CircuWasteVETAfrica

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D2.1 Train the Trainers Materials

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Abstract	This deliverable presents an overview of the activities that led to the design and development of the Train-the-Trainers (ToT) programme within the CircuWasteVETAfrica project. The programme was developed based on a structured needs assessment conducted under Task 2.1 with targeted VET training centres in Ghana, Angola and São Tomé. The assessment identified specific skills gaps related to circular economy principles and green waste management, which informed the definition of learning objectives, content, and pedagogical approaches. Building on these findings, a competency-based training curriculum was developed to strengthen the pedagogical, technical, and transversal capacities of trainers working in Technical and Vocational Education and Training (VET) institutions. The ToT programme equips trainers with the knowledge, tools, and methodologies required to effectively deliver training on circular economy and green waste management, enabling them to transfer these essential skills to VET learners in subsequent project phases.
Keywords	Pedagogy, Digital tools, Circular economy, Green Waste Management, Training Materials, Vocational Training, Train-the-Trainers, ToT

Document Revision History

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v.0.1	10/12/2025	First draft	António d' Assunção (CFP-STP)
v.0.2	19/12/2025	Internal review	Benedetta Cassarini (CNOS-FAP)
v.0.3	26/12/2025	Internal review and Annexes integration	Catarina Pereira (AREA)
v.1	27/12/2025	Revision before submission	Adriano Mauro (AREA)

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CO	Confidential to CIRCUWASTEVETAFRICA project and Commission Services	

EXECUTIVE SUMMARY

This deliverable summarises the activities undertaken to design and develop the Train-the-Trainers' programme within the CircuWasteVETAfrica project. The programme builds on the findings of the needs assessment carried out in Task 4.1 and the skills gap analysis presented in Deliverable 4.1, translating the identified gaps into a structured training offer in the fields of circular economy and green waste management.

The report focuses on the competency needs of trainers operating in Technical and Vocational Education and Training (TVET) institutions and training centres, with the objective of equipping them to effectively train learners in key circular economy and sustainable waste management skills. It presents the updated structure of the training modules developed under the Train-the-Trainers' framework, reflecting the agreed pedagogical principles, methodology and content.

The deliverable consolidates the pedagogical organisation of the modules, ensuring alignment with contemporary teaching approaches, the use of digital learning tools, solid technical foundations in green waste management, and the integration of entrepreneurial competences. Overall, the programme aims to strengthen the capacity of TVET trainers by promoting innovative pedagogical practices, educational technologies, and technical and entrepreneurial skills applicable to the circular economy.

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ABBREVIATIONS

CWVA	CircuWasteVETAfrica
IoT	Internet of Things
AI	Artificial Intelligence
AR	Augmented reality
Q&A	Question & Answers
SME	Small Medium Enterprise
ToT	Training of Trainers
TVET	Technical Vocational Educational Training
WP	Work Package

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1 INTRODUCTION

This document presents the objectives, content, and development process of the Train-the-Trainers' (ToT) programme implemented within Work Package 2 of the CircuWasteVETAfrica project. The ToT programme was conceived as a strategic capacity-building intervention aimed at strengthening the pedagogical, technical, and entrepreneurial competences of trainers operating in Technical and Vocational Education and Training (TVET) institutions, with a specific focus on circular economy principles and green waste management.

The development of the programme was grounded in a rigorous, evidence-based, and participatory methodology. Within Work Package 4, an initial needs assessment (Deliverable 4.1 – Stakeholders' Mapping and Skills Gaps analysis) was conducted through structured pre-assessment questionnaires and in-depth interviews with heads of TVET institutions in Ghana, Angola, and São Tomé. This process enabled the identification of concrete skills gaps, institutional constraints, and contextual priorities, ensuring that the training content was demand-driven, context-sensitive, and aligned with the realities and needs of the target countries.

Building on the results of this assessment, six core training modules were designed (Task 2.2) to address the identified gaps. The modules cover key areas including competency-based pedagogy and training transfer, technical competences in circular waste management, circular business models, micro-entrepreneurship, frugal and digital innovation, and transversal skills relevant to labour market integration. The development of the modules was carried out with the technical contribution of project partners, ensuring methodological coherence, pedagogical quality, and sectoral relevance.

All training materials were developed using a blended learning approach and made available in English and Portuguese via the Smart Step e-learning platform, managed by AREA (Project Coordinator). This approach enabled participants to engage with self-paced learning materials while also benefiting from scheduled synchronous online sessions focused on discussion, clarification, peer learning, and exchange with international facilitators. In total, 75 trainers—25 from each participating country—were selected to participate in the programme, supporting a standardised transfer of knowledge and the strengthening of local training capacity.

The hybrid design of the ToT programme, combining pre-recorded theoretical content with live interactive sessions, ensured flexibility and accessibility while fostering active participation, real-time engagement, and contextualisation of learning. This methodological approach was instrumental in preparing trainers to effectively transfer the acquired competences to learners in subsequent project phases.

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2 OVERALL PROGRAMME STRUCTURE

The CircuWasteVETAfrica programme was designed to strengthen the knowledge, technical, managerial, and pedagogical competences of TVET teachers and trainers, while simultaneously enhancing the institutional capacity of TVET providers, particularly in the areas of quality, innovation, and inclusion. By addressing these dimensions, the programme contributes to learners' employability and supports closer alignment between TVET provision and emerging labour market opportunities related to the circular economy and green waste management. The Train-the-Trainers' (ToT) programme is structured around **six complementary and interrelated modules**, specifically developed to equip TVET educators with the competence required to respond to the evolving demands of vocational education and training in the circular economy sector. Each module targets a key competence area essential for contemporary trainers, including:

- Modern pedagogy and competency-based training approaches
- Digital technologies and tools applied to teaching and learning
- Technical fundamentals of green waste management and the circular economy
- Circular business models and micro-entrepreneurship
- Frugal and digital innovation for circular waste and the circular economy (e.g. IoT, AI, AR, robotics)
- Design of collaboration frameworks between TVET providers, local authorities, and the private sector, both locally and transnationally.

Beyond its immediate capacity-building objectives, the ToT programme plays a foundational and preparatory role within the project. It establishes the pedagogical framework, methodological approach, and operational conditions necessary for the effective implementation of the Learners' Programme under Work Package 3 (WP3), ensuring coherence, quality, and continuity across project phases.

2.1 MODULE A: PEDAGOGICAL UPSKILLING EMPOWERING EDUCATORS - COMPETENCY-BASED TEACHING AND DIGITAL PEDAGOGY FOR MODERN CLASSROOMS

Module A, led by CNOS-FAP, provides a comprehensive pathway for pedagogical upskilling, enabling trainers to adapt to diverse learning contexts, understand learners' competences in depth, integrate digital tools (including AI) into teaching practice, and apply the competency-based approach. This educational and training model focuses on the development and effective demonstration of specific competences, moving beyond traditional approaches based solely on classroom hours or examinations. The module is divided into two complementary sections and lays the pedagogical foundations of the ToT programme.

Part 1: Improving TVET Teaching with the Competency-Based Approach

This section starts with the definition of competence as the integration of knowledge, skills, and attitudes resulting in observable and measurable behaviours. It focuses on the design of Individual Training Plans and provides operational tools to assess training effectiveness during internships and apprenticeships. Particular attention is given to the roles of the training tutor and the company tutor, key figures in ensuring objective and quality assessment of learners' competences during work-based learning. This part consists of four units:

- Unit 1: Understanding the Competency-Based Approach: Principles and Advantages
- Unit 2: Planning in the Competency-Based Approach – The Individual Training Plan
- Unit 3: The Role of the Training Tutor and Company Tutor
- Unit 4: Assessing Competences in the Company: Methodologies and Tools

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Part 2: Teaching and Digital Technologies

This section introduces digital tools for teaching practice, responding to the growing need for educators to create engaging, inclusive, and technology-enhanced learning environments. Trainers explore how digital teaching can improve learner engagement, personalise learning pathways, and foster the development of practical skills through hands-on use of accessible digital tools. The approach is practical and experience-oriented, enabling participants to directly test tools and design innovative learning activities. This part consists of three units focused on the practical application of digital tools:

- Unit 5: Didactics and Digital Tools; Introduction to AI; Chatbots; Padlet
- Unit 6: AI Search; Canva for Education; EdPuzzle; Genially
- Unit 7: Image Generation; Quizizz; Magic School; NotebookLM

2.2 MODULE B: TECHNICAL SKILLS FOR CIRCULAR WASTE

Module B, led by MQ, entitled Technical Competences in Circular Waste, aims to equip TVET educators with the skills and tools required to promote waste management as a viable career and self-employment pathway, grounded in circular economy principles and technical expertise. With increasing urbanisation and industrial development, waste management has become a critical challenge across sectors. This module strengthens educators' technical knowledge and practical understanding of circular waste management, enabling them to guide learners towards sustainable practices, green job opportunities, and innovative waste treatment solutions. The module is structured around six thematic units:

- Unit 1: Circular Economy – Key Concepts
- Unit 2: Waste Management and the Environment
- Unit 3: Circular Waste Management Practices and Technologies
- Unit 4: Waste as a Resource
- Unit 5: Converting Waste into a Source of Wealth
- Unit 6: Technical Systems and Equipment in Waste Management

2.3 MODULE C: CIRCULAR BUSINESS MODELS FROM IDEATION TO IMPLEMENTATION

Module C, led by MQ, equips TVET teachers and trainers with the knowledge and tools to support learners in developing innovative circular business ideas that generate environmental, social, and economic value. Participants explore creative ideation techniques, sustainable business model design, and communication strategies for pitching circular business ideas. The module is structured around three thematic units:

- Unit 1: Generating Ideas for Circular Businesses
- Unit 2: Circular Business Model Design
- Unit 3: Pitching and Next Steps in Entrepreneurship

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2.4 MODULE D: INTRODUCTION TO MICRO-ENTREPRENEURSHIP IN SÃO TOMÉ, ANGOLA, AND GHANA

Module D, led by AREA, strengthens the capacity of TVET trainers to support aspiring micro-entrepreneurs by providing practical guidance on starting and managing small-scale circular businesses. The module addresses local regulatory frameworks, financial literacy, business planning, and entrepreneurial mindset development, using context-specific examples and tools. The module consists of ten units:

- Unit 1: Introduction to Micro-Entrepreneurship
- Unit 2: Motivations and Profiles of Micro-Entrepreneurs
- Unit 3: Entrepreneurial Pedagogy and Mindset Building
- Unit 4: Essential Skills for Micro-Entrepreneurs
- Unit 5: From Idea to Action: How a Business is Born
- Unit 6: Basics of Business Registration and Legal Framework
- Unit 7: Legal Certification based on business typology
- Unit 8: Fundamentals of Taxation and Accounting
- Unit 9: Banking, Budgeting, Financial Planning, and Sales Techniques
- Unit 10: Building and Presenting a Simple Business Plan

2.5 MODULE E: FRUGAL AND DIGITAL INNOVATION FOR CIRCULAR WASTE AND CIRCULAR ECONOMY

Module E, led by AREA, is designed to equip VET trainers with practical knowledge and tools to integrate frugal and digital innovations into the circular economy. The training aims to address local waste management challenges, promote low-cost and scalable solutions, and empower trainers to develop learners' green entrepreneurship potential. Through thematic clusters combining self-paced learning and live Q&A sessions, participants explore technical skills, emerging technologies (e.g., IoT, AI, blockchain), and teaching methods that encourage waste transformation, value creation, and sustainable microenterprise development. It aims at fostering understanding of circular economy principles adapted to local African contexts; promoting frugal and digital innovation as accessible tools for waste transformation and entrepreneurship; enabling VET trainers to design, test, and integrate circular innovation units into existing curricula.

