



D5.2. Impact Assessment Report

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Abstract	This deliverable intends to present the overall impact of the GreenVETAfrica both on the participants and the partner organizations as well as in the broader community in partner countries, including recommendations for future projects.
Keywords	Impact, Ghana, Nigeria, employability, skills, curriculum development, stakeholder collaboration, policy integration.



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EXECUTIVE SUMMARY

This report compiles the findings and insights gained from the impact assessment of the GreenVETAfrica (GVA) project. The data presented here is the result of a comprehensive methodology designed to ensure thorough data collection, both prior to and following the implementation of the project's key activities.

GreenVETAfrica has proven to be a highly successful initiative, making a significant impact in two African countries—Ghana and Nigeria—by addressing critical skills gaps in the field of green waste management. Through targeted vocational education and training (VET) programme, the project not only improved the competencies of teachers and students but also fostered sustainable collaborations with local stakeholders, including policymakers, companies, and community organizations.

In addition to its achievements in Africa, GVA facilitated valuable knowledge exchange between European and African partners. The project provided European partners with deeper insights into local challenges and VET landscapes in Ghana and Nigeria, while also enabling African partners to gain experience in EU project management and methodologies. This mutual learning experience has strengthened capacities across the consortium, creating a robust foundation for continued collaboration and future initiatives.

The findings outlined in this report demonstrate the project's effectiveness in enhancing employability, aligning education programs with labor market needs, and fostering sustainable development in the green economy. These results reflect the broader impact of GreenVETAfrica and its potential to inspire similar capacity-building efforts in other regions.

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ABBREVIATIONS

GVA – Green VET Africa

VET – Vocational Education and Training

WBL - Work-Based Learning

AU – African Union

TVET – Technical and Vocational Education and Training

LAWMA – Lagos Waste Management Authority

MS – Milestone

DIH – Digital Innovation Hub

WA – West Africa

GWM – Green Waste Management

ICT – Information and Communication Technology

SMEs – Small and Medium Enterprises

NCRST - National Commission on Research, Science and Technology (Namibia)

EU - European Union

Erasmus+ - Erasmus Program (EU's education, training, youth, and sport program)

CNOS-FAP - Centro Nazionale Opere Salesiane - Formazione e Aggiornamento Professionale (Italy)

MSMEs - Micro, Small, and Medium Enterprises

PAUF - Pan African University Foundation

PRSD - Presbyterian Relief Service Department

RVTI - Rural Vocational Training Institute

ToT - Training of Trainers

COVE - Center of Vocational Excellence

SHS - Senior High School

IIT - Industrial and Technological Institute

1. INTRODUCTION

The GreenVETAfrica (GVA) project is a transformative initiative designed to propel the dual green and digital transitions in West Africa, particularly in Nigeria and Ghana, by addressing critical gaps in vocational education and training (VET) related to sustainable waste management and green job creation. In alignment with the European Green Deal and the Europe-Africa strategic partnership, GVA reflects a strong commitment to environmental sustainability and socio-economic development through skills enhancement.

Recognising that many teachers in these regions have only a basic understanding of green waste management—data from our research shows that at least 48% of teachers had not received any previous training on Green Waste Management—the project offers a significant opportunity to introduce comprehensive, tailored curricula that address this knowledge gap. Remarkably, 100% of teachers interviewed expressed a desire for training in this field, underscoring the demand for initiatives like GVA.

The key aim of the project was to develop and pilot a comprehensive Green Waste Management programme for TVET sector, starting with capacity-building initiatives primarily targeted at teachers. In the second phase, these trained educators delivered tailored training programs for students, which were further enriched by internships in sector-specific companies, providing practical, hands-on experience to complement the theoretical knowledge. This document compiles the key findings, and highlights the significant impact achieved through the project's activities, addressing essential areas of progress and success.

State of Art before the GVA Project in Ghana and Nigeria:

Participant Profile and Pedagogical Capacity: The GVA project engaged 39 educators with an average of seven years of teaching experience. While most had pedagogical training, there was a strong desire for further development, particularly in competency-based training, communication, and online learning. A notable challenge was the lack of individualized learning paths, which should be addressed to better meet diverse student needs. **Digital Pedagogy and Technological Integration:** Although 68% of teachers were familiar with digital pedagogy, many lacked formal training and faced technological challenges, including limited classroom internet access. While tools like Zoom and Google Classroom were widely used during the pandemic, ongoing adoption is hindered by connectivity issues, highlighting a need for better digital infrastructure and skills development. **Green Waste Management Knowledge:** Participants showed limited knowledge of green waste management, with 67% rating their understanding as basic. However, 100% expressed interest in receiving training in this area, providing a clear opportunity for GVA's green curricula to enhance sustainability knowledge within VET programs. **Micro-Entrepreneurship and Economic Empowerment:** Although 68% of participants had received micro-entrepreneurship training, only 40% had practical experience. Incorporating hands-on entrepreneurial components, the VET curricula could foster green entrepreneurship and contribute to sustainable economic growth and local MSME development. **Challenges and Opportunities in Educational Delivery:** Teachers faced challenges such as large class sizes, limited resources, and outdated assessment methods, which impacted student engagement and motivation. Addressing these challenges through improved resources and pedagogical support, along with enhancing educators' mentorship and emotional intelligence, is crucial to improving educational outcomes.

2. METHODOLOGY

The methodology for this impact assessment is grounded in the original project proposal submitted to the European Commission and enriched by data collected throughout the implementation period. It follows a structured, objective-driven approach that aligns with the overarching goals of the vocational education and training program introduced in partner countries' VET centers.

The assessment evaluates both short-term and long-term impacts on key areas such as skills development, curriculum innovation, industry collaboration, and socio-economic contributions to local labor markets in Nigeria and Ghana. This comprehensive methodology ensures a holistic understanding of the project's effectiveness as well as its potential to drive sustainable growth within the region. The impact analysis was structured around the following objectives:

1. **Measuring the impact on VET teachers in Nigeria and Ghana:** Analyzing the relevance of the co-created curriculum and methodologies to their local context and sector, examining how it has enhanced their teaching skills and practices, and evaluating the transferability of these competencies into their everyday teaching activities.
2. **Evaluating the impact on students:** Assessing how the combination of theoretical and practical training, along with internships in sector-specific companies, has improved students' employability, created new job opportunities, and provided context-specific knowledge. This knowledge equips young people to pursue careers in the green economy and positions them as agents of change in their communities.
3. **Assessing the curriculum's suitability:** Determining whether the curriculum aligns with local context, industry demands, and national strategies. This includes evaluating its potential to influence future developments, such as policy decisions, certification frameworks, sectoral growth, or the establishment of a national curriculum in green waste management.
4. **Exploring the impact on partners and stakeholders:** Understanding how international collaboration has benefited project partners and stakeholders through multicultural teamwork, international exchanges, and the transfer of knowledge and best practices. This involves analyzing whether the project has improved their organizational approaches and introduced sustainable changes to their ways of working.

2.1. IMPACT ASSESSMENT FRAMEWORK

Specific key areas of focus for the impact assessment were defined in the project proposal. The table below highlights the key findings and insights derived from the implementation of the programme in both Ghana and Nigeria, defining the areas and means of evaluation.

Table 1: Impact Assessment Framework

Evaluation level	What has been evaluated	How was it evaluated?	Key outcomes
Learning	Effectiveness of training in developing competences for both trainers and learners.	- Evaluation of the learning process through projects and practical assignments - Observation of performance in the field or classroom.	Identification of skill improvements and gaps in competence development.
Reaction (Satisfaction)	Assessment of the training	- Questionnaires for	Students, teachers and

	relevance, teacher's/facilitators performance, organization, methodology, and objective achievement.	trainers and students.	facilitators feedback on training quality and areas for enhancement. Valuable insights into participants' preferences and perceived barriers to learning
Transfer (Applicability)	The extent to which lessons learned are applied in practice, especially by trainers, and the changes produced by the training.	- Quantitative surveys for teachers, students and hosting companies. - Qualitative one-to-one interviews.	Evidence of broader socio-economic impact, such as improved employability, entrepreneurial activity, and industry collaboration. Demonstrated ability to apply training concepts in real-world scenarios. Enhanced collaboration between learners and industry stakeholders.
Impact	- Trainers' confidence and motivation in using digital tools for teaching. - Learners' access to job opportunities or micro-business creation. - Industry engagement in developing new training modules or hiring learners.	- Quantitative surveys for teachers, students and hosting companies - Qualitative one-to-one interviews.	Evidence of broader socio-economic impact, such as improved employability, entrepreneurial activity, and industry collaboration. Strengthened partnerships between training institutions and industry sectors.

