-credentials and community-based training. Youth-led initiatives in renewable energy, recycling, agroecology and climate advocacy should be supported through innovation grants, mentorship programmes and incubation hubs. Religious and traditional leaders should be engaged as partners in delivering culturally grounded environmental training and in identifying community-held knowledge suitable for RPL.

8.6 Recommendations for ACQF Implementation

The ACQF should continue strengthening the continental architecture for greening skills by developing harmonised sustainability-competency frameworks, expanding the use of RPL across Member States and promoting the referencing of green qualifications. The ACQF Network should prioritise technical assistance for countries in curriculum greening, micro-credentials, digital learning ecosystems and labour-market intelligence. Peer-learning, communities of practice and cross-country exchanges should focus specifically on green transitions, enabling Member States to adapt innovations from early movers. ACQF should also establish mechanisms to support the mobility of learners and workers in green sectors, including the use of digital credentialing tools linked to the ACQF platform.

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Annex A: NQA Green Skills Policy Readiness Index

Table 4. NQA Green Skills Policy Readiness Index

Readiness Level	12-Point Scale Range	Score	Description
Very Low Readiness	1–3	2.0–2.49	Limited awareness of green skills; minimal or implicit consideration within NQA policies and qualification frameworks. Integration is largely ad hoc or exploratory.
Low–Moderate Readiness	4–6	2.5–2.99	Growing policy recognition of green skills with partial and uneven integration into qualification standards and processes.
Moderate–High Readiness	7–9	3.0–3.99	Clear policy intent and structured efforts to incorporate green skills across multiple qualifications, though full institutionalization is still evolving.
Very High Readiness	10–12	4.0	Comprehensive and systematic integration of green skills across qualification frameworks, supported by strong governance and alignment with national sustainability strategies.

Annex B: Students Survey Questionnaire

A. Demography

1. Level of Education

- ☐ Secondary
- ☐ T-VET
- ☐ Undergraduate
- ☐ Post-graduate
- ☐ Other

2. Country

3. Age group

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45+

4. Gender

- ☐ Male
- ☐ Female

B. Questions

1. Have you heard of green skills or green jobs before?

- ☐ Yes, and I understand what they mean
- ☐ Yes, but I'm not sure what they mean
- ☐ No, I haven't heard of them
- ☐ Not sure

2. Where did you learn about them? (Select all that apply)

- ☐ School or university
- ☐ Social media or online platforms
- ☐ TV or radio
- ☐ Friends or family
- ☐ NGOs and youth organizations
- ☐ I haven't learned about them

3. Have you had opportunities at your institution to learn about sustainability or green skills?

- ☐ Yes, many
- ☐ Yes, a few
- ☐ No, not yet
- ☐ Not sure

4. How effective were those experiences?

- ☐ Very effective
- ☐ Somewhat effective
- ☐ Not effective
- ☐ Not applicable

5. Do you think your current education or training program is preparing you for a green and sustainable future?

- ☐ Yes, very well
- ☐ Somewhat
- ☐ Not really
- ☐ Not at all
- ☐ Not sure

6. Do you believe acquiring green skills will improve your chances of getting a job?

- ☐ Yes, definitely
- ☐ Maybe
- ☐ No
- ☐ Not sure

7. Do you feel your education or training is aligned with what employers need in terms of green skills?

- ☐ Yes, very much
- ☐ Somewhat
- ☐ Not really
- ☐ Not at all
- ☐ I don't know

8. What would improve the connection between education and job market needs? (Select all that apply)

- ☐ Industry internships and partnerships
- ☐ Updated curriculum
- ☐ Guest speakers from industry
- ☐ Access to green technology tools
- ☐ Career counselling on green jobs

9. What challenges do you face in accessing training or jobs in green sectors? (Select all that apply)

- ☐ Lack of information
- ☐ Training is too expensive
- ☐ Courses not available in my area
- ☐ Not enough jobs in my region
- ☐ Lack of support from school/community
- ☐ Other (please specify)

10. Would you consider a career in the green economy (e.g., renewable energy, eco-business)?

- ☐ Yes, absolutely
- ☐ Maybe, depending on the opportunities
- ☐ No
- ☐ Not sure