Module E consists of the following units:

- Unit 1: Context and Challenges for Micro Enterprises
- Unit 2: What is Frugal Innovation?
- Unit 3: SCAMPER: A Creative Tool for Low-Cost Innovation
- Unit 4: Examples of Frugal Innovations in Africa
- Unit 5: Examples of Waste Based Frugal Innovations
- Unit 6: Advanced Technologies Made Accessible – Blockchain & Traceability
- Unit 7: Internet of Things (IoT) for Smart Waste Management
- Unit 8: Artificial Intelligence and Predictive Analytics

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- Unit 9: Augmented Reality for Remote Technical Training
- Unit 10: Robotics for waste separation
- Unit 11: Tools and Models for VET Trainers - How to Design a Teaching Unit on Frugal Innovation & Waste
- Unit 12: Low-Cost Workshop Activities for VET Classrooms
- Unit 13: How to Replicate the Course Across Other VET Domains (Carpentry, Mechanics, Fashion, etc.)

2.6 MODULE F: PUBLIC-PRIVATE PARTNERSHIPS (PPP) FOR VET MANAGERS

Module F, led by SWA, equips TVET teachers and managers with the competences required to design, manage, and sustain effective public–private partnerships. The module highlights the strategic role of PPPs in improving training relevance, employability outcomes, and institutional performance through industry engagement.

The module consists of seven units:

- Unit 1: Introduction to Public-Private Partnerships in TVET
- Unit 2: Roles and Responsibilities of Stakeholders
- Unit 3: Designing and Implementing PPP Projects
- Unit 4: Financing Mechanisms and Resource Mobilization
- Unit 5: Monitoring, Evaluation, and Quality Assurance
- Unit 6: Building and Sustaining Effective Partnerships
- Unit 7: Case Studies and Best Practices

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3 TRAINING METHODOLOGY AND IMPLEMENTATION

3.1 NEEDS ASSESSMENT AS A FOUNDATION FOR EFFECTIVE CONTENT DEVELOPMENT

The learning modules of the Train-the-Trainers' (ToT) programme were defined based on a needs assessment conducted during the project preparation phase. The partnership identified six modules as fully aligned with the learning objectives of the CircuWasteVETAfrica project and with the needs of trainers operating in the three target countries: Ghana, Angola, and São Tomé.

To further refine the understanding of participants' requirements and assess baseline knowledge levels immediately prior to content development, the consortium carried out a targeted needs assessment. This step was intended to ensure a clear and direct link between identified needs, expected learning outcomes, training content, and delivery methodologies. The need assessment was coordinated by CNOS-FAP, with the support of MQ and VIS and it was carried out combining an online questionnaire addressed to trainers with in-depth interviews conducted with heads of TVET institution. **The needs assessment process was structured as follows:**

1. Project partners in Ghana, Angola, and São Tomé identified teachers and trainers who would participate in the training.
2. A dedicated needs assessment questionnaire for trainers was developed by CNOS-FAP to assess educational background, professional experience, existing knowledge, and motivation to participate in the programme. The questionnaire was administered online through KoboToolbox (open source).
3. One-to-one interviews were conducted by CNOS-FAP, MQ, and VIS with heads of TVET institutions to gain deeper insight into:
    a. the operational context of the institutions
    b. priority skills areas identified for trainers' professional development
    c. available facilities and infrastructure to support training implementation
    d. optimal timing for training delivery; and
    e. the feasibility of a blended learning approach combining asynchronous and synchronous activities.

In total, 78 questionnaire responses were collected (26 from Ghana, 35 from Angola, and 17 from São Tomé), and six in-depth interviews were conducted with heads of TVET institutions (one in Ghana, one in São Tomé, and four in Angola, reflecting the number of participating TVET institutions). The pre-training assessment in Ghana results can be summarised as follows:

3.1.1 Trainers' Needs Assessmsent: Questionnaires Results Highlights

General Information on Respondents:

- The mean age of the respondents is 36 years.
- Most respondents were male (62%), reflecting the trainers' population of the TVET schools involved

Education Level and Teaching Experience:

- The most frequent education level is Undergraduate Degree (25%).
- The mean experience in teaching is 8 years.
- Most respondents received pedagogical training during their education (70%).
- The majority have also studied pedagogical skills on their own (55**%**).

Pedagogical Skills and Desired Training:

- Most respondents were interested in receiving training in pedagogical upskilling (90% answered "Yes").

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- The pedagogical skills respondents felt they could most improve were Design Thinking (77% respondents), Class group management (55%), Digital pedagogy (80%), and Individualised Learning Path for students with special needs (85%).
- 76.67% of respondents answered "No" when asked if they have ever developed an individualised training path for their students.

Circular Economy and Circular Waste:

- Most respondents **were not familiar with the concept and practices of the circular economy** (65%).
- 55% (19 respondents) had **No experience with "circular waste" technical skills**.
- Most have not studied anything related to circular waste on their own (60%).
- 70% of respondents to the question were interested in receiving training in circular waste. The main reasons include gaining in-depth knowledge, waste management, and helping improve environmental sustainability Acquiring more knowledge for personal use and for teaching others, promoting a healthy environment and combating climate change. The topic being new or essential for sustainability.

Challenges in Integrating Circular Waste Concepts:

- The main challenges in integrating circular waste management concepts into vocational training courses include the lack of learning materials and facilities/equipment.
- Most respondents do not know the difference between a linear business model and a circular business model (70%).
- 63.33% have No knowledge of circular business models and their application.
- The biggest challenges in integrating circular economy principles into teaching are **lack of resources and learning material**, as well as students' difficulty in understanding the new concepts.
- The majority were interested in receiving training in circular business models (e.g., to create entrepreneurial opportunities and awareness).

Entrepreneurship and Innovation:

- 60% had received formal training in micro-entrepreneurship skills.
- Most respondents were interested in receiving training in micro-entrepreneurship skills for micro-SMEs (86%).
- 63% had No knowledge of frugal and digital innovation in circular waste management and the circular economy.
- Most respondents were interested in receiving training on frugal and digital innovation for circular waste management and the circular economy (86%).

Private Sector Relations and Job Placement:

- The main challenge TVET centers face in their relationship with the private sector/companies **is limited industrial collaboration.**
- 50% have no idea of the tools used to identify the skills required by companies/private sector.
- **46 % had no idea how to match students' skills and market demand.**
- 53% have no idea of the employment rate of students who graduated from their TVET center.
- 70% highlighted the **placement of trainees for internships** as a key challenge

Circular Business Models (Questions 23, 24, 26):

- **Difference between Models:** 51.72% **do not know** the difference between a linear and a circular business model.

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3.1.2 Headmasters Needs Assessment: Interviews Results Highlights

Across all countries, headmasters describe trainers as having **at least diploma-level education**, often with **university degrees**, and in some cases advanced qualifications (Master's/PhD). Angola shows the **widest variation**, with trainers ranging from secondary/technical education to university level, and some trainers lacking hands-on experience despite technical training.

Strong Demand for Pedagogical Upskilling (with shared priorities)

Headmasters consistently prioritize modern training methodologies, especially:

- Class/group management
- Conflict management
- Individualised learning pathways
- Design thinking / creativity
- Competence-Based Approach (CBA) (particularly emphasised in Ghana)

São Tomé reported that trainers largely already had these skills but still wanted **updates and new methodologies**, including experience adapting learning for students with disabilities.

Digital Pedagogy is a Universal Priority, but Capacity Constraints Differ

All countries express interest in **integrating digital pedagogy beyond IT classes**. However, access varies:

- Angola: Some centers have computer rooms and projectors; others have old computers and limited internet, with digital training confined mainly to IT classes.
- Ghana: Digital tools are a major priority. Devices exist in some government-supported schools, but not fully in the PRSD centre; still, trainers can follow training autonomously using phones/laptops, with the centre ensuring data.
- São Tomé: Trainers already use computers/projectors/videos, but many are external collaborators, so flexibility and remote access are important.

Circular Waste & Circular Economy: Uneven Maturity, High Interest Everywhere

Circular waste skills show the strongest differences between countries:

- Angola included advanced, practical circular waste initiatives in at least one centre (soap from waste oil, textile reuse, milk carton upcycling), with a "waste to worth" entrepreneurship approach. Other Angolan TVET centers are earlier-stage (mini-ecopoints, awareness-raising)
- Ghana describes circular waste as a national priority, newly introduced in the public scene, and aligned with industry needs; PRSD already had at least one example of collaboration around recycling/charcoal.
- São Tomé finds the topic highly relevant but notes that circular economy is not currently being worked on in-country.

Entrepreneurship: Present in All, but Needs Stronger Tools and Contextualisation

Entrepreneurship is present across countries, often embedded in curricula; Angola explicitly frames TVET as a route to **self-employment**, not only employability. Ghana and São Tomé also see value in deepening entrepreneurship. São Tomé has strong institutionalisation (creation of an association supporting self-employment).