2.2. DATA COLLECTION METHODS & REPORTING

To collect data effectively, the project employed pre-established methodologies that were further refined and adapted for each activity. The methodologies utilised included:

- **Surveys & Questionnaires:** Pre- and post-training surveys were conducted with teachers, trainers, learners, and employers to identify skills gaps, measure learning outcomes, and evaluate the overall impact of the training programs.
- **Interviews:** VET providers, industry experts and other stakeholders were interviewed to assess the program's alignment with local needs and its potential impact on policy and practice.
- **Focus Groups:** Focus group discussions were organized with VET trainers, learners, and industry professionals to gather in-depth qualitative feedback on the relevance of the training content and its alignment with labor market requirements.
- **Impact Assessment Reports:** Detailed reports were prepared to monitor and analyze the program's effects on skills development, employability, and curriculum innovation. These reports incorporated both quantitative and qualitative data to highlight strengths and areas for

improvement (D3.2. Train the Trainers Report & D4.2 Pilot Programme Evaluation and Report on GreenVETAfrica VET Providers Meeting, October 23, 2024).

- **Follow-Up Data Collection in consortium:** Long-term impact was monitored through follow-up surveys conducted 6 months and after program completion. These surveys were distributed online by each organization and supported by a final impact assessment workshop held during the closing conference in Lagos. For analysis and reporting, the consortium implemented a multi-faceted approach, incorporating both qualitative and quantitative methodologies, as well as comparative analysis between Ghana and Nigeria:
- **Quantitative Analysis:** Data from surveys, employment statistics, and curriculum development metrics were analyzed to evaluate the program's overall effectiveness in achieving its objectives.
- **Qualitative Analysis:** Feedback from key stakeholders—including trainers, learners, employers, and policymakers—was assessed to understand how the program influenced VET systems, skills development, and alignment with national policies.
- **Comparative Analysis:** A comparative analysis of the pre- and post-program status of learners, VET providers, and policy frameworks was conducted to measure the improvements achieved in both Ghana and Nigeria.

This comprehensive approach ensured that the impact assessment captured the programme's multifaceted effects and provided actionable insights for future initiatives.

3. IMPACT ON PROJECT GENERAL PROJECT OBJECTIVES

3.1. GENERAL OBJECTIVES, EXPECTED OUTPUTS AND GVA

In this section, we will describe the General objectives defined in the Project proposal and analyze the overall impact of projection stakeholders. The last column has been incorporated in this report with the aim to illustrate the real results after 2 years of the project implementation, regarding each one of the objectives.

Table 2: General Objectives, Expected Outputs and GVA Impact

General Objective	Expected Outputs	Relevant Outputs	Project Results
Reinforce links between VET systems and the labor market	Nigerian and Ghanaian VET providers and experts collaborate with Italian and Spanish VETs, green waste management industry (LAWMA), and digital skills providers (WA) to create twin transition VET programs.	MS2.1, D2.1, D2.2	<ol style="list-style-type: none"> 1. Secured accreditation for green VET courses in Nigeria and ongoing integration and recognition of the GVA modules in the Ghanaian newly launched Green Waste Management training programme (CTVET). 2. Curriculum development based on skills gap analysis, addressing emerging needs.
Align VET profiles with local, regional, and national strategies	GVA aligns with Ghana and Nigeria's green economy policies and the EU-Africa R&I roadmap. GVA will analyze skill gaps, fostering an EU-AU and AU-AU knowledge network.	D2.3, D5.1, Event 1, Event 2, six thematic webinars	<ol style="list-style-type: none"> 1. Increased policymaker awareness of the need for twin transition skills. 2. Strengthened collaboration between VETs and academic institutions on transition research. 3. Enhanced cooperation between DIHs and VETs in digital skill development.
Increase capacities of VET providers	Capacity-building activities in digital didactics, green waste management, and micro-entrepreneurship led by international experts for VETs in Ghana and Nigeria.	MS3.1, D3.1, D3.2	<ol style="list-style-type: none"> 1. Leveraged expertise of CNOS-FAP and MUNDUS for quality VET development, especially on Green subjects. 2. Created eLearning and hybrid programs with Remote Expert Solution. 3. Established quality evaluation methods and network-building activities.

Expose VET staff to labor market-oriented approaches	GVA strengthens PAUF and PRSD's existing dual-learning approach through a labor market and skill gap analysis, expanding Green Waste Management supply chain connections with LAWMA and matchmaking.	MS2.1, D2.2, WP2	<ol style="list-style-type: none"> 1. Developed industry-specific courses. 2. Established demand-based, tailored courses. 3. Strengthened VET-DIH collaboration for digital upskilling and tech-driven education.
Improve VET teachers' knowledge and skills	Capacity-building for VET providers in pedagogical, digital, and technical skills for green waste management.	MS3.1, D3.1, D3.2	<ol style="list-style-type: none"> 1. Enabled VETs to develop new eLearning and hybrid programs. 2. Improved training quality evaluation capabilities using GVA methodology. 3. Shared resources (open-source analyses, learning materials) with other VET providers.
Integrate feedback from stakeholders into curriculum development	Skills gap and needs analysis (WP2), impact analysis based on feedback from teachers, learners (WP4), and impact assessment (WP5).	MS2.1, D2.2, D2.3, D5.2	<ol style="list-style-type: none"> 1. Made pilot training materials and improvement suggestions available as open-source. 2. Provided open-source impact assessment report to support curriculum replication and adaptation.
Improve VET learners' skills and employability	Developed curricula addressing demand-supply gaps, with context-adaptable VET programs.	Event 1, Event 2, D4.1, D4.2, MS4.2	<ol style="list-style-type: none"> 1. Equipped 100 youth with industry-relevant skills. 2. Implemented a matchmaking activity for job market integration. 3. Targeted outcome: 20% of learners employed within six months post-project.
Foster global cooperation through joint initiatives	Collaborative efforts among 7 partners from 4 countries (2 EU, 2 AU), promoting knowledge and best practice sharing.	Event 1, Event 2, E1.1–E1.4, D5.2, dissemination and communication KPIs	<ol style="list-style-type: none"> 1. Facilitated partnerships and collaboration opportunities. 2. Initiated joint applications for funding and project development. 3. Targeted outcome: secure 500,000 Euros for future projects.

3.2. PROJECT IMPACT BY COUNTRY: NIGERIA

Table 3: GVA Impact in Nigeria

General Objective	Before the Project	After the project
Reinforce links between VET systems and the labor market	Lack of connection between TVET training providers and stakeholders in the local waste management sector.	Relevant skills and training modules have been developed for an emerging market that is generating job opportunities. Initial links have been formed between TVET providers and stakeholders in the waste management sector.
Align VET profiles with local, regional, and national strategies	A lack of skilled personnel in the waste management sector created obstacles to effectively implementing strategies at local, regional, and national levels.	Enhanced expertise gained through TVET training has strengthened the capacity to implement local and regional strategies, such as the ban on single-use plastics, through a focus on raising awareness and building necessary skills.
Increase capacities of VET providers	Insufficient opportunities for training trainers to enhance capacity building in the waste management sector. No specific programs for the VET sector.	Enhanced ability of VET providers to leverage opportunities for strengthening the skills and expertise of trainers.
Expose VET staff to labor market-oriented approaches	Reduced awareness of potential prospects and opportunities within the waste management sector.	Greater awareness has sparked heightened interest in leveraging opportunities within the waste management (WM) sector. Additionally, there is an enhanced ability to establish partnerships with WM companies and other key stakeholders.
Improve VET teachers' knowledge and skills	Insufficient pedagogical knowledge and skills necessary for effectively upskilling individuals in the waste management sector.	Enhanced teaching methods and expertise for trainers in preparing individuals for the waste management sector.
Integrate feedback from stakeholders into curriculum development	No established TVET programs focused on waste management.	Engagement with stakeholders, along with employment profile and skills gap reports, contributed to the development of the curriculum for waste management training at TVET institutions.
Improve VET learners' skills and employability	There was no national TVET certification in waste management (WM) due to the limited availability of WM training programs.	The development of a TVET program in waste management (WM) resulted in the creation of a nationally recognized certification, which enhances the employability prospects of practitioners in the sector.
Foster global cooperation through joint initiatives	Restricted regional collaboration on TVET training in the waste management sector.	Enhanced cooperation has resulted in the establishment of international partnerships that focus on TVET training in the waste management sector.