11. What motivates or discourages you from doing so? (Select all that apply)

- ☐ Passion for the environment
- ☐ Income potential
- ☐ Family expectations
- ☐ Lack of information
- ☐ No clear career path

12. How can green skills training be made relevant for youth in informal or self-employed work? (Select all that apply)

- ☐ Short, flexible courses
- ☐ Mobile or online learning
- ☐ Local community-based programs
- ☐ Training in local languages
- ☐ Support for eco-entrepreneurship
- ☐ I'm not sure

13. What types of green technologies have you seen or heard about in your community? (Select all that apply)

- ☐ Solar panels
- ☐ Rainwater harvesting systems
- ☐ Waste recycling programs
- ☐ Eco-friendly farming methods
- ☐ Clean cookstoves
- ☐ Other (please specify)
- ☐ I haven't seen any

14. How confident are you in using or learning green technologies?

- ☐ Very confident
- ☐ Somewhat confident
- ☐ Not confident
- ☐ Not sure

15. Do you feel young people have a say in climate action and green skills development in your country?

- ☐ Yes, we are actively involved
- ☐ A little, but not enough
- ☐ Not at all
- ☐ I'm not sure

16. What would improve youth involvement? (Select all that apply)

- ☐ Youth advisory councils
- ☐ Consultations at schools or universities
- ☐ Support for youth-led initiatives
- ☐ Training on advocacy and leadership
- ☐ More information on policies

Thank you for your time and valuable input

Annex C: National Qualification Authorities Survey Questionnaire

A. Demography

1. What is your current position?

2. Country

3. Age Group

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45+

4. Gender

- ☐ Male
- ☐ Female

B. Multiple-Choice Questions

1. To what extent are green skills and sustainability competencies reflected in your National Qualifications Framework (NQF)?

- ☐ Not at all
- ☐ Minimally reflected
- ☐ Moderately integrated in some sectors
- ☐ Fully integrated across sectors
- ☐ Not sure

2. Are there efforts to update or expand these qualifications?

- ☐ Yes, ongoing reforms
- ☐ Yes, planned reforms
- ☐ No current efforts
- ☐ Not sure

3. How well aligned is your qualifications framework with your country's green economy or climate transition strategies?

- ☐ Fully aligned
- ☐ Partially aligned
- ☐ Minimally aligned
- ☐ Not aligned
- ☐ Not sure

4. What improvements are needed? (Select up to 3)

- ☐ Stronger inter-ministerial coordination
- ☐ Updated occupational standards
- ☐ More industry involvement
- ☐ More funding and technical support
- ☐ Access to better labour market data
- ☐ Other (please specify)

5. What mechanisms are in place to match green job qualifications with labour market demands? (Select all that apply)

- ☐ Sector skills councils
- ☐ Labour market forecasting tools
- ☐ Job standards aligned with NQF
- ☐ No formal mechanism
- ☐ Other (please specify)

6. How are green skills from informal or non-traditional training recognized by your NQF?

- ☐ Through Recognition of Prior Learning (RPL)
- ☐ Through skills testing and certification
- ☐ Not formally recognized
- ☐ Not applicable / Not sure
- ☐ Other (please specify)

7. How does your authority collaborate to integrate green skills into sectoral qualifications? (Select all that apply)

- ☐ Joint working groups with ministries
- ☐ Consultation with training institutions
- ☐ Public-private partnerships
- ☐ Technical committees with industry
- ☐ No collaboration in place
- ☐ Other (please specify)

8. How are labour market data and green skills needs assessments used to update qualifications?

- ☐ Systematically and regularly
- ☐ Occasionally, project-based
- ☐ Rarely used due to data gaps
- ☐ Not used at all
- ☐ Not sure

9. What challenges exist in accessing this data? (Select all that apply)

- ☐ Lack of updated data
- ☐ Limited disaggregation for green sectors
- ☐ Weak institutional coordination
- ☐ No national green jobs framework
- ☐ Other (please specify)

10. Does your institution have sufficient capacity to mainstream green skills across qualifications?

- ☐ Yes, sufficient technical and financial capacity
- ☐ Partially sufficient (technical or financial only)
- ☐ No, capacity is limited