- São Tomé reports very strong partnerships and high employability (64%), including companies hiring entire cohorts (renewable energy/solar).
- Ghana notes that industry mapping exists, but building employer relationships is still challenging; many trainees continue studying or become self-employed, and no clear employability statistics are available.

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- Angola ranges from moderate employability (30–40%) where partnerships exist, to very low (2%) where partnerships have collapsed; some centres struggle to secure internships and equipment, and partnership networks can be fragile

The findings of the needs assessment were shared with all partners involved in the development of the training materials (CNOS-FAP, MQ, AREA, and SWA). These insights provided a robust evidence base to guide content development, ensuring that the training was demand-driven, context-sensitive, and tailored to the specific needs of trainers and institutions. By combining quantitative and qualitative methods, the consortium ensured that multiple perspectives were considered, thereby maximising the relevance and effectiveness of the ToT programme and its contribution to strengthening TVET quality across the three countries.

Trainers and teachers were selected from the participating TVET providers according to the following criteria:

- Priority was given to trainers who had not previously participated in similar EU-funded training initiatives, to extend opportunities to a wider group of educators.
- Demonstrated motivation and interest in environmental studies, waste management, sustainability, as well as pedagogical and digital upskilling.
- Representation of different technical sectors within vocational education, reflecting the cross-cutting nature of the programme and its applicability across training domains.

3.2 TRAINING DEVELOPMENT AND METHODOLOGY FOR IMPLEMENTATION

Based on the outcomes of the needs assessment, the Train-the-Trainers' modules were developed using a standardised training outline. This outline included all key information for each module: content overview, objectives, knowledge domain, structure and learning units, duration (in hours), learning outcomes, target audience, tools and materials, and additional supporting resources.

The use of a shared development framework enabled the consortium to apply a common quality standard across all modules and to explicitly define learning outcomes as the basis for content design. This learning outcomes–based approach shifted the focus from teaching inputs to learning results, ensuring coherence between objectives, content, methodology, and assessment. It also facilitated the transfer of competences from trainers to learners in subsequent project phases, within the Learners' Programme under Work Package 3 (WP3). To further support consistency and quality assurance in material development, CNOS-FAP prepared dedicated guidelines for training module development, covering:

- Criteria for content development based on the assessment of needs
- Language and accessibility requirements (English and Portuguese content, subtitled video lessons)
- Distribution of training hours (approximately 60% theoretical content and up to 40% self-learning activities, assignments, and Q&A sessions)
- Requirements for live interaction (at least two hours of live Q&A per ten hours of training)
- Assessment procedures (a final quiz with 5–10 questions for each module)
- Templates and documentation, including official slide templates and video production guidelines provided by AREA (including EU recognition across learning materials)

Each module was delivered through a blended learning approach, combining asynchronous recorded video lessons with synchronous online sessions involving trainers and international facilitators. The live sessions focused on clarification, discussion, and peer exchange and were organised separately for English-speaking and Portuguese-speaking participants to ensure inclusiveness and effective engagement.

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Module completion required successful participation in activities and the achievement of a minimum score of 60% in the final quiz. The balance between theoretical input and practical application was considered a key element of the methodology, enabling trainers to test newly acquired tools and approaches in their own classrooms and reflect on their application with peers and facilitators.

3.3 TRAINING MATERIALS ACCESSIBILITY & REPLICATION

All **training materials were developed in digital format in English and Portuguese** and designed for delivery through a blended learning model. The materials include pre-recorded bilingual theoretical lessons, presentations integrated with videos, and complementary audiovisual resources. The full training course was uploaded to the Smart Step e-learning platform, ensuring accessibility for trainers in all target countries. The platform, managed by AREA, was developed in a previous ERASMUS+ CBVET project and it is now hosting several training programmes. The platform will remain available beyond the project implementation period, allowing new learners to access the content upon registration and supporting replication, scalability, and long-term sustainability.

Smart Step (https://smartstep-community.com) is a multilingual e-learning platform equipped with interactive features and advanced tracking systems. These tools enabled the consortium to communicate with participants, monitor attendance, track learning progress, and assess quiz completion and results throughout the implementation of the training.

FIGURE 1: SMART STEP PLATFORM HOMEPAGE SCREENSHOT

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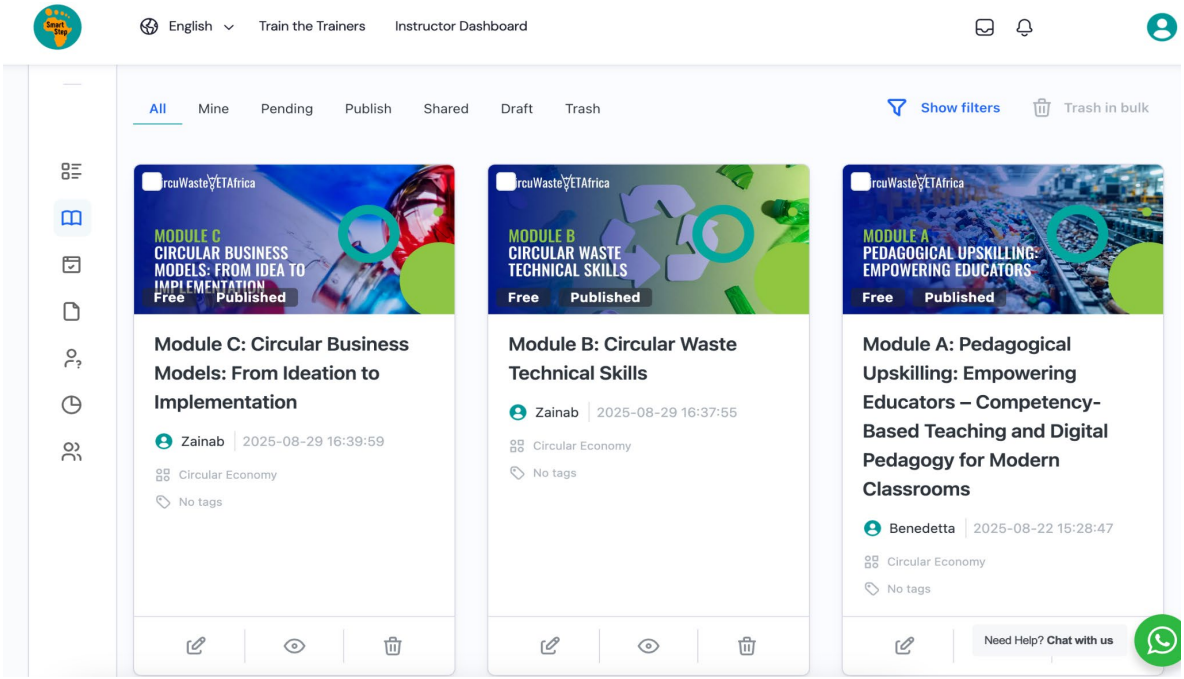

FIGURE 2: CIRCUWASTEVETAFRICA LEARNING MODULES ON SMART STEP PLATFORM, SCREENSHOT

3.4 TRAINING EVALUATION

To assess training effectiveness, material quality, facilitator performance, and achievement of learning outcomes, a comprehensive evaluation framework was established. A detailed analysis of this framework is provided in Deliverable 2.2, Train-the-Trainers' Report. The evaluation framework comprised two main components:

- Assessment of trainers' competence development and satisfaction
- Facilitators' self-evaluation of performance and satisfaction with training implementation.
- Evaluation activities combined quantitative and qualitative tools, including:
    - Online quizzes at the end of each module
    - Online questionnaires for trainers, including self-assessment of learning outcomes and satisfaction with modules and facilitation
    - Online self-evaluation questionnaires completed by facilitators
    - Focus groups with trainers conducted during final validation workshops in each country
    - Evaluation of trainers' competences by school directors during the final validation workshops, using criteria provided by the WP2 leader (CNOS-FAP).

Figure 2. CWVA Training modules on Smart Step Platform

The evaluation tools gathered feedback on materials, methodology, content relevance, facilitation quality, competence development, and the applicability of acquired knowledge to professional practice and learner training.

Overall, the evaluation framework ensured a comprehensive, multi-perspective assessment of both the training process and its outcomes. By integrating quality assurance mechanisms throughout the implementation cycle, it confirmed the relevance, effectiveness, and impact of the ToT programme, while also identifying areas for refinement. These findings provide a solid basis for continuous improvement and support the successful transfer of competences to learners in subsequent project phases.

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4. CONCLUSIONS

This deliverable has documented the design, development, and structuring of the Train-the-Trainers (ToT) programme within the CircuWasteVETAfrica project. Grounded in a robust needs assessment conducted across Ghana, Angola, and São Tomé, the programme translates identified skills gaps into a comprehensive and context-sensitive training offer aimed at strengthening the pedagogical, technical, entrepreneurial, and managerial capacities of VET trainers in the fields of circular economy and green waste management. In doing so, it directly contributes to the Erasmus+ priority of supporting the green transition through skills development in sustainability-oriented sectors.

Structured around six complementary modules, the ToT programme addresses modern pedagogical approaches, digital teaching tools, technical waste management competencies, circular business models, micro-entrepreneurship, frugal and digital innovation, and public–private partnerships. The adopted blended learning methodology, combining asynchronous digital content with synchronous interactive sessions, supports the Erasmus+ priority on digital transformation by fostering the effective use of educational technologies while ensuring flexibility and accessibility. Peer learning, collaborative reflection, and practical experimentation were embedded throughout the programme to enhance engagement and applied learning.

The availability of training materials in both English and Portuguese, hosted on the Smart Step e-learning platform, further strengthens inclusion and equal access, enabling participation across linguistic and institutional contexts and reducing barriers related to geography and resource availability. The open and reusable nature of the digital materials supports scalability and contributes to long-term usability beyond the project's lifetime.

As a key milestone of Work Package 2, this deliverable establishes a standardised yet adaptable framework for trainer capacity building, aligned with the Erasmus+ priority on quality, innovation, and excellence in education and training. The learning-outcomes-based design, shared development guidelines, and structured assessment mechanisms ensure coherence across modules and support the effective transfer of competences from trainers to learners. In this respect, the ToT programme plays a strategic preparatory role for Work Package 3, equipping trainers with the pedagogical methodologies, technical knowledge, and digital tools required to deliver the Learners' Programme in a consistent and high-quality manner.