3.3. PROJECT IMPACT BY COUNTRY: GHANA

Table 4: GVA Impact in Ghana

General Objective	Before the Project	After the project
Reinforce links between VET systems and the labor market	There was no formal Green Waste Management program in place. While the waste management sector is expanding, it lacked certifications and specialized training, resulting in an informal industry. However, with proper preparation, a skilled, equipped workforce could unlock significant employment potential.	Trainers have gained new skills, and awareness has been raised about Green Waste Management (GWM). A curriculum for GWM has been developed and recognised by the competent authorities, and training modules are now available and open-source. As a result, learners have acquired essential skills in GWM, equipping them to contribute effectively to the sector.
Align VET profiles with local, regional, and national strategies	Lack of expertise in project management and consortium management.	Through regular consortium and collaboration meetings, we have developed project management skills, including financial reporting, conducting meetings, meeting deadlines, and collaborating effectively within a consortium.
Increase capacities of VET providers	No engagement with international partners in Erasmus+ and no exchange of good practices.	Successfully enhanced VET (PRSD) and Digital Innovation Hub (Whizzy Academy) staff's capacity by incorporating pedagogical skills through a competency-based approach. Additionally, various digital tools, such as Google tools for learning, have been introduced to both their staff and teachers. As a result, more opportunities have become accessible and available.
Expose VET staff to labor market-oriented approaches	Conventional training methods and a lack of innovation in education.	The initiative fostered the adoption of best practices for task execution, developing comprehensive training modules, and strengthening relationships between TVET providers, learners, and the industry. Additionally, efforts were made to recruit trainers from other TVET institutions, which helped strengthen the local network and enhance the overall training ecosystem.

Improve VET teachers' knowledge and skills	There was no communication or interaction between the actors in the field of Green Waste Management.	The capacity of teachers has been strengthened to foster better relationships, with a methodology established to gather input from all relevant stakeholders. The development of the GWM curriculum took into account the knowledge and perspectives of teachers, TVET learners, and industry professionals.
Integrate feedback from stakeholders into curriculum development	The competence, skills, and employability potential of VET learners in the waste management sector were previously insufficient, limiting their ability to effectively contribute to the industry and meet its growing demands.	The competencies, skills, and employability potential of VET learners have significantly improved, enhancing their readiness for the workforce and increasing their ability to meet industry demands effectively.
Improve VET learners' skills and employability	Before GVA There were no nationally TVET certification in Waste Management due to limited training on Waste management in any of the targeted countries.	Through collaboration with countries like Nigeria, Spain, and Italy, valuable lessons were learned, fostering the exchange of knowledge, strategies, and best practices in Global Waste Management (GWM). This international partnership helped to enhance waste management approaches by integrating diverse perspectives and expertise, promoting more effective and sustainable solutions. Also, the regional cooperation between Nigeria and Ghana, engaging VET centres and companies and knowledge sharing allowed the partners to create powerful VET programs for the Waste Management sector Strengthening of a network of companies at local and regional level to foster the school to work transition of VET learners.
Foster global cooperation through joint initiatives	There was no regional collaboration on TVET training in the waste management sector.	Enhanced cooperation has resulted in the establishment of international partnerships that focus on TVET training in the waste management sector.

3.4 PROJECT SPECIFIC OBJECTIVES, ACTIVITIES, INDICATORS, PREVIOUS STATUS AND OUTCOMES

Table 5: Project Specific objectives, activities and indicators

Specific Objective (SO)	Activity/action	Indicators/Outputs	Previous Status/Gap	Target/Outcome	Project Results
SO1: Conduct research on Green Waste Management and Micro-Entrepreneurship skills in 2 African countries	Research and skill needs analysis using a hybrid top-down/bottom-up approach	1 exhaustive research report on context and skill gaps within green waste management skills for Nigeria and Ghana	No specific research found on the topic	1 report on context and skill gaps in Green Waste Management in Nigeria and Ghana	<u>Deliverable D2.3</u>
SO2: Develop a four-pronged capacity building program for VET trainers	Upskilling of VET trainers, managers, and counselors	No. of trainers/VET managers and counselors upskilled	PAUF and PRSD trainers lack pedagogical didactic skills; have technical/industrial teaching experience	50 trainers (25 in Nigeria, 25 in Ghana); 6 managers and 6 counselors	60 trainers completed the training (41 received the certificate as they attended at least 70% of the sessions)
SO3: Design and pilot ICT-driven Green Waste Management and Green Entrepreneurship training	Design and make available (open source) GVA curricula design and training materials	1 pilot VET programme for 100 learners (50 in Ghana, 50 in Nigeria)	No relevant VET programme found in Ghana or Nigeria, though courses exist in the EU	A pilot VET programme for 100 learners run by reputable accredited VET providers	50 in Nigeria (accredited by NABTEB) and 60 in Ghana
SO4: Foster employability/self-employability of learners	Number of VET learners employed by 6 months of project end	>20% of the GVA learners employed/self-employed by 6 months after training	No dedicated VET training programme for green waste management	>20% of GVA learners employed/self-employed	40 students were employed by the end of the project and 30 started their small business
SO5: Foster durable international collaboration between VET providers, industry, academia, SMEs	Number of established collaborations beyond GVA project duration	At least 5 transnational collaborations between VETs, industry, and academia	No transnational collaboration initiated by the VETs involved	At least 5 new transnational collaborations	CIRCUWASTEVEFRICA ERASMUS+ project starting in Jan 2025 new project coordinated by AREA with CNOS-FAP, MUNDUS, PRSD and 4 new partners from Portugal, Angola, Sao Tome and Namibia PAU & MUNDUS initiated a new ERASMUS+ Project (SHINE) in 2024

SO6: Maximise the exploitability of GVA programme	Number of Green Waste Management programmes initiated in Nigeria and/or Ghana	Initiate accreditation process for VET programme in both countries	No VET programmes on the topic in the target countries	Initiate accreditation of VET programme in both countries, make all GVA assets open source, and source 500K Euro funding for replication	GVA training materials accessible through GVA website, SMARTSTEP, Skilling Eco-VET. Replication through CircuWasteVetAfrica.
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3.5. QUANTITY AND QUALITY INDICATORS FOR IMPACT ASSESSMENT, MEASUREMENT METHODS AND RESULTS

Table 6: Quantity Indicators for GVA Impact Assessment

Quantity Indicator	Target Value	Measurement Method	Project Results	Source of Verification
Completion of planned WPs and actions (e.g., train-the-mentor, piloting of the course, etc.)	100% completion	Compare planned vs. actual completion of WPs/actions	All WPs, Tasks, Activities, Milestones and deliverables have been submitted	EC portal reporting & Project's website
Number of mentors participating in GVA	At least 40 mentors	Track mentor participation from two AU countries	40 Mentors (Trainers, Waste Supply Chain entrepreneurs, Waste experts from associations, NGOs, donors like GIZ/UNDP and small entrepreneurs)	Participation in GVA events as speakers, one-to-one mentorship during the internships, class presentations
Number of learners participating in the pilot in two AU countries	At least 100 learners	Track learner participation in Nigeria and Ghana	100	<u>D4.2</u>
Number of external stakeholders and associated partners reached through online GVA activities	300 organizations; 2,000 individual persons	Monitor online engagement (website/social media analytics)	160 organisations (companies engaged in the supply chain analysis, mailing, social media, participation in events online and offline 4,000 individuals)	Press clippings, 1to1 emails; presentation at events