11. What support would help accelerate progress? (Select up to 3)

- ☐ More funding and resources
- ☐ Technical training and expertise
- ☐ International support/partnerships
- ☐ National policy directives
- ☐ Access to research and data
- ☐ Other (please specify)

12. How do you engage stakeholders in developing green-related qualifications? (Select all that apply)

- ☐ Employer or industry working groups
- ☐ Education and training institution feedback
- ☐ Civil society consultations
- ☐ Youth engagement platforms
- ☐ Stakeholder engagement is limited
- ☐ Other (please specify)

13. What quality assurance mechanisms are used for green skills training? (Select all that apply)

- ☐ Accreditation and institutional audits
- ☐ Periodic curriculum reviews
- ☐ Competency-based assessments
- ☐ Benchmarking to international standards
- ☐ No specific mechanisms for green skills
- ☐ Other (please specify)

14. What are the biggest policy or system gaps preventing faster green skills integration? (Select up to 3)

- ☐ Insufficient political prioritization
- ☐ Funding and resource limitations
- ☐ Lack of technical expertise
- ☐ Poor inter-sectoral coordination
- ☐ Weak employer involvement
- ☐ Data and research gaps
- ☐ Other (please specify)

15. What actions should be prioritized to overcome them? (Select up to 3)

- ☐ National Green Skills Strategy
- ☐ Recognition of informal skills
- ☐ Employer and sector engagement
- ☐ Curriculum development tools
- ☐ Research on future green jobs
- ☐ Increased donor or partner collaboration
- ☐ Other (please specify)

Annex D: University, TVET Centre and Poly Techniques Survey Questionniare

A. Demography

1. What is your current position?

2. Country

3. Age Group

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45+

4. Gender

- ☐ Male
- ☐ Female

5. Type of institution

- ☐ University
- ☐ Polytechnic
- ☐ TVET Centres
- ☐ Other

B. Questions

1. To what extent are green skills integrated into your curriculum/training programs?

- ☐ Not at all
- ☐ Minimally integrated
- ☐ Moderately integrated
- ☐ Fully integrated across all programs
- ☐ Not sure

2. What steps are being taken to make green skills more central and cross-cutting? (Select all that apply)

- ☐ Curriculum review or reform
- ☐ Faculty training and development
- ☐ Partnerships with environmental organizations
- ☐ Policy directives from the government
- ☐ None
- ☐ Other (please specify)

3. How often do you engage with the industry to align with green job requirements?

- ☐ Never
- ☐ Occasionally (annually or less)
- ☐ Frequently (quarterly or more)
- ☐ Very frequently (ongoing collaboration)
- ☐ Not sure

4. What are the biggest barriers to scaling up green skills training? (Select up to)

- ☐ Lack of funding
- ☐ Limited infrastructure
- ☐ Shortage of qualified staff
- ☐ Low institutional prioritization
- ☐ Inadequate curriculum content
- ☐ Lack of industry demand
- ☐ Other (please specify)

5. Has your institution adopted micro-credentials or modular training for green skills?

- ☐ Yes, fully adapted
- ☐ Yes, in pilot stages
- ☐ No, but under consideration
- ☐ No plans currently
- ☐ Not familiar with the concept

6. How are informal green skills (e.g., in agriculture, waste, energy) recognized?

- ☐ Through formal certification programs
- ☐ Through assessment centres or RPL (Recognition of Prior Learning)
- ☐ Not formally recognized
- ☐ Not applicable
- ☐ Other (please specify)

7. How well do your training offerings align with national / continental climate policies (e.g., AfCFTA, Agenda 2063)?

- ☐ Fully aligned
- ☐ Somewhat aligned
- ☐ Not aligned
- ☐ Not sure

8. Which of these actors do you collaborate with to promote green skills? (Select all that apply)

- ☐ Government ministries or agencies
- ☐ Other educational institutions
- ☐ Private sector partners
- ☐ NGOs or international organizations
- ☐ None
- ☐ Other (please specify)

9. What strategies has your institution used to support informal sector workers in gaining green skills? (Select all that apply)

- ☐ Short-term training programs
- ☐ Community outreach initiatives
- ☐ Public-private partnerships
- ☐ On-the-job training or apprenticeships
- ☐ We have not yet implemented such strategies
- ☐ Other (please specify)