The next phase of the project will focus on the implementation and monitoring of the Learners' Programme. Its adaptation and further refinement will be informed by the results and evaluation findings of the ToT programme, reinforcing a continuous improvement and quality assurance approach that is fully in line with Erasmus+ expectations.

Following the completion of the ToT activities, trained educators will act as multipliers within their respective VET institutions, delivering Work Package 3 learning activities to students and learners in the target countries. Through this cascading approach, the competences developed under Work Package 2 will be transferred to learners, supporting employability, entrepreneurship, and skills development in circular economy and green waste management. In parallel, the consortium will continue to promote replication, institutional uptake, and sustainability of the training model, reinforcing the long-term impact and systemic relevance of the CircuWasteVETAfrica project within national and regional VET systems.

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APPENDIX A TRAINERS' NEED ANALYSIS

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Reports

Default Report

CircuWasteVETAfrica: pre-training assessment questionnaire before ToT

This is an automated report based on raw data submitted to this project. Please conduct proper data cleaning prior to using the graphs and figures used on this page.

1. Name and Surname (only initials, e.g.Mark Spencer: M.S)

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
K.B	3	10
O.A	2	6.67
Isaac kwabena Dwomoh IKD	1	3.33
P.B	1	3.33
A.D	1	3.33
CW	1	3.33
A.D.A.	1	3.33
S. A-H	1	3.33
E.A	1	3.33
A. A. D.	1	3.33
M.N	1	3.33
OAA	1	3.33
P.T	1	3.33
EB.A	1	3.33
S O	1	3.33
S.M	1	3.33
S . K	1	3.33
AF	1	3.33
N.M	1	3.33
Cecilia Amoah	1	3.33
CAO	1	3.33
A.G	1	3.33
R.A	1	3.33

2. Country

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Ghana	26	86.67

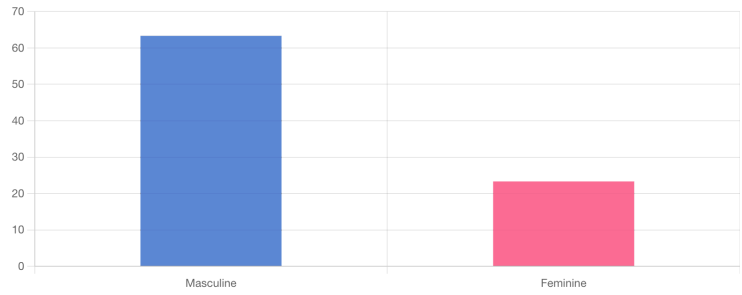
3. Age

TYPE: INTEGER. 26 out of 30 respondents answered this question. (4 were without data.)

Mean	Median	Mode	Standard deviation
35.31	35.50	42.00	8.80

4. Gender

TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
Masculine	19	63.33
Feminine	7	23.33

5. Education Level

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Degree	8	26.67
Diploma	3	10
BSc	2	6.67
HND	2	6.67
Higher National Diploma	2	6.67
Mphil Construction Technology	1	3.33
Bsc.	1	3.33
Tertiary	1	3.33
Bachelor Degree	1	3.33
Bsc	1	3.33
Btech (Degree)	1	3.33
Btech Electrical/Electronic Engineering	1	3.33
Diploma in Education	1	3.33
Bachelor	1	3.33

6. What did you study?

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Mechanical engineering	3	10
Fashion	2	6.67
Plumbing Technology	2	6.67
Construction	1	3.33
Building Construction	1	3.33
Statistics	1	3.33
Physics	1	3.33
Technology	1	3.33
Bsc. Electrical/Electronic Technology Education	1	3.33
Human Resource	1	3.33
Plumbing and Gas engineering	1	3.33
Accounting in computing	1	3.33
Electrical/electronic Engineering	1	3.33
BSc Electrical/Electronic Technology Education	1	3.33
Ciivil engineering	1	3.33
English language	1	3.33
Mathematics	1	3.33
Accounting	1	3.33
Automotive engineering	1	3.33
Bsc. Information Technology	1	3.33
Bsc. Information Technology education	1	3.33
Fashion design and textile education	1	3.33

7. Which subjects have you been teaching until now?

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Automobile engineering	3	10
Mathematics	2	6.67
Building Construction	1	3.33
Construction practice	1	3.33
Fashion designing	1	3.33
Integrated Science	1	3.33
Technical	1	3.33
Electrical Principles	1	3.33
Entrepreneurship	1	3.33
Plumbing and Gas engineering	1	3.33
Entrepreneurship skills training	1	3.33
Electrical/Electronic principles	1	3.33
Electrical Engineering Technology	1	3.33
Wood technology	1	3.33
English language	1	3.33
Social Studies	1	3.33
Engineering technology	1	3.33
Garment	1	3.33
Plumbing electives and Practicals	1	3.33
Plumbing electives and practical	1	3.33
Information and Communication Technology	1	3.33
Information communication Technology	1	3.33
Garment design	1	3.33

8. Experience in teaching (number of years)

TYPE: INTEGER. 26 out of 30 respondents answered this question. (4 were without data.)

Mean	Median	Mode	Standard deviation
6.58	5.00	3.00	5.47

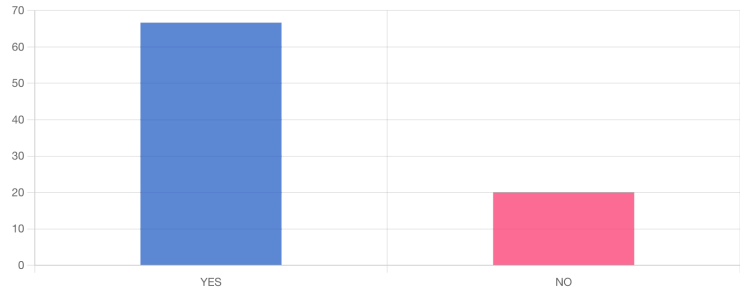
9. What do you consider is your field of “expertise”?

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Mathematics	2	6.67
Environmental studies	2	6.67
Building science	1	3.33
Construction works	1	3.33
Patten drafting and garment construction	1	3.33
Teaching	1	3.33
Technical	1	3.33
Electrical Engineering	1	3.33
Training people	1	3.33
Water and environmental engineering	1	3.33
Facilitator of entrepreneurship	1	3.33
Electricals	1	3.33
Electrical engineering	1	3.33
Ciivil engineering and wood technology	1	3.33
Management	1	3.33
Welding and fabrication	1	3.33
Mechanics	1	3.33
Facilitator	1	3.33
Auto Mechanic	1	3.33
Automotive engineering	1	3.33
Yes	1	3.33
Graphic Designing/IT Expert	1	3.33
Accounting	1	3.33
Pattern drafting and garment production	1	3.33

10. Have you received any pedagogical training during your education?

TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
YES	20	66.67
NO	6	20

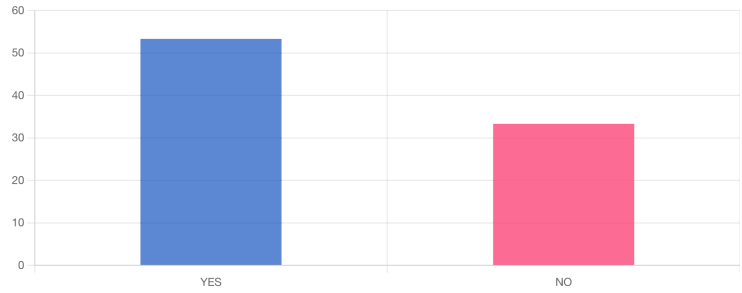
11. If yes, how many years or hours of training have you completed?

TYPE: TEXT. 24 out of 30 respondents answered this question. (6 were without data.)

Value	Frequency	Percentage
No	3	10
4 years	2	6.67
40 hours	2	6.67
2 years	2	6.67
1year	2	6.67
6 years	1	3.33
2years	1	3.33
7 years	1	3.33
4years	1	3.33
5 years	1	3.33
2 years Competence Base Training	1	3.33
None	1	3.33
2 Year	1	3.33
2 year CBT Training	1	3.33
1 Year	1	3.33
7 hours	1	3.33
1yr	1	3.33
2	1	3.33

12. Have you ever studied pedagogical skills on your own (e.g., books, online research)

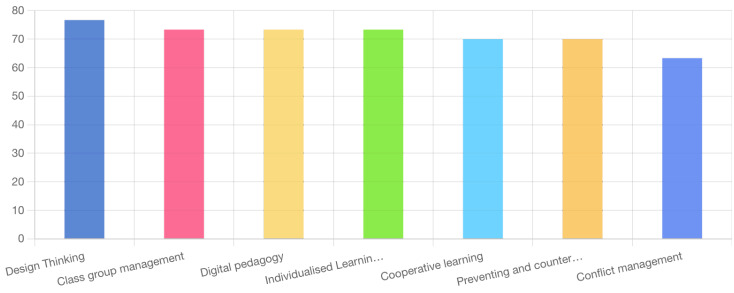
TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
YES	16	53.33
NO	10	33.33

13. Which of the following pedagogical skills do you think you could improve in your teaching?

TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
Design Thinking	23	76.67
Class group management	22	73.33
Digital pedagogy	22	73.33
Individualised Learning Path for students with special needs	22	73.33
Cooperative learning	21	70
Preventing and countering bullying	21	70
Conflict management	19	63.33

14. Are you interested in receiving training in pedagogical upskilling?

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Yes	26	86.67

15. Have you ever developed an individualised training path for your students? (if yes, briefly explain the methodology applied)

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
No	23	76.67
Cooperative learning	1	3.33
Yes (role play method)	1	3.33
Yes, I used to organize individual ability studies which yield students get more insight on topics they could understand during classes hours	1	3.33

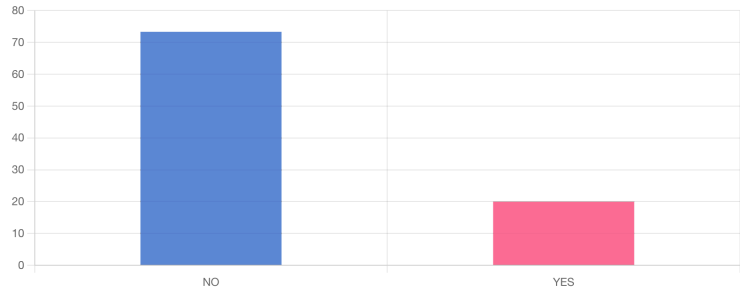
16. Are you familiar with methodologies for recognizing students' soft skills? (if yes, which one?)