Number of participants in the final GVA Impact Event	50 local and foreign participants face-to-face; 100 participants remotely	Track attendance to the event in Lagos and remotely	60 participants on site (the event was not live streamed)	Event news on the website and participants list
Creation of a social media group for the network and number of participants	100% participation	Monitor social media engagement (number of group participants)	WhatsApp Group for partners; WhatsApp group trainers; WhatsApp group for Nigeria students	WhatsApp chats
Deviation in execution time and allocated budget	Deviation <30%	Measure the time spent vs. the planned project phases and activities, comparing budget allocation and use	1 deliverable delayed (D5.2) from M11 to M12 to include partners' workshop's outcomes Job Fair Milestone achieved in November instead of August (for Nigerian students) to allow completion of internship of students in Nigeria and co-locate the graduation with the final event	EC portal reporting
Communication monitoring (no. of actions, social media/web analytics)	Track all communication actions	Monitor communication actions (events, online engagement)	The Diss&Comm Activities have been tracked by the Coordinator through an excel sheet updated every month by the partners	EC portal D&C reporting
Number of actions not included in the work program but initiated by partners (e.g., additional events, conferences, synergies)	>5 actions	Track actions initiated beyond initial work plan	GreenDay at PRSD Collaboration LAWMA - Lagos Agency for Mass Education AREA and Lagos Trust Fund for employment AREA and NACETEM	Partners Impact's workshop Minutes (13 Nov 2024)
Number of learners employed 6 months after the project	>30% (±60)	Track the employment/self-employment rate of learners after 6 months	60 (40 employed - 20 developed their own small business)	Feedback from students

Table 7: Quality Indicators for GVA Impact Assessment

Quality Indicator	Target Value	Measurement Method	Results	Source of Verification
Appropriateness of the teaching and learning activities	>80% satisfaction	Surveys and feedback from learners and mentors	85% of participants expressed satisfaction with learning activities	Questionnaires & focus groups
Satisfaction of learners and mentors with the training content and methodology	>80% satisfaction	Post-training surveys and interviews	90% satisfaction	Questionnaires & focus groups
Satisfaction of learners and mentors in the experimentations at country level/pilots	>80% satisfaction	Collect feedback during and after pilot activities	95% satisfaction	Questionnaires & focus groups
Satisfaction of learners and mentors with the learning materials	>80% satisfaction	Post-training surveys on material quality	87% satisfaction	Questionnaires & focus groups
Satisfaction of the GVA team	>85% satisfaction	Team feedback surveys and debriefings	92% of partners are highly satisfied with the team collaboration	Evaluation forms - Year 1 + Year 2
Variety of media used in dissemination	Track variety	Monitor all media platforms used (e.g., blogs, social media, videos)	LinkedIn, Facebook, X, YouTube, Project's website	Social media channels
Representation of different target groups and stakeholders in the final event	Track target group representation	Analyze participant demographics during the final event	Policy Maker (Lagos Environment Ministry); Education NABTEB; Employment: Lagos State Mass Agency Waste Management Industry (5 representatives); Press (Business Day)	Pictures uploaded to the social media and the list of attendance
Composition and persistence of the informal network created or enhanced during the project	Track network growth	Track creation and ongoing engagement of the informal network	The project's partners attracted a wide and diversified group of stakeholders (from waste management micro, small, medium businesses policy makers to international cooperation agencies and NGOs) which contributed at different stages	Participation at events organised (news on the website, videos, and social media posts)

4. IMPACT ON PARTNER ORGANISATIONS

4.1 AREA

The GVA project has had impact in the following key aspects in AREA:

Capacity Building and Impact: The GreenVETAfrica (GVA) project significantly enhanced AREA's capacity and understanding of VET in Africa, which allows AREA to design purpose fitting vocational training programmes for technology transfer across Africa.

Collaborative Networks and Expertise Expansion: Partnerships with organizations like NACETEM in Nigeria and NCRST in Namibia broadened AREA's network and expertise, particularly in youth education and emerging technologies like robots and drones.

Operational Innovations: The project inspired AREA to develop new internal procedures, such as induction programs for new staff and improved pedagogical approaches, while addressing challenges like student engagement and scheduling flexibility.

Europe-Africa Synergies: GVA strengthened Europe-Africa collaboration, merging Europe's technical expertise with Africa's practical insights in waste reuse and reduction, advancing sustainable vocational training practices.

Sustainability and Future Prospects: AREA leveraged its GVA experience for long-term growth, including the upcoming CircuWASTEVEtafrica ERASMUS+ project in 2025 and new EU-Africa funding proposals, while rating its Erasmus+ experience at 9/10 for fostering impactful partnerships and innovations.

4.2 CNOS-FAP

The GVA project has had impact in the following key aspects in CNOS-FAP:

Organizational Growth: The GVA project has enhanced CNOS-FAP's capacity in vocational education and training (VET), particularly for green and digital transitions, earning an 8/10 rating in its second year.

Training Excellence: CNOS-FAP successfully led "Train the Trainers" sessions in Nigeria, delivering high-quality outcomes for trainers and learners while developing innovative training solutions.

Enhanced Outreach: Through active dissemination via social media, newsletters, and partnerships like Don Bosco Tech Europe, CNOS-FAP has expanded its visibility and stakeholder connections in Italy and Africa.

Operational Improvements: New methodologies, including peer-review processes, risk management tools, and standardised templates, were introduced and integrated into CNOS-FAP's operations, improving efficiency and replicability.

Sustainability and Future Projects: The project raised awareness of green initiatives in CNOS-FAP's 60 Italian training centers and strengthened partnerships with African and European stakeholders, paving the way for future projects like CircuWASTEVEtafrica in 2025.

4.3 MUNDUS

The GVA project has had impact in the following key aspects in MUNDUS:

Capacity Building in Project Management: The GreenVETAfrica (GVA) project significantly enhanced MUNDUS's capabilities in project management, risk assessment, and monitoring, particularly in the field of green vocational education and training (VET).

Key Contributions Across Work Packages: MUNDUS led WP1 by developing a comprehensive risk management plan, supported WP4 with tailored surveys to evaluate training outcomes, and contributed to WP5 by collecting data for the impact assessment to promote green transitions in West Africa.

Awareness and Engagement: The project raised awareness about green waste management education in Ghana and Nigeria, effectively engaging local companies, VET schools, teachers, and students to foster skills development in the sector.

Improved Practices and Partnerships: MUNDUS adopted new practices in risk management and sustainability planning, collaborated with AREA and partners to develop initiatives like a Center of Vocational Excellence (COVE), and rated the project's partnerships an 8/10 for their effectiveness.

Erasmus+ and Future Prospects: MUNDUS rated its overall Erasmus+ experience a 10/10, highlighting its pivotal role in advancing sustainable VET practices and creating a foundation for future projects, despite minor challenges in feedback collection.

4.4 LAWMA

The GVA project has had impact in the following key aspects in LAWMA:

Transformative Impact and Ratings: The GreenVETAfrica (GVA) project has significantly enhanced LAWMA's capacity in sustainable waste management and the circular economy, earning an 8/10 impact rating in its second year. Stakeholder satisfaction is even higher, at 9/10, reflecting increased enthusiasm and understanding of the concept of sustainability.

Key Initiatives and Achievements: LAWMA implemented pivotal programs like "Train the Trainer," foundational waste management training in Nigeria and Ghana, curriculum development, and a green waste management workshop. Project achievements were showcased at high-profile events like the Ecomondo conference, boosting visibility and influence.

Adoption of Innovative Practices: New methodologies have been adopted, such as integrating informal waste workers and recyclers and conceptualizing recycling equipment development. These initiatives have improved engagements with stakeholders in the recycling sector in Lagos, enhanced community engagement, capacity building, and behavioral shifts toward environmental friendliness.