10. How do you assess the impact of green skills programs on employment and sustainability outcomes? (Select all that apply)

- ☐ Employment tracking of graduates
- ☐ Community feedback and surveys

- ☐ Partnerships with employers for feedback
- ☐ Internal performance reviews
- ☐ We currently do not assess the impact
- ☐ Other (please specify)

Annex E: Industry Leaders Survey Questionniare

A. Demography

1. What is your current position?

2. Country

3. Age Group

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45+

4. Gender

- ☐ Male
- ☐ Female

B. Questions

1. Are you familiar with the concepts of "green skills" or "green jobs"?

- ☐ Yes, and I clearly understand them
- ☐ Yes, but my understanding is limited
- ☐ No, I haven't encountered these terms before
- ☐ Unsure

2. How did you first learn about green skills or green jobs? (Select all that apply)

- ☐ Industry training or professional seminars
- ☐ Online resources or industry reports
- ☐ Media (TV, radio, newspapers)
- ☐ Professional networks or colleagues
- ☐ Engagement with NGOs or international organizations
- ☐ I have not learned about them formally

3. Does your organization provide training or opportunities related to sustainability or green skills?

- ☐ Yes, extensively
- ☐ Yes, but limited
- ☐ No, not currently
- ☐ Unsure

4. How effective have these training or learning experiences been for your employees?

- ☐ Very effective
- ☐ Somewhat effective
- ☐ Not effective
- ☐ Not applicable

5. Do you believe current education and vocational training programs adequately prepare youth for careers in a green and sustainable economy?

- ☐ Yes, very adequately
- ☐ Somewhat adequately
- ☐ Not sufficiently
- ☐ Not at all
- ☐ Unsure

6. From your industry perspective, do you think acquiring green skills significantly improves an individual's employability?

- ☐ Yes, definitely
- ☐ Maybe
- ☐ No
- ☐ Unsure

7. Is there alignment between the skills taught in current educational / training programs and the green skills demanded by your industry?

- ☐ Yes, very closely aligned
- ☐ Somewhat aligned
- ☐ Poorly aligned
- ☐ Not aligned at all
- ☐ Not sure

8. What measures would improve the alignment between educational programs and industry needs for green skills?(Select all that apply)

- ☐ Increased industry-education partnerships
- ☐ Regular updates to educational curricula
- ☐ Industry experts participating in educational activities
- ☐ Enhanced access to practical green technologies
- ☐ Career counseling focused on green industry careers

9. What are the primary challenges in hiring talent with adequate green skills? (Select all that apply)

- ☐ Shortage of qualified candidates
- ☐ Limited availability of training programs
- ☐ Skills mismatch or outdated training
- ☐ High salary expectations due to scarcity of skilled talent
- ☐ Lack of information dissemination about available opportunities
- ☐ Other (please specify)

10. Does your organization actively encourage careers or positions dedicated specifically to green economy roles (e.g., renewable energy, sustainable practices)?

- ☐ Yes, extensively
- ☐ Yes, but limited
- ☐ Not at the moment, but considering it
- ☐ No, not at all
- ☐ Unsure

11. What motivates or discourages your organization from investing more in green jobs or sustainability initiatives? (Select all that apply)

- ☐ Commitment to environmental responsibility
- ☐ Potential for financial returns
- ☐ Regulatory compliance
- ☐ Lack of clarity on economic benefits
- ☐ Uncertainty about long-term viability

12. How can green skills training be made relevant to informal or small-scale enterprises? (Select all that apply)

- ☐ Short, flexible, targeted training modules
- ☐ Mobile and online learning platforms
- ☐ Community-driven, localized training programs
- ☐ Training delivered in local languages
- ☐ Support for green entrepreneurship initiatives
- ☐ Unsure

13. Which types of green technologies have your organization implemented or encountered in your business community? (Select all that apply)

- ☐ Solar energy systems
- ☐ Water conservation and rainwater harvesting systems
- ☐ Waste recycling and circular economy practices
- ☐ Sustainable agricultural or manufacturing practices
- ☐ Energy-efficient production methods
- ☐ Other (please specify)
- ☐ We have not implemented any

14. How confident is your organization in integrating and effectively utilizing green technologies?

- ☐ Very confident
- ☐ Moderately confident
- ☐ Slightly confident
- ☐ Unsure
- ☐ Not confident

15. Do you think young people have sufficient opportunities to influence climate policy and green skills development strategies within your industry or country?