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
No	21	70
Team work	2	6.67
Yes, Demostration	1	3.33
Group learning	1	3.33

17. Are you familiar with the concept and practices of a circular economy?

TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
NO	22	73.33
YES	6	20

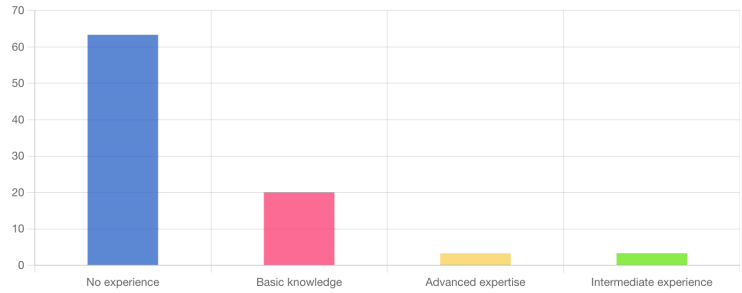
18. If you answered yes to the previous question, do you know what the 9R's framework is?

TYPE: TEXT. 18 out of 30 respondents answered this question. (12 were without data.)

Value	Frequency	Percentage
No	15	50
Yes	2	6.67
The 9R's framework is a key concept in the circular economy that outlines strategies for reducing waste, conserving resources, and promoting sustainability. It expands on the traditional 3R's (Reduce, Reuse, Recycle) by adding more detailed steps to enhance material efficiency and minimize environmental impact.	1	3.33

19. What is your current level of knowledge and experience in circular waste technical skills?

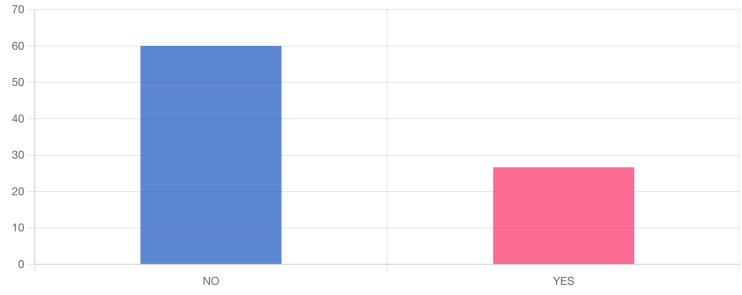
TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
No experience	19	63.33
Basic knowledge	6	20
Advanced expertise	1	3.33
Intermediate experience	1	3.33

20. Did you have any chance to study something related to circular waste on your own? (books, Online research)

TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
NO	18	60
YES	8	26.67

21. Are you interested in receiving training in circular waste? Please, tell us why.

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
Yes	2	6.67
To get in depth knowledge	1	3.33
Yes. I want to help improve environmental sustainability in Ghana and the world at large.	1	3.33
Yes. It will help to manage waste in my field	1	3.33
Yes, because I want to learn how to manage waste.	1	3.33
Yes, I want to know more about circular waste and waste management	1	3.33
Yes.	1	3.33
Yes. Because I want to use the knowledge that I will gain to reduce the waste in the my community.	1	3.33
Yes. In other be very knowledgeable circular waste management	1	3.33
Yes, I would be interested in receiving training in circular waste management. Here's why, Sustainability in Plumbing & Sanitation – As a professional in Plumbing and Gas Engineering, understanding circular waste systems would help integrate sustainable waste management practices into plumbing designs, especially in water recycling, wastewater treatment, and biogas systems.	1	3.33
Yes. It will be useful and impactful for my country Ghana.	1	3.33
Yes because I want to be part of your training so that I experience and use it to train others	1	3.33
Yes. I want to have the experience to be able to impact others with the training I would receive	1	3.33
Yes. For onward training.	1	3.33

Yes to have the knowledge in waste management	1	3.33
Because I want to be facilitator	1	3.33
Yes because I want to be improved My knowledge on waste management	1	3.33
Yes, to be facilitator	1	3.33
Yes ,to get skill for trainers	1	3.33
How to manage our waste	1	3.33
Because I will know more	1	3.33
Yes, In order to know how to deal with waste so as to help maintain and conserve the health environment.	1	3.33
Yes, In order to help the public in addressing problems regarding sanitation.	1	3.33
It will help to educate my learners waste management	1	3.33

22. Which could be the main challenges you would face in integrating circular waste management concepts into your vocational training courses?

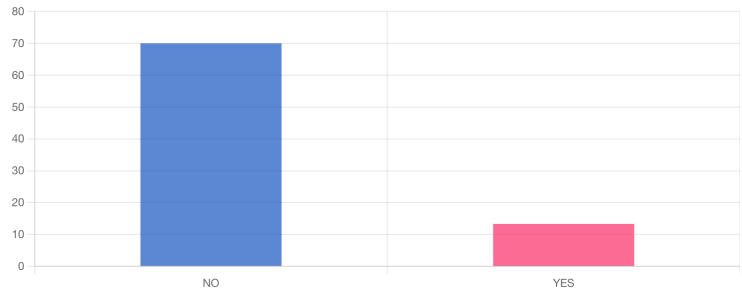
TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
Learning materials	2	6.67
equipment handling	1	3.33
Time, facilities and learning materials	1	3.33
The availability of learning material	1	3.33
Non availability of resources and learning materials.	1	3.33
Learning Materials, Understanding the concept of circular waste management, bad perception of waste handling etc.	1	3.33
The main challenge would be the lack of facilities for hands on practical work. Another challenge would have to do with easy understanding of the concept of circular waste management by facilitators and the learners	1	3.33
Lack of facilities and learning materials	1	3.33
Limited Awareness and Buy-in – Many students and even instructors may not be familiar with circular economy principles, making it difficult to integrate them effectively	1	3.33
Facilities and learning materials needed for the program	1	3.33
Learner may have difficulty dealing with the stigma associated with waste management	1	3.33
Being able to understand the new concept	1	3.33
Facilities	1	3.33
Learning materials and facilities	1	3.33
Facilities and learning materials for facilitators are the learners	1	3.33
Resource constraint	1	3.33
Facilitices for learner and learning material for learners,income for finance the pro	1	3.33
Resources constraint	1	3.33

Learning Materials and workshops	1	3.33
Because it not part of our cause	1	3.33
Lack of learning materials	1	3.33
Limited Practical Exposure	1	3.33
Yes to be able to control waste	1	3.33
Fast fashion	1	3.33

23. Do you know the difference between a linear business model and a circular business model?

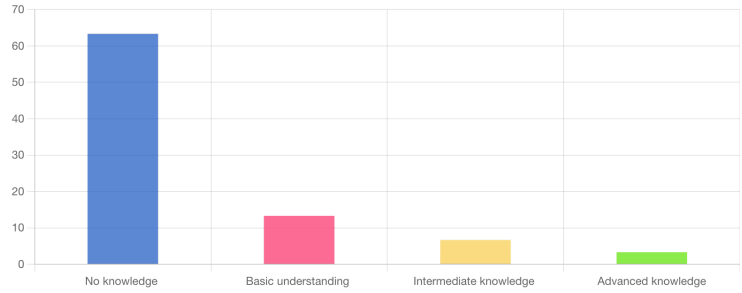
TYPE: SELECT_MULTIPLE. 25 out of 30 respondents answered this question. (5 were without data.)



Value	Frequency	Percentage
NO	21	70
YES	4	13.33

24. What is your current level of knowledge about circular business models and their application in different fields?

TYPE: SELECT_MULTIPLE. 25 out of 30 respondents answered this question. (5 were without data.)



Value	Frequency	Percentage
No knowledge	19	63.33
Basic understanding	4	13.33
Intermediate knowledge	2	6.67
Advanced knowledge	1	3.33

25. What could be the biggest challenges you face when integrating circular economy principles into your teaching?

TYPE: TEXT. 24 out of 30 respondents answered this question. (6 were without data.)

Value	Frequency	Percentage
The use of tools and equipment during teaching	1	3.33
Availability of resources	1	3.33
Learning material	1	3.33
Lack of resources	1	3.33
That will be the understanding of learners of the new principles and practical	1	3.33
The main challenge will be facilities constraints	1	3.33
Student interest	1	3.33
Integrating circular economy principles into my teaching at Ramseyer Technical Institute could present several challenges: 1. Limited Curriculum Flexibility – The existing syllabus may not have enough room to incorporate circular economy concepts without adjustments or approvals from educational authorities. 2. Resource Constraints – Practical training in circular waste management requires specialized materials, equipment, and facilities, which may not be readily available at the institute. 3. Knowledge & Training Gaps – While I have expertise in plumbing and sanitation, I may need additional training in circular economy frameworks and innovative waste recovery technologies to effectively teach these concepts. 4. Student Awareness & Interest – Many students may not initially see the relevance of circular waste management in plumbing and gas engineering, requiring extra effort to engage and motivate them.	1	3.33
Learning materials and practical materials needed for the program	1	3.33
When there's no learning materials available for both the teacher and trainer	1	3.33
Educating learners to deal with the stigma about waste management	1	3.33

Availability of resources and interest of students	1	3.33
Resources	1	3.33
Resources constraint	1	3.33
Learning materials	1	3.33
The course is new to the student	1	3.33
The course is new to the student so you find a little challenging for them to understand the concept	1	3.33
Because the course new to the student	1	3.33
Resources and facilities	1	3.33
Because I don't know much about it	1	3.33
Lack of learning materials	1	3.33
Financial constraint	1	3.33
Curriculum Adaptation	1	3.33
Inadequate resources	1	3.33