Addressing Challenges and Fostering Partnerships: Challenges like onboarding female students were addressed through extended application periods and tailored strategies. Collaboration with partners, rated 8/10, has led to new alliances, including the collaboration with the Lagos State Agency for Mass Education, to train youths and the unemployed in green waste management.

Sustainability and Long-Term Plans: LAWMA is positioned for sustainable impact through continued training partnerships and LAWMA Academy. The Erasmus+ programme has been instrumental in

advancing waste management practices and wealth creation in Nigeria, with LAWMA rating the overall experience 8/10.

4.5 PAUF

The GVA project has had impact in the following key aspects in PAUF:

Impact on Vocational Education and Training (VET): The GVA project significantly advanced green waste management training in Nigeria, including a Train-the-Trainers program with 50+ participants and a pilot VET program training over 100 individuals.

Key Achievements and Leadership: PAUF led learner recruitment, program piloting, evaluations, and secured national recognition, strengthening its role in sustainable business and skill development.

Stakeholder and Community Feedback: High satisfaction rates (9/10) highlighted improved pedagogical methods and practical skills, but feedback emphasized the need for more hands-on sessions and greater accessibility.

Challenges and Resolutions: Issues like low female participation and poor session turnout were mitigated through targeted follow-ups, session recordings, and efforts to attract women, though the 50% female participation goal remained unmet.

Sustainability and Future Plans: With national recognition and ongoing awareness campaigns, PAUF aims to ensure long-term impact through partnerships, short courses, and engagement with waste management stakeholders and academic institutions.

4.6 PRSD

The GVA project has had impact in the following key aspects in PRSD:

Significant Impact and Practical Training: The GreenVETAfrica project achieved an 8/10 impact rating in Ghana, delivering a robust green waste management curriculum and hands-on internships, with 61 of 63 students in Ghana and 25 in Nigeria gaining practical experience.

Training of Trainers and Accreditation: A Training of Trainers (ToT) programme empowered instructors with sustainable waste management teaching skills, while PRSD/RVTI initiated accreditation of the green waste management course to enhance its credibility.

Positive Stakeholder Feedback and Adaptation: Stakeholders praised the program, recommending expanded internships and partnerships. Despite challenges like student vacations and limited placements, logistical support ensured internship completion.

Institutional Legacy and Awareness: PRSD/RVTI institutionalized "GreenVETAfrica Day" to sustain the project's legacy and promote green practices, ensuring ongoing awareness and training.

Sustainability and Expansion Plans: The project aims for long-term integration of green waste management into the curriculum, along with expanded partnerships to develop infrastructure, create job opportunities, and strengthen impact, earning a 9/10 Erasmus+ programme rating.

4.7 WHIZZY

The GVA project has had impact in the following key aspects in WHIZZY:

Empowering Learners with Green Skills: The GreenVETAfrica (GVA) project equipped 113 learners in Ghana and Nigeria with essential green waste management skills, including recycling, composting, and resource recovery, while providing practical internships to strengthen career readiness in the green industry.

Transformative Impact on Whizzy Academy: The project enhanced the academy's capacity to manage complex training programs, solidified its role as a leader in sustainability-focused vocational education, and inspired innovative methodologies, such as increased media involvement and expanded outreach.

Community Engagement and Awareness: The project raised community awareness about adopting green practices, sparking interest in sustainability, particularly in plastic waste recycling, despite ongoing challenges with waste management infrastructure.

Building Partnerships and Expanding Outreach: It fostered collaborations with green-focused companies and encouraged the academy to explore new partnerships in the green economy sector, ensuring the program's long-term sustainability and impact.

Future Initiatives and Sustainability: Looking ahead, Whizzy Academy plans to expand partnerships, support circular economy ventures, and document success stories, while continuing to facilitate workshops, back student ventures, and collaborate with environmental NGOs and local businesses.

5. IMPACT ASSESSMENT ON TEACHERS (TRAIN THE TRAINERS)

5.1. PARTICIPANTS DEMOGRAPHICS

The GreenVETAfrica Train-the-Trainers program brings together a diverse cohort of participants with varied educational backgrounds, vocational expertise, and institutional affiliations. This diversity fosters a dynamic learning environment, promoting collaboration and the exchange of ideas.

Educational Backgrounds: Participants have a broad spectrum of academic qualifications, ranging from diplomas to master's degrees, contributing a rich blend of knowledge and perspectives from their unique educational journeys.

Vocational Disciplines: The programme includes trainers from different fields, such as electrical engineering technology, fashion design technology, hospitality and catering, building construction, natural resource management, and general management. Their diverse expertise enhances the learning process by integrating different vocational insights and practical experiences.

Institutional Affiliations: Trainers from Ghana are affiliated with respected institutions like Presby SHS, Ramseyer VTI, Kumasi VTI, Opoku Ware VTI, and St. Joseph VTI, all known for their dedication to vocational training. Nigerian participants come from prominent organizations such as LAWMA, IIT, and PAUF, which play pivotal roles in advancing vocational education and sustainable development in Nigeria.

Collectively, this diverse group of trainers enriched the program with their varied experiences and shared commitment to environmental education and entrepreneurship, reflecting GreenVETAfrica's inclusive vision and dedication to cross-border collaboration in achieving sustainable development goals.

5.2. ATTENDANCE RECORDS

The attendance record of trainers in the Train-the-Trainers (ToT) programme offers valuable insights into their level of engagement and participation throughout the sessions. Regular attendance monitoring was conducted to evaluate the trainers' commitment to their professional growth and capacity-building efforts.

During the program, it was noted that some trainers occasionally shared devices when joining sessions, resulting in occasional discrepancies in the attendance records. Although efforts were made to maintain accurate tracking, these instances posed challenges in precisely recording individual participation. To address these concerns, corrective measures were implemented to appropriately recognize trainers for their attendance and contributions. The consortium established that trainers with a minimum of 50% attendance would be permitted to continue participating in the program. Additionally, a structured trainer evaluation and validation process was introduced. Trainers who achieved at least 50% attendance were required to facilitate a segment of the curriculum, during which their performance was assessed and scored out of 50. Those who demonstrated exceptional performance were subsequently authorized to train learners.

Internet connectivity issues posed significant obstacles for some trainers, limiting their consistent access to online sessions. Additionally, scheduling conflicts with other commitments and professional obligations further hindered participation. A few trainers also had to travel during certain periods, contributing to their reduced presence in the program.

Despite these challenges, the dedication and commitment of the 60 enrolled trainers were evident, with over half actively participating in training activities and discussions. Specifically, 41 trainers attended at least 70% of the sessions, qualifying them for certificates of attendance—a prerequisite for their involvement in the upcoming student experimentation phase. From this group, 37 trainers met the selection criteria for the pilot phase, with 19 participants from Nigeria and 18 from Ghana successfully passing the evaluation process.

5.3. FEEDBACK COLLECTION METHODOLOGY

The GreenVETAfrica project prioritizes trainer feedback to enhance the effectiveness and relevance of its training program. To gather comprehensive insights, validation workshops were held in both Ghana and Nigeria, offering trainers a platform to share their experiences and recommendations.

Trainers were organized into small groups of 4-5 members, encouraging focused discussions on key topics. Each group reviewed a questionnaire designed by Mundus, covering areas such as training content relevance, teaching methodologies, logistical arrangements, and overall program satisfaction. Facilitators guided these discussions, ensuring all participants could contribute. Feedbacks from focused discussions were integrated into the training modules to enhance learnings and impacts.

The workshops fostered lively exchanges, where trainers shared experiences, challenges, and best practices, creating a supportive and collaborative environment. This feedback process generated valuable insights and actionable recommendations, which will be analyzed to inform future program improvements, enhancing the overall impact and relevance of GreenVETAfrica's initiatives.

5.4. FEEDBACK FROM TRAINERS

5.4.1 Feedback from Ghanaian Trainers

The feedback from trainers in Ghana highlights a high level of satisfaction and provides valuable insights into their experiences with the Train the Trainers programme.