- ☐ Yes, actively involved
- ☐ To some extent, but insufficiently
- ☐ Not involved at all
- ☐ Unsure

16. What approaches would enhance youth involvement in sustainability and climate action within your industry? (Select all that apply)

- ☐ Establishment of youth advisory councils
- ☐ Industry consultations at educational institutions
- ☐ Support for youth-led sustainability initiatives
- ☐ Training in advocacy and leadership related to sustainability

Improved communication on relevant policy issues

Annex F: Religious and Traditional Leader Survey Questionnaire

A. Demography

1. What is your current position?

2. Country

3. Age Group

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45+

4. Gender

- ☐ Male
- ☐ Female

B. Questions

1. How would you describe your understanding of climate change and the importance of green skills in your community?

- ☐ Very clear: I understand both topics well
- ☐ Somewhat clear: I know a little about them
- ☐ Not clear: I need more information
- ☐ I've never heard of green skills or climate change

2. In what ways can traditional knowledge or cultural practices support sustainable livelihoods in your community? (Select all that apply)

- ☐ Organic farming and local food systems
- ☐ Water conservation and land management
- ☐ Herbal medicine and eco-friendly products
- ☐ Community-led waste management
- ☐ I'm not sure

3. What role can you personally play to inspire youth to adopt green jobs and sustainable practices? (Select all that apply)

- ☐ Organize awareness programs
- ☐ Serve as a mentor or role model
- ☐ Share local success stories
- ☐ Partner with schools or local leaders
- ☐ I don't feel empowered to take action

4. Are there existing community practices that align with sustainability and could be formalized through education?

- ☐ Yes, and they are already being integrated
- ☐ Yes, but they are not yet included in education
- ☐ No, but we are open to exploring options
- ☐ I don't know

5. How aware are people in your community about climate change and green issues?

- ☐ Very aware and active
- ☐ Somewhat aware
- ☐ Not very aware
- ☐ Not aware at all

6. What could improve this awareness? (Select all that apply)

- ☐ Community workshops and training
- ☐ Radio or social media campaigns
- ☐ School-based programs
- ☐ Leadership from traditional authorities
- ☐ Religious or cultural messaging

7. What are the biggest barriers to adopting eco-friendly technologies in your community (e.g., solar power, clean cookstoves)? (Select all that apply)

- ☐ High cost
- ☐ Lack of awareness
- ☐ Cultural resistance
- ☐ Lack of technical support
- ☐ Poor access to electricity or internet

8. How can local or national governments ensure that green skills training reaches remote or marginalized areas? (Select all that apply)

- ☐ Mobile training teams
- ☐ Community radio or local language learning
- ☐ Partnerships with local leaders or NGOs
- ☐ Funding for local training centers
- ☐ I'm not sure

9. What cultural or social factors might prevent people from joining green skills programs? (Select all that apply)

- ☐ Gender roles or biases
- ☐ Resistance to new ideas
- ☐ Lack of family support
- ☐ Language barriers
- ☐ Belief that green jobs don't pay well

10. How can these be addressed? (Select all that apply)

- ☐ Inclusive program design
- ☐ Local language instruction
- ☐ Involvement of elders and religious leaders
- ☐ Success stories and role models

11. How can green skills be introduced to people working in the informal sector (e.g., artisans, small farmers, traders)? (Select all that apply)

- ☐ Through practical, hands-on training
- ☐ Peer learning and apprenticeships
- ☐ Mobile or pop-up training events
- ☐ Recognition of traditional skills as green skills
- ☐ I'm not sure

12. How can government and industries support the green transition in your community? (Select all that apply)

- ☐ Promote and invest in green jobs
- ☐ Encourage environmental responsibility
- ☐ Advocate for fair access to training
- ☐ Involve youth in decision-making
- ☐ Work with governments to fund green programs

ACQF
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