26. Are you interested in receiving training in circular business models? Please tell us why

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
Yes	2	6.67
Yes because I want to help improve environmental sustainability	1	3.33
It will help create the awareness of circular waste management	1	3.33
Yes, because it will help manage waste in my country	1	3.33
Yes, to help train others and create awareness for others	1	3.33
Yes. These will create entrepreneur opportunities	1	3.33
Yes, because implementing the knowledge gained could help national economic development	1	3.33
Yes. To be more empowered to teach or train other people	1	3.33
Yes, I would be very interested in receiving training in circular business models for several reasons: 1. Enhancing Plumbing & Sanitation Sustainability – Understanding circular business models would help me develop and promote sustainable plumbing practices, such as water reuse, waste-to-resource innovations, and eco-friendly materials. 2. Strengthening My Role as an Educator – As Head of the Plumbing & Gas Engineering Department at Ramseyer Technical Institute, I can integrate circular economy concepts into the curriculum, preparing students for future job markets that prioritize sustainability. 3. Aligning with My MPhil Studies – Since I've applied for an MPhil in Water Supply and Environmental Sanitation, learning about circular business models will provide practical strategies for implementing waste management and resource recovery solutions.	1	3.33
Yes. It will create job for my country Ghana	1	3.33

Yes because I need it to implement in my institute to create entrepreneur opportunities	1	3.33
Will enhance and improve on the education on the training	1	3.33
Yes . To heip in environmental cleaning	1	3.33
Yea to be well informed	1	3.33
Yes,to create job in Ghana	1	3.33
Yes to provide job for my country Ghana	1	3.33
Yes,to know more about it.	1	3.33
To provide job for trainers and skills development	1	3.33
How to recycle our waste disposal	1	3.33
I will know more about circular business model	1	3.33
Yes, To know more about circular business models.	1	3.33
Yes. This will help me in my future life	1	3.33
Lack of facilities and resources	1	3.33
It helps to achieve product which is economic and environmental friendly	1	3.33

27. Have you received any formal training in micro-entrepreneurship skills for micro-SMEs?

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
Yes	18	60
No	6	20
Not yet	1	3.33

28. Do you have professional experience in entrepreneurship? If yes, please describe your experience.

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
No	6	20
I own a business	2	6.67
Yes. I am also into agro-farming business	1	3.33
Yes, I have established my own small business	1	3.33
Yes, I helped a friend set up his business	1	3.33
Yes. I have entered into my own business in many micro businesses	1	3.33
Yes. I have been able to utilize the knowledge on entrepreneurial studies in school to set up a small business	1	3.33
I have established my own business and managing it.	1	3.33
I have some professional experience in entrepreneurship, mainly within the plumbing and sanitation industry. Here's an overview of my experience: 1. Freelance Plumbing Services – I have independently taken on projects in pipe-laying, sanitary appliance repair, and pump installation, providing plumbing solutions to individuals and businesses. This experience required managing clients, sourcing materials, and ensuring quality service delivery. 2. Technical Training & Consulting – As a former Teaching Assistant at Takoradi Technical University and Africa Center for Technical Training, I have provided training and consultancy services in plumbing technology, helping students and professionals improve their skills.	1	3.33
Owning and managing my business	1	3.33
Yes I have established my own business	1	3.33
I have gained knowledge on some aspects of how entrepreneurship is about	1	3.33
Yes. Help others to create businesses	1	3.33
I have small business	1	3.33

Yes because I have established my ow small business	1	3.33
Yes, It help to establish your own business and earn income for a living	1	3.33
It is process of identifying opportunities developing innovative solutions and taking calculated risks to create and manage a new business venture ultimately	1	3.33
Yes, it helped me in taken risk for opening my small entity which feeding me small small	1	3.33
Yes. I manage my own business	1	3.33

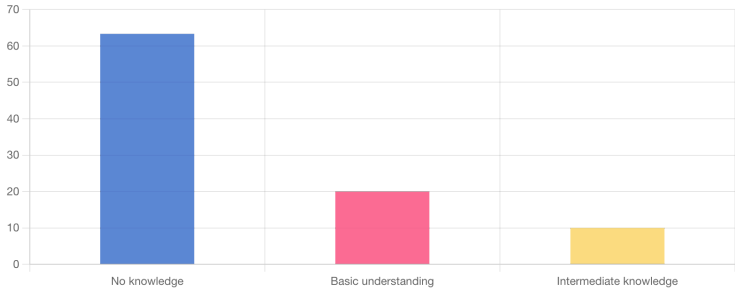
29. Would you be interested in receiving training in micro-entrepreneurship skills for micro-SMEs?

TYPE: TEXT. 26 out of 30 respondents answered this question. (4 were without data.)

Value	Frequency	Percentage
Yes	26	86.67

30. How would you rate your current knowledge of frugal and digital innovation in circular waste management and the circular economy?

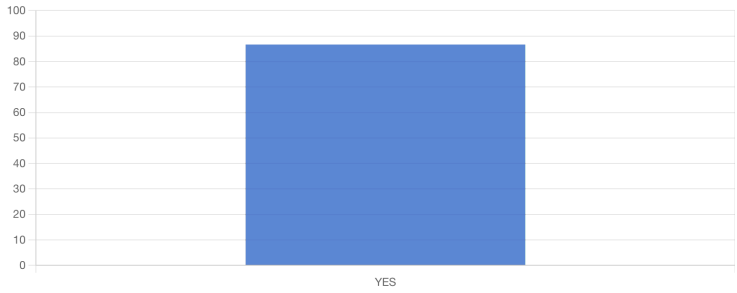
TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
No knowledge	19	63.33
Basic understanding	6	20
Intermediate knowledge	3	10

31. Would you be interested in receiving training on frugal and digital innovation for circular waste management and the circular economy?

TYPE: SELECT_MULTIPLE. 26 out of 30 respondents answered this question. (4 were without data.)



Value	Frequency	Percentage
YES	26	86.67

32. What are in your opinion the main challenges that your TVET Centre faces in their relationship with the private sector/companies?

TYPE: TEXT. 24 out of 30 respondents answered this question. (6 were without data.)

Value	Frequency	Percentage
Limited industrial collaboration	4	13.33
No idea	3	10
Problem solving skills in VET	1	3.33
The curriculum is not in line with what is done at the industries	1	3.33
Lack of cooperation between industry and institution	1	3.33
Lack of provision of training facilities	1	3.33
In my opinion, the main challenges that Ramseyer Technical Institute (RTI) and other TVET centers face in their relationship with the private sector/companies include: 1. Limited Industry Collaboration Many private companies do not actively engage with TVET institutions for curriculum development, internships, or apprenticeships. There is often a disconnect between industry needs and TVET training, leading to skill gaps among graduates. 2. Outdated Training Equipment & Technology Many TVET centers lack modern tools and equipment that align with industry standards, making it difficult for students to gain hands-on experience that matches real-world job requirements.	1	3.33
Limited in industrial collaboration	1	3.33
Limited industry collaboration	1	3.33
Limited cooperation between the private sector and the centre	1	3.33
No Idea	1	3.33
Limited collaboration of companies	1	3.33
Limited resources and facilities	1	3.33
Lack of facilities	1	3.33
Difficult to get industries for students attachment	1	3.33

Lack of collaboration with the private companies in terms of students attachment.	1	3.33
Lack of infrastructures	1	3.33
Lack of private collaboration	1	3.33
The curriculum design was different from what the industry needed	1	3.33

33. List at least 3 key actors at your local or national level, for the job placement of students.

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
1. Entrepreneurial Establishment 2. The use of agro-waste product as a sustainability measure in Ghana.	1	3.33
Trade leaders, garment factories, private sewing shops	1	3.33
Zoom Lion limited, Electricity Company of Ghana, Uni-Jay Fashion	1	3.33
E.C.G, Anglogold, CTVET.	1	3.33
Zoom Lion Ltd, NICKSETH COMPANY LTD, and Ghana tvet service	1	3.33
1. Electricity Company Ghana. 2. GridCo. 3. Volta River Authority	1	3.33
Unity Fashion. CTVET, Zoomlion company of Ghana	1	3.33
At the local and national level, three key actors involved in job placement for TVET students in Ghana include: 1. Council for Technical and Vocational Education and Training (COTVET) (Now part of Commission for TVET - CTVET) Role: Regulates and promotes technical and vocational education in Ghana. Job Placement Contribution: Works with industries to ensure TVET graduates have the right skills for employment and promotes apprenticeship and internship programs. 2. Ghana TVET Service Role: Oversees TVET institutions and ensures students receive industry-relevant training. Job Placement Contribution: Facilitates career guidance, industry linkages, and job placement programs for graduates. 3. Association of Ghana Industries (AGI) Role: Represents private businesses and industries across different sectors, including plumbing, construction, and manufacturing. Job Placement Contribution: Connects TVET graduates with companies looking for skilled workers through partnerships, training programs, and industrial attachments.	1	3.33

Uni Jay fashion , zoomlion company of Ghana, CTVET	1	3.33
Mining company, contracts and electricity company.	1	3.33
1. Electricity Company of Ghana. 2. Association of Ghana Industries3. CTVET	1	3.33
Cotvet, Association of Ghana industries , Ghana Tvet	1	3.33
Zoomlion, Unijay and Bethel	1	3.33
Mining sector, Toyota Ghana,andECG	1	3.33
Zoom Lion company of Ghana , Electricity company of Ghana and Uni Jay fashion	1	3.33
Mining sector, Toyota Ghana and ECG	1	3.33
UNIJAY FASHION COMPANY GHANA, ZOOM LION COMPANY NoGHANA, CTVET.	1	3.33
Mining sector, Toyota and ECG	1	3.33
Mining sector, Toyota Ghana limited and CTVET	1	3.33
Self employment, Youth employment and Government employment	1	3.33
Ghana water company, community water and sanitation agency limited, electricity company of Ghana	1	3.33
COTVET, GTVET, Association of Ghana Industry	1	3.33
1. Government Employment Agencies 2. Educational Institutions and Career Centers 3. Private Sector and Industry	1	3.33
zoomlion, CTVET, Unijay	1	3.33
Small scale enterprise,	1	3.33

34. Which tools do you use to identify the skills required by companies/private sector?

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
No idea	15	50
The industry standards and employee assessment.	1	3.33
Certificate	1	3.33
To identify the skills required by companies and the private sector, I use a combination of research tools and methods, including: 1. Web Search I can use the web tool to check job postings, company websites, and industry reports for current skill demands. Searching for labor market trends and industry reports helps track emerging skills. 2. Company Websites & Job Portals Platforms like LinkedIn, Indeed, and Glassdoor provide insights into the most sought-after qualifications. Reviewing job descriptions reveals technical and soft skills employers prioritize. 3. Government and Industry Reports Reports from organizations like the International Labour Organization (ILO), World Economic Forum (WEF), and local labor ministries provide updated skill demand trends. 4. Professional and Trade Associations Associations related to Plumbing, Gas Engineering, and Water Sanitation often publish skills frameworks and industry requirements. 5. Surveys & Employer Engagement Some institutions conduct direct surveys with employers to understand their needs. Engaging with industry professionals through networking or industry conferences provides first-hand insights.	1	3.33
No Idea	1	3.33
No idea	1	3.33
NO idea	1	3.33
Observations	1	3.33
No	1	3.33
Job Market Analytics	1	3.33

Collaboration platform	1	3.33

35. How do you match students' skills and market demand?

TYPE: TEXT. 25 out of 30 respondents answered this question. (5 were without data.)