Overall Satisfaction and Impressions:

Ghanaian participants expressed strong approval of the programme, noting its significant impact on their knowledge and teaching capabilities. They praised the program's success in meeting its objectives and enhancing their professional skills.

Programme Strengths: Trainers particularly valued the introduction of innovative teaching methods, including individual learning paths. They also appreciated the facilitators' interactive approach, responsiveness, and the inclusion of an evaluation workshop.

Key Knowledge Areas: Participants identified essential topics such as creativity, classroom management, waste management, sustainability, and recycling as crucial additions to their teaching

toolkit, enhancing both their practices and their ability to raise environmental awareness among students.

Application of Knowledge:

Trainers shared their plans to implement their newly acquired knowledge, emphasizing patience, creativity, and circular economy principles. They also reported already applying concepts like green waste management, financial management, and entrepreneurship in their professional and personal lives.

Readiness to Teach: All trainers expressed confidence in delivering the newly introduced concepts, particularly in competency-based learning, creativity, and classroom management, feeling well-prepared to transfer this knowledge to their students.

Suggestions and Recommendations: While trainers appreciated the engaging content, e-learning benefits, and internet data support, they highlighted areas for improvement, such as receiving feedback from facilitators on assignments and incorporating more in-person sessions.

Facilitators and Materials: Facilitators were praised for their expertise, patience, and effective classroom management. Training materials were described as user-friendly and well-structured, with minimal suggestions for changes.

Additional Feedback: Despite some challenges with network connectivity and language barriers, participants remained motivated to progress in the program, reinforcing their dedication to professional growth.

5.4.2 Feedback from Nigerian Trainers

Nigerian trainers also shared valuable insights, expressing general satisfaction while highlighting areas for refinement.

Overall Satisfaction and Impressions: The program was considered insightful and beneficial, especially in expanding their understanding of waste management, recycling and the circular economy. However, concerns were raised about network issues during the training and limited access to learning management systems.

Program Strengths: Participants appreciated the multidisciplinary approach, particularly discussions on green jobs, recycling, entrepreneurship, and the flipped classroom. However, some felt the workload was overwhelming, suggesting a more balanced distribution of assignments.

Key Knowledge Areas: Trainers highlighted competency-based learning, sustainability, waste management, and the circular economy as the most impactful areas of learning, recognizing their relevance in both professional and personal contexts.

Application of Knowledge: Many trainers reported already applying their new knowledge, including using speech-to-text tools for productivity and integrating sustainability principles into their personal and work environments.

Readiness to Teach: Despite some concerns about the sequential delivery of modules, trainers felt equipped to teach topics like competency-based learning and recycling. They expressed confidence in their ability to engage students and deliver effective lessons.

Suggestions and Recommendations: Trainers appreciated the facilitators' expertise, patience, and emotional intelligence but pointed out issues such as inadequate internet support and class scheduling conflicts with work obligations. They also recommended clearer explanations for complex topics like competency-based pedagogy and augmented reality.

Facilitators and Materials: Facilitators received praise for their engaging teaching styles and subject knowledge. While most training materials were considered accessible, trainers suggested clarifying more complex topics for improved understanding.

Additional Feedback: Language barriers, particularly accents, were noted as a challenge. Trainers recommended shorter modules and class durations to enhance engagement and retention.

Areas of improvement: According to the surveys, teachers identified areas for improvement such as competency-based training, communication, online learning, student engagement, classroom management, and the integration of ICT tools into their teaching. While half of the teachers have implemented individualized learning paths for students, the other half has not, highlighting an opportunity to develop more personalized educational approaches. In terms of digital pedagogy, 68% of teachers are familiar with the concept, and 65% have received training, although the lack of reliable internet and technology in classrooms limits the effective use of digital tools, which include apps, Zoom, Google tools, and social media.

5.4.3 Conclusions and recommendations

Based on the gaps in knowledge and skills identified by teachers, the following areas are recommended for future training and professional development:

Advanced Pedagogical Techniques: Specialised training in advanced teaching methodologies, including competency-based learning, differentiated instruction, and active learning strategies, will improve trainers' instructional effectiveness and boost learner engagement.

Technology Integration: Training on integrating educational technologies, such as learning management systems, multimedia resources, and virtual collaboration tools, will help trainers create dynamic, interactive learning environments aligned with modern teaching practices.

Cultural Competency and Inclusivity: Training focused on cultural awareness and diversity will equip trainers with the skills to engage learners from diverse backgrounds, fostering inclusive and supportive learning environments.

Professional Networking and Collaboration: Encouraging networking and collaboration opportunities will enable trainers to exchange best practices, share resources, and stay updated on industry trends, promoting continuous learning and innovation.

Implementing these recommendations will strengthen the Train the Trainers program, enhancing its overall impact and empowering vocational trainers to excel in their roles, ultimately advancing vocational education and workforce development.

5.5. FEEDBACK FROM TOT FACILITATORS

5.5.1. Facilitators' Role and Contribution

Facilitators played a pivotal role in the success of the Train the Trainers program by focusing on content delivery, participant engagement, and continuous support. Their responsibilities included:

- **Content Delivery & Methodology:** Delivering the entrepreneurship module to vocational teachers in Ghana and Nigeria through interactive sessions. They adapted content to suit participants' needs, using polls, quizzes, and practical activities to maintain engagement.
- **Preparation & Adaptability:** Prior to the training, facilitators prepared thoroughly by gathering resources, setting up technology, and anticipating potential disruptions. Their adaptability was evident in their response to technical challenges and participant comprehension gaps.
- **Feedback & Evaluation:** Facilitators collected participant feedback and evaluated the training's effectiveness. They identified areas for improvement, such as addressing diverse learning styles and increasing engagement for quieter participants.

Facilitators received positive feedback for their engaging style but recognised the need for more real-life case studies and supplementary resources. They proposed future enhancements like tailoring content to local contexts, incorporating more interactive elements, and providing ongoing mentorship.

5.5.2. Technological Tools and Challenges

Most trainers were comfortable with the technological tools used, though network disruptions posed challenges. Suggestions for improvement included:

- **Hybrid Learning:** Trainers proposed more physical or hybrid sessions to address difficulties with virtual learning and online distractions.
- **Scheduling & Duration:** Some trainers felt the course was too long and suggested better scheduling and additional pedagogical aids for more effective learning.

5.5.3. Student Engagement and Assessment

Trainers rated student engagement highly, with an average score of 8.52. All trainers confirmed students could apply their knowledge practically. Common evaluation methods included quizzes, exams, projects, group assignments, and presentations, which trainers found effective in assessing student understanding.

5.5.4. Impact on Teaching Practices

The programme significantly influenced trainers' teaching methods, particularly through the adoption of the Competence-Based Approach (CBA) and the integration of new technological tools. This led to:

- **Increased Use of Technology:** Trainers began incorporating virtual learning tools into their lessons.
- **Application of Knowledge:** 82.76% of trainers confirmed they would apply the skills and knowledge gained in future teaching, highlighting the program's lasting impact on their professional development.

5.5. Conclusion and Recommendations

The Train the Trainers programme has been instrumental in enhancing vocational education in Ghana and Nigeria. Facilitators' and trainers' feedback underscores the program's success while offering valuable insights for improvement:

- Tailor content to local contexts and enhance interactive elements.

- Incorporate more practical resources and video content.
- Address technological challenges and optimize course scheduling for better engagement.

This program has fostered a community of empowered educators equipped to drive sustainable change, underscoring its potential for long-term impact in vocational education and workforce development across Africa.

6. IMPACT ASSESSMENT ON STUDENTS (PILOT PROGRAMME WP4)

6.1. PARTICIPANTS DEMOGRAPHICS

The GreenVETAfrica project brought together over 100 learners and 50 trainers from Ghana and Nigeria, fostering a collaborative environment for advancing green waste management education. Learners, primarily from vocational and technical institutions, had diverse educational backgrounds and interests in environmental sciences, waste management, and green technologies. Trainers, with advanced qualifications in fields such as environmental studies and engineering, were equipped through a Training of Trainers (ToT) program to deliver the specialized curriculum effectively. Participants came from various institutions, including TVET centers, polytechnics, and universities, ensuring broad educational representation and strengthening sustainable waste management practices in West Africa.

The students that took part in the GreenVETAfrica evaluation questionnaire are predominantly from Ghana, representing 81.97% (50 out of 61) of the respondents, with 18.03% (11 respondents) from Nigeria. The average age of the participants is 24.95 years, with a median of 22 and a mode of 20, showing that most participants are young adults. In terms of gender, 55.74% of the respondents identify as female (34 participants), and 44.26% identify as male (27 participants). Regarding educational levels, the majority of participants have completed technical and vocational education, with 19.67% (12 respondents) from Naptex, followed by a variety of qualifications ranging from tertiary education to National and Higher National Diplomas. In terms of current employment status, 37.7% (23 respondents) are employed, 29.51% (18 respondents) are students, and 16.39% (10 respondents each) are self-employed or unemployed.

6.2. PARTICIPANTS PREVIOUS EXPERIENCE

The data from the GreenVETAfrica project evaluation reveals key insights into the training experience for participants. Before engaging in the Green Waste Management training, 68.85% of the respondents (42 participants) had no prior experience with the topic, highlighting the significant opportunity the project provided for new learning. Regarding the organization of the lessons and calendar, participants rated it highly, with an average score of 8.66 out of 10, reflecting overall satisfaction with the structure and scheduling of the course. Furthermore, 80.33% of respondents felt that the module structure was clear and logically organized. There were some suggestions for improvement, such as better communication regarding changes in the training format and more practical sessions.

In terms of the blended learning experience, which combined live lessons with self-learning materials, 34.43% of participants did not enjoy this format, although several others praised it as innovative and useful. Despite this, feedback indicated that some learners struggle with the lack of access to learning materials in advance. The quality of the learning materials received a strong rating, with an average score of 8.21, suggesting that most participants found the materials adequate and effective for their learning process. This feedback demonstrates that while the program was generally well-received, there are areas, such as material access and practical training, where further improvements could enhance the learning experience.

6.3. PARTICIPANTS ASSESSMENT OF THE TRAINING MODULES

The evaluation data for the GreenVETAfrica training provides several insights into the effectiveness of the learning materials and the overall learning experience:

Effectiveness of Learning Materials: Participants rated the usefulness of the learning materials highly, with an average score of **8.38/10**. This indicates that the materials were generally effective in helping participants learn and follow the lessons.

Alignment with Expectations: **22.95%** of participants felt that the course materials fully aligned with their expectations and needs, with many commenting that the materials were practical, clear, and useful for understanding green waste management concepts. Some participants noted that practical sessions were missing or needed more emphasis, while others expressed a desire for materials to be provided ahead of sessions for better preparation.

Interaction and Collaboration: **19.67%** of respondents reported not having opportunities to interact with fellow participants. However, many participants who did interact felt that collaboration significantly enhanced their learning experience, particularly through the exchange of ideas, teamwork, and gaining diverse perspectives. Interaction helped deepen understanding of complex topics and offered new insights into waste management practices.

Accessibility and User-friendliness of Materials: The majority of participants (**91.8%**) found the learning materials to be easily accessible and user-friendly, contributing to an overall positive learning experience.

In summary, the training program's learning materials were generally well-received, with most participants finding them helpful and accessible. Interaction with peers was beneficial for many, though there were some who did not engage as much. A few suggested improvements, such as the inclusion of more practical sessions and advanced access to materials, could further enhance the experience.

6.4. PARTICIPANTS ASSESSMENT OF THE TRAINING MODULES

The feedback gathered from the GreenVETAfrica training programme provides valuable insights into how the participants are engaging or will engage in their local communities with the knowledge they gained. Here's a summary of the key findings:

6.4.1. Sharing Knowledge with Colleagues or Peers:

- **Positive feedback:** Many participants shared their learning with peers, receiving encouraging and interested responses. Colleagues expressed appreciation for the environmental insights, with some showing interest in participating in future projects or training.
- **Specific responses:** Participants mentioned that their colleagues were eager to learn more about green waste management, some expressing interest in taking action, starting their own businesses, or applying the knowledge to their work environments.

6.4.2. Application of Knowledge:

- **Future implementation:** A significant number of participants indicated they would apply the knowledge gained in their workplaces, particularly around waste management and recycling. Many participants highlighted their commitment to improving environmental practices, such as reducing pollution, conserving natural resources, and managing waste effectively.
- **Practical use:** Participants noted they would incorporate green waste management principles into their daily business practices, education efforts, or environmental projects, particularly in rural communities.

6.4.3. Employment and Business Opportunities:

- **Employment prospects:** 82% of participants believed the course would help them secure employment in the green waste management industry, emphasising the course's value in showcasing their commitment and passion for environmental sustainability.
- **Entrepreneurship potential:** More than half of the respondents (57%) expressed interest in starting their own businesses related to green waste management, with several already considering ventures in recycling, waste reduction, or biogas production. However, a few acknowledged the need for additional support and experience.

6.4.4. Application in the participants' personal lives

According to the survey conducted by project managers, the participants showed a renewed interest in waste management and sustainability. Key actions include:

- **Recycling and waste management:** Many intend to manage and recycle waste, reduce waste generation, and reuse materials.
- **Environmental impact:** They aim to keep their surroundings clean, compost organic waste, and reduce their carbon footprint.
- **Sharing knowledge:** Some participants plan to encourage family and friends to adopt green practices and promote sustainability in their communities.
- **Business ventures:** A few are considering starting businesses related to green waste management.

Overall, the course has inspired participants to adopt sustainable practices in their daily lives and share this knowledge with others.

6.5. PARTICIPANTS ASSESSMENT OF THE INTERNSHIP EXPERIENCE

The GreenVETAfrica internship programme offers a transformative experience, bridging theoretical knowledge and practical application in green waste management. It equips learners with hands-on skills, exposing them to real-world scenarios and innovative practices while fostering a commitment to environmental sustainability and professional development. The program aims to shape future leaders in green waste management, empowering them to drive positive change.

6.5.1. Partnerships with local companies

Ghana: There were limited internship opportunities due to only one partner, Charcoal Chiefs Company and a shift system allowed 63 learners to participate over a 10-day period.

Nigeria: There were nine companies partnered, providing diverse opportunities across various aspects of green waste management, including Greenhill, GIVO, ASWOL, Alon Green, and Sweep Foundation. Despite broader availability, finally 25 students participated.

6.5.2. Internship Tasks and Learning Outcomes

Ghana: Focused on recycling and conversion processes, particularly using coconut shells to produce refined charcoal. Students gained insights into the circular economy and sustainable waste repurposing.

Nigeria: There were diverse tasks, including waste collection, sorting, environmental impact assessments, and innovative recycling methods. We could see enhanced technical skills, problem-solving abilities, and adaptability.

Overall Learning Outcomes: Internships were aligned with the GreenVETAfrica goal of producing environmentally conscious professionals with strong technical competence.

6.5.3. Feedback from Students and Internship Hosts

- **Ghana:**
 - Over 95% of students appreciated the hands-on experience.
 - Practical exposure enhanced learning, deepened industry understanding, and boosted job readiness despite the shift system.
 - Increased confidence in pursuing careers in green waste management.
- **Nigeria:**
 - Students valued the variety of placements and exposure to different aspects of the sector.
 - Gained both technical skills and professional networks, crucial for future careers.
 - Students felt well-prepared to tackle industry challenges and expressed enthusiasm for real-world learning.

6.5.4. Conclusion

The GreenVETAfrica internship programme successfully enhances practical learning and career readiness in green waste management, despite logistical and participation challenges. The feedback underscores its significant impact in preparing students for sustainable careers while fostering a robust professional network for future industry leaders.

6.5 IMPACT ASSESSMENT ON COMPANIES HOSTING INTERNS

Employers in both Ghana and Nigeria provided positive feedback on the students' performance during their internships.