Value	Frequency	Percentage
No idea	14	46.67
creation of a comprehensive strategy	1	3.33
There is a mis- match between what the market want and what the students learn	1	3.33
To cooperation with industry to determine the need for the job requirements	1	3.33
The job market requires more skilled students	1	3.33
Industry Engagement and Curriculum Alignment	1	3.33
No	1	3.33
NO IDEA	1	3.33
Matching student skills with market demand involves a multifaceted approach including analyzing industry needs tailoring curricular offering relevant training and fostering	1	3.33
By aligning the curriculum based on the market demands.	1	3.33
Yes	1	3.33
By training learners base on industrial demand	1	3.33

Reports

Default Report

CircuWasteVETAfrica: Questionário diagnóstico

This is an automated report based on raw data submitted to this project. Please conduct proper data cleaning prior to using the graphs and figures used on this page.

1. Nome e Apelido (apenas as iniciais por ex. Mark Spencer: M.S)

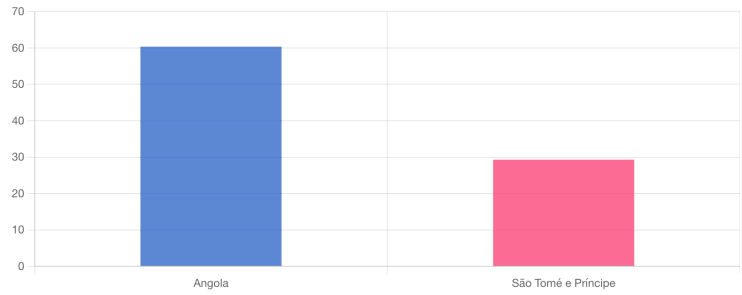
TYPE: TEXT. 51 out of 58 respondents answered this question. (7 were without data.)

Value	Frequency	Percentage
António Assunção: A.A	1	1.72
Eanes Lima dos Anjos Cravid	1	1.72
A. E.S	1	1.72
Sequeira Miguel	1	1.72
SDSA	1	1.72
Josias Barreto JB	1	1.72
Antónia Bento Luíz	1	1.72
Emídio Pereira	1	1.72
Jerry Raisser da Conceição Neto	1	1.72
E.P.	1	1.72
IO	1	1.72
A.D	1	1.72
LBCS	1	1.72
Julio santos	1	1.72
M C	1	1.72
IQm	1	1.72
Hulda Leana da Costa Gonçalves do Nascimento Costa Alegre	1	1.72
Bernabé Mendes Dumbo	1	1.72
J. S. C	1	1.72
Lourenço de carvalho Sabino	1	1.72
bartolmeu sabino	1	1.72
H.L	1	1.72
Ernestino Gomes	1	1.72
Fausto António	1	1.72
kangaji Monica	1	1.72
G. P	1	1.72

Aderito dos Santos Tunguno	1	1.72
Manuel António Golombole Chiquina	1	1.72
A. C	1	1.72
Sara Cristóvão	1	1.72
João Cecílio Manual	1	1.72
Francisco Manjolo	1	1.72
Daniel Quaresma Brinco	1	1.72
Maria Grciana G	1	1.72
Lopes Manuel:L.M	1	1.72
Garcia José Francisco	1	1.72
Silas António Ferraz	1	1.72
Wilson Arlindo Martins Chionga	1	1.72
António Quiculo Paulino	1	1.72
C. M	1	1.72
António Mateus Martins	1	1.72
Filipa Antonio : M.S	1	1.72
Hermenegildo Fançony Tavira	1	1.72
Janete Viana: J.V	1	1.72
Daniel Abraão: Djaniny	1	1.72
M.M	1	1.72
C.M.H.Q.M	1	1.72
Breyner Lopes	1	1.72
Bráulia Costa do Nascimento: BCN	1	1.72
Miguel de Oliveira Gomes	1	1.72
Ajorney Tiny	1	1.72

2. País

TYPE: SELECT_MULTIPLE. 52 out of 58 respondents answered this question. (6 were without data.)



Value	Frequency	Percentage
Angola	35	60.34
São Tomé e Príncipe	17	29.31

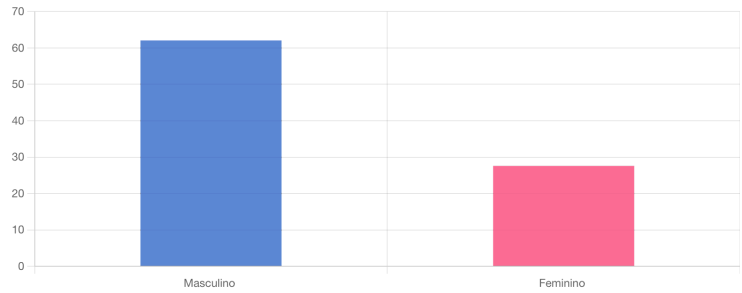
3. Idade

TYPE: INTEGER. 51 out of 58 respondents answered this question. (7 were without data.)

Mean	Median	Mode	Standard deviation
34.92	36.00	38.00	14.24

4. Género

TYPE: SELECT_MULTIPLE. 52 out of 58 respondents answered this question. (6 were without data.)



Value	Frequency	Percentage
Masculino	36	62.07
Feminino	16	27.59

5. Nível de escolaridade (ensino primário, ensino secundário, ensino profissional, licenciatura)

TYPE: TEXT. 52 out of 58 respondents answered this question. (6 were without data.)

Value	Frequency	Percentage
Licenciatura	15	25.86
Ensino secundário	4	6.9
Ensino profissional	4	6.9
Ensino Secundário	3	5.17
Ensino Profissional	2	3.45
Pós graduação	2	3.45
Licenciado	2	3.45
Ensino Profissional e Frequência 3º Ano de Licenciatura	1	1.72
Licenciado em Direito Ciências Politica Administração Pública	1	1.72
Doutor	1	1.72
Ensino secundário e ensino profissional	1	1.72
secundario	1	1.72
LICENTURA	1	1.72
13 classe	1	1.72
ENSINO SECUNDARIO	1	1.72
Doutorado	1	1.72
Ensino secundario	1	1.72
13° Classe	1	1.72
Licenciatura / eletricidade e sistemas fotovoltaicos	1	1.72
Ensino Superior	1	1.72
Licencitura	1	1.72
Ensino secundário do ll° círculo	1	1.72
3° ano	1	1.72
Frequência universitária	1	1.72

Mestrado	1	1.72
Doutoramento	1	1.72
Ensino profissional e licenciatura	1	1.72

6. Qual foi a sua área de estudos?

TYPE: TEXT. 52 out of 58 respondents answered this question. (6 were without data.)

Value	Frequency	Percentage
Engenharia Informática	2	3.45
Engenharia Civil	2	3.45
Ciências Físicas e Biológicas	2	3.45
Ciências Sociais	2	3.45
TI	1	1.72
Higiene e Segurança no Trabalho; Licenciatura em Direito	1	1.72
Economia	1	1.72
Direito	1	1.72
Ciências Socciais	1	1.72
Gestão e Direito	1	1.72
Ambiente	1	1.72
Economia e Gestão Petrolífera	1	1.72
gestão	1	1.72
Ambiente Gestão de Território	1	1.72
Ciências exatas e Decoração	1	1.72
Eng. Mecatronica	1	1.72
informatica	1	1.72
Ambiente e Gestão do Território	1	1.72
Higiene e Segurança no trabalho/ Educadora do Ensino Básico	1	1.72
Contabilidade e Gestão	1	1.72
Gestão empresarial	1	1.72
CIENCIA BIOLOGICAS	1	1.72
Ciência Política e Administração do Território	1	1.72
Gestão e Contabilidade	1	1.72
Matemática e Física, e Corte e Costura	1	1.72

Geografia e Historia	1	1.72
Ciências Económicas e Jurídica	1	1.72
Matematica e fisica	1	1.72
Gestão	1	1.72
Relações Internacionais	1	1.72
Ciências Económicas e Jurídicas	1	1.72
Relaçãoes internacionais	1	1.72
Economia/gestão de empresas	1	1.72
Ensino de historia	1	1.72
ISPM	1	1.72
Língua francesa	1	1.72
Pedagogia	1	1.72
Ciências económicas e jurídica	1	1.72
Contabilidade E GESTÃO	1	1.72
Eletricidade	1	1.72
Energia e Instalação Eléctrica	1	1.72
Gestão e administração	1	1.72
Energia e instalações electricas	1	1.72
Construção civil	1	1.72
Nenhuma	1	1.72
Enfermagem Geral	1	1.72
Engenharia do Ambiente/ Proteção Civil	1	1.72
Electrotecnia e Informática e Gestão de Empresas	1	1.72

7. Que disciplinas tem ensinado até agora?

TYPE: TEXT. 50 out of 58 respondents answered this question. (8 were without data.)