- **Ghana:** Employers commended the students for their enthusiasm and adaptability, noting that the practical experience significantly enhanced their understanding of the industry and better prepared them for future employment.
- **Nigeria:** The variety of placements allowed employers to observe the students' eagerness to learn and their ability to quickly adapt to different tasks. Many highlighted the students' meaningful contributions, praising their dedication, initiative, and potential. Employers noted that the students demonstrated strong professionalism and a commitment to green waste management, reinforcing their readiness to support the sector's growth.

Overall, employers were impressed by the students' impact and the value they added to their companies. Key insights from the Employers' Survey are outlined below:

The feedback from companies evaluating student interns highlighted generally positive performance, with most interns meeting or exceeding expectations in various skill areas. Students demonstrated strong abilities in communication, teamwork, and problem-solving, with a significant portion rated "Commendable" for group work, resource utilization, and accepting responsibility for mistakes. However, areas such as listening skills, conflict management, and analytical thinking showed room for improvement, as many students were rated "Fair" in these categories. The majority of students were self-motivated and displayed a strong work ethic, though fewer exceeded expectations in problem-solving and adaptability.

In terms of professional behavior, students generally exhibited professionalism, with most rated positively for timeliness, appearance, and ethical behavior. Employers appreciated students' contributions to teams and their positive attitudes, with many rated "Commendable" for professionalism and work attendance. However, areas such as conflict resolution and respect for diversity showed room for growth. Overall, while the interns met most expectations, the feedback suggests there is potential for further development in areas like conflict management, ethical behavior, and analytical skills.

7. CONCLUSIONS AND POLICY RECOMMENDATIONS

The GreenVETAfrica project has emerged as a transformative initiative, yielding significant outcomes across multiple areas, **including skills acquisition, participant satisfaction, and environmental and social impact.** The project has successfully bridged the skills gap in the emerging green waste management sector, equipping learners and trainers with the knowledge and practical skills essential for success in the competitive job market.

The project began with a market analysis that complemented the one conducted at the start of the initiative. This analysis highlights that the **green waste management sector in Africa is booming**, with a growing demand for skilled labor, an increasing need for specific profiles and technicians, and the pressing necessity for such professionals to support the ongoing ecological and just transition happening globally, particularly in Nigeria and Ghana. Therefore, the jobs exist, the need for technicians is real, and the project proves to be highly relevant.

Through capacity building programs participants have gained technical expertise in sustainable waste management practices, such as waste recycling, composting, and upcycling, as well as the application of environmentally friendly waste disposal methods like segregation at the source and responsible landfill management. **These outcomes have empowered individuals to advance their careers while contributing to the growth of a skilled workforce capable of addressing pressing environmental challenges in West Africa.**

The project's success is reflected in the overwhelmingly **positive feedback from both trainers and learners.** Participants appreciated the well-structured curriculum, the clarity of the training materials, and the practical nature of the learning experience. **Over 85% of learners reported improvements in problem-solving skills, while 90% of them highlighted enhanced critical thinking abilities developed during the internship phase.** These internships, which involved collaboration with companies across Ghana and Nigeria, provided invaluable real-world exposure, allowing students to apply their theoretical knowledge and gain a deeper understanding of the green waste management industry. This not only enriched their learning experience but also boosted their career prospects. The project's holistic approach to training has fostered a sense of responsibility and environmental consciousness, contributing to a growing commitment to sustainability among participants.

In addition to its impact on skills development, the GreenVETAfrica project has made noteworthy contributions to environmental and social well-being. By raising awareness about sustainable waste management practices and circular economy principles, the project has encouraged greener lifestyles and responsible waste disposal in local communities. Furthermore, by enhancing employability and providing critical training and internships, **the project has addressed youth unemployment, in Nigeria and Ghana in which youth employment is one of the top priorities in the policy makers agenda.** This combination of technical and practical experience has positioned learners as future leaders in the green economy, fostering sustainable development in both Ghana and Nigeria. The project's ongoing impact is a testament to its success in building a skilled, environmentally conscious workforce poised to lead the charge in sustainable waste management practices across the region. Key takeaways, challenges, and proposed future actions are outlined below.

7.1. MAJOR ACHIEVEMENTS AND IMPACT

The Green VET Africa (GVA) project has been a **pioneer in creating and implementing a training program for green waste management in Nigeria and Ghana**, a domain where no previous

certifications or structured training programs existed. This initiative introduced valuable educational resources and training to build capacity in a critical but underdeveloped sector with significant employment potential.

1-Creation of New VET Program in Green Waste Management in Nigeria and Ghana that can be replicable and escalated: The GVA project introduced the first green waste management training in Nigeria and Ghana, offering structured courses to fill the skills gap in this emerging sector. The accreditation achieved in Nigeria through NABTEB allows VET learners to receive nationally recognized certificates, enhancing their employability. In Ghana, while accreditation is in progress, the training is shaping the green waste management curriculum on a national level and 5 out of the 9 training modules have been adopted by the CTVET in Ghana.

2-Skill Enhancement for Trainers and Students: The project introduced advanced skills to VET trainers and learners, including digital tools, competency-based approaches, and technical knowledge on waste management. Trainers from multiple institutions have been upskilled to deliver this specialized training, laying the groundwork for a sustainable program that can continue beyond the initial project.

3-Fostering International and Regional Collaboration: The GVA partnership between European and African institutions has strengthened regional cooperation. Establishing events like the Green VET Africa Day has increased awareness and fostered ongoing knowledge exchange between local institutions, government bodies, and stakeholders, including those in the private sector.

4-Development of a Knowledge-Sharing Platform: The project's creation of open-source training materials, learning platforms, and impact assessment reports provides valuable resources for replication and adaptation by other organizations, fostering continued learning and growth in the sector.

7.2. CHALLENGES AND LESSONS LEARNED

1-Gender Representation: Achieving the target of 25% female participation in Nigeria presented challenges, primarily due to structural barriers such as limited VET infrastructure and the onboarding process affects female roles in the waste management sector. Additionally, online training modalities appeared less accessible for women, suggesting a need for more inclusive and flexible training approaches in future projects.

2-Accreditation Difficulties in Ghana: The accreditation process in Ghana faced delays due to infrastructure challenges and limited stakeholder engagement. For future projects, early engagement with accreditation bodies and tailored support for local institutions in infrastructure development will be crucial.

3-Need for More Practical Training and Internships: The feedback indicates that more hands-on, practical training, and structured internships are essential for learners to gain industry-relevant experience. Ensuring funding for student allowances and creating stronger ties with industry partners could enhance internship quality and accessibility.

4-Sustainability and Scale: Although GVA has laid a foundation for green waste management training, scaling this impact across more institutions and regions will require additional resources and continuous stakeholder engagement. Engaging with international organizations, such as UNESCO, and

regional bodies for ongoing support and funding could further enhance project reach and sustainability.

7.3. RECOMMENDATIONS FOR FUTURE PROJECTS

1-Enhanced Gender-Inclusive Approaches: Future initiatives should consider specific outreach programs to engage women in green waste management, perhaps by connecting with female-led community organizations, introducing role models, and exploring hybrid or community-based learning models to overcome online training barriers.

2-Physical Training and Infrastructure Development: Since physical training proved more effective than remote learning, increasing physical training facilities and investing in necessary infrastructure will improve engagement and the quality of learning outcomes.

3-Expanding Curriculum and Industry Collaboration: Future programs should incorporate modules on circular economy principles, business development in waste management, and recycling. Additionally, co-developing the curriculum with industry stakeholders and including frequent job fairs or networking events could enhance private sector involvement and increase job placement for graduates.

4-Capacity Building for Trainers: Expanding "Train-the-Trainer" programs and incorporating international mobility opportunities for trainers can foster further skill development and enhance teaching quality.

5-Structured Impact Assessment: Establishing a standardized impact assessment from the project's outset will improve the evaluation of progress and allow for quicker adaptations to challenges, such as accreditation delays or recruitment shortfalls.

6-Exploring Alternative Certification Routes: Given challenges in traditional certification, exploring alternative certification pathways or flexible modular approaches could help students receive official recognition more readily, even in under-resourced settings.