Value	Frequency	Percentage
Higiene e Segurança no Trabalho	3	5.17
Informática	3	5.17
História, Sociologia e Pedagogia	2	3.45
Nenhuma	2	3.45
Frio e climatização	2	3.45
TIC	1	1.72
Economia e Recursos Humanos	1	1.72
Inglês práctico	1	1.72
Empreendedorismo	1	1.72
Gestão Ambiental	1	1.72
Gestão,Empreendedorismo ,Plano de Negocio	1	1.72
Economia, Empreendedorismo e Contabilidade	1	1.72
Curso de Medições e Orçamento (Tecnologia da Construção, Projeto de Edificações – Leitura e Interpretação, Planejamento e Gerenciamento de Obras, Materiais de Construção, Informática Aplicada ao Orçamento); Educação laboral, Design de comunicação visual; Curso de Segurança, higiene e saúde Nível I & II.	1	1.72
Decoração	1	1.72
As disciplinas são: Controlo de Qualidade, Higiene e Segurança no Trabalho, Gestão Metrológica na Industria, Metrologia Básica, Avaliação de Risco, controlo de risco	1	1.72
higiene e seguranca no trabalho e logistica	1	1.72
HST e Pedreira	1	1.72
Gestão Ambiental, Educação Ambiental	1	1.72
Higiene e segurança no trabalho	1	1.72
Curso Ligado a area de Metrologia	1	1.72

Canalização	1	1.72
SERRALHARIA CIVIL	1	1.72
Gestão de empresas	1	1.72
Contabilidade , Gestão, Projecto de investimento	1	1.72
Matemática e Física, e Corte e Costura.	1	1.72
História	1	1.72
Frio	1	1.72
FISICA	1	1.72
Higiene e Segurança no trabalho	1	1.72
Mecânica e educação laboral	1	1.72
Electricidade e sistemas fotovoltaicos	1	1.72
Formação trabalhista	1	1.72
Não	1	1.72
Língua francesa e Informática	1	1.72
Director Pedagógico	1	1.72
Técnicas de soldadura industrial	1	1.72
Instalação eletrica	1	1.72
Electricidade de baixa tensão	1	1.72
Habilidade para Vida	1	1.72
Habilidades para vida	1	1.72
Emc	1	1.72
Ética e Deontologia Profissional	1	1.72
Eletricidade predial	1	1.72

8. Experiência no Ensino (número de anos)

TYPE: INTEGER. 48 out of 58 respondents answered this question. (10 were without data.)

Mean	Median	Mode	Standard deviation
9.75	8.50	*	8.55

9. Qual considera ser a sua área de “especialização”?

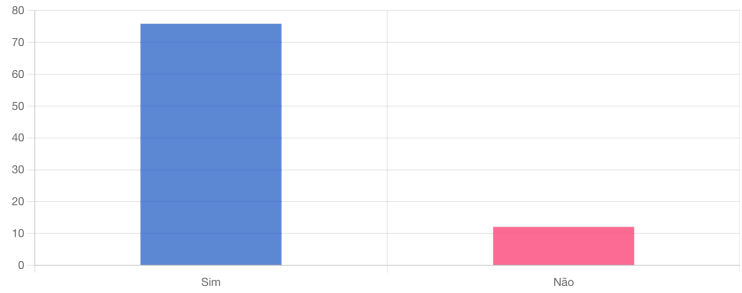
TYPE: TEXT. 48 out of 58 respondents answered this question. (10 were without data.)

Value	Frequency	Percentage
Construção de WebSites	1	1.72
Higiene e Segurança no Trabalho e Direito laboral	1	1.72
Economia	1	1.72
Direito e formações continuas ao nível da língua inglesa	1	1.72
Socviologia	1	1.72
Direito	1	1.72
Ambiente e Ação Climática	1	1.72
Empreendedorismo e coaching de Negócios	1	1.72
Medições e Orçamento; e SHST	1	1.72
Administrativa	1	1.72
Decoração	1	1.72
A área de especialização é Higiene e Segurança no Trabalho.	1	1.72
logistica	1	1.72
Construção civil	1	1.72
Gestão Ambiental	1	1.72
Higiene e Segurança no trabalho	1	1.72
Áreas ligadas as TIC´s	1	1.72
Administração e serviços	1	1.72
Canalização	1	1.72
serralharia civil	1	1.72
Gestão Pública	1	1.72
Contabilidade e Gestão	1	1.72
Matemática e Corte e Costura.	1	1.72
Pastelaria e culinaria	1	1.72

Climatização e Refrigeração doméstica	1	1.72
Fisica	1	1.72
Higiene e Segurança no Trabalho	1	1.72
Atendimento ao cliente e marketing	1	1.72
Mecânica, o tema sobre motor	1	1.72
Electricidade/energias renováveis	1	1.72
Ensino de formação trabalhista	1	1.72
No ramo da Justiça	1	1.72
Informática na óptica do utilizador (software básico)	1	1.72
Pedagogia	1	1.72
Economia Juridicas	1	1.72
Gestão Empresarial	1	1.72
Soldadura industrial	1	1.72
Eletricidade	1	1.72
Electricidade	1	1.72
Área Social	1	1.72
Frio e climatização	1	1.72
Hotelaria	1	1.72
Projectista	1	1.72
Formação de professores	1	1.72
Proteção Civil / Higiene e Segurança no Trabalho	1	1.72
Letras	1	1.72
Ciências Sociais	1	1.72
Eletricista instalador predial, comandos eléctricos e NR10	1	1.72

10. Recebeu alguma formação pedagógica durante o seu percurso escolar?

TYPE: SELECT_MULTIPLE. 51 out of 58 respondents answered this question. (7 were without data.)



Value	Frequency	Percentage
Sim	44	75.86
Não	7	12.07

11. Se sim, quantos anos ou quantas horas de formação completou?

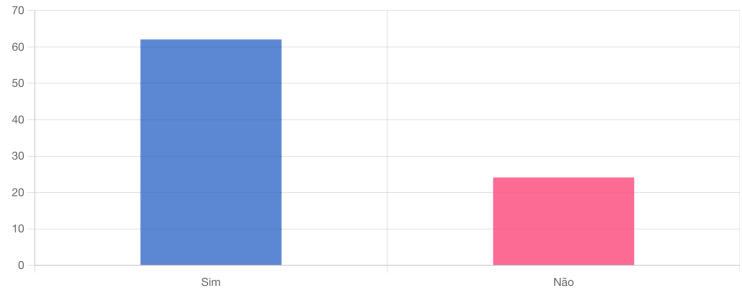
TYPE: TEXT. 45 out of 58 respondents answered this question. (13 were without data.)

Value	Frequency	Percentage
4 anos	5	8.62
não me lembro	2	3.45
120 horas	2	3.45
180 horas	2	3.45
120h	2	3.45
4	2	3.45
50 horas	2	3.45
60 h	1	1.72
Foi durante o meu curso profissional	1	1.72
Formação Pedagógica de Formadores com carga horária total de 150	1	1.72
Um ano uma hora por semana	1	1.72
360 horas	1	1.72
4meses	1	1.72
202	1	1.72
168 horas	1	1.72
112 horas	1	1.72
120	1	1.72
240	1	1.72
100	1	1.72
45 Dias	1	1.72
Carga horária 180horas	1	1.72
135h	1	1.72
3 anos	1	1.72
112 h	1	1.72
160 aproximadamente	1	1.72
180h	1	1.72

Não	1	1.72
Completei cinco anos de formação pedagógica	1	1.72
2 meses 210horas	1	1.72
2 meses	1	1.72
Dois meses	1	1.72
40horas	1	1.72
30 horas	1	1.72
80 horas	1	1.72
150h	1	1.72

12. Alguma vez estudou competências pedagógicas por iniciativa própria (por exemplo, através de livros ou pesquisa online)?

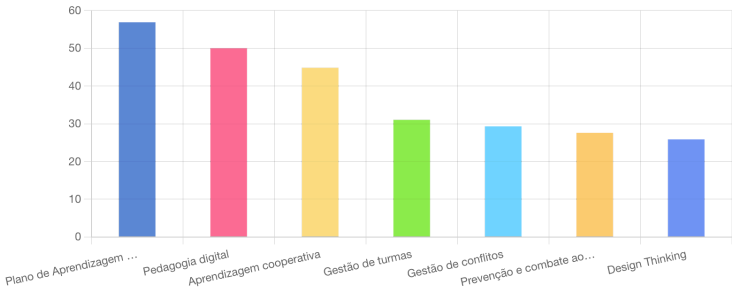
TYPE: SELECT_MULTIPLE. 50 out of 58 respondents answered this question. (8 were without data.)



Value	Frequency	Percentage
Sim	36	62.07
Não	14	24.14

13. Quais das seguintes competências pedagógicas considera que poderia melhorar enquanto professor?

TYPE: SELECT_MULTIPLE. 50 out of 58 respondents answered this question. (8 were without data.)



Value	Frequency	Percentage
Plano de Aprendizagem Individualizado para alunos com necessidades especiais	33	56.9
Pedagogia digital	29	50
Aprendizagem cooperativa	26	44.83
Gestão de turmas	18	31.03
Gestão de conflitos	17	29.31
Prevenção e combate ao bullying	16	27.59
Design Thinking	15	25.86

14. Tem interesse em receber formação para aprofundar competências pedagógicas?

TYPE: TEXT. 52 out of 58 respondents answered this question. (6 were without data.)

Value	Frequency	Percentage
Sim	32	55.17
sim	11	18.97
Sim,tenho	1	1.72
Sim, para melhor formar	1	1.72
SIM	1	1.72
Tenho Sim	1	1.72
Sim…	1	1.72
Sim, com certeza	1	1.72
Sim, tenho.	1	1.72
Tenho bastante interesse	1	1.72
Sim tenho	1	1.72

15. Alguma vez desenvolveu um plano de formação individualizado para os seus alunos? (Se sim, explique brevemente a metodologia aplicada)

TYPE: TEXT. 46 out of 58 respondents answered this question. (12 were without data.)

Value	Frequency	Percentage
Não	11	18.97
não	3	5.17
Sim	3	5.17
sim, demonstrativa e expositiva	1	1.72
Sim. Apresentação e produção de folheto	1	1.72
Sim. Trabalho de investigação	1	1.72
Ainda não	1	1.72
Sim, já desenvolvi planos de formação individualizados para alunos, adaptando-os às suas necessidades, objetivos e estilos de aprendizagem. Um Exemplo é a metodologia de Diagnóstico Inicial	1	1.72
GET Ahead	1	1.72
sim, criei grupo de trabalho ,peguei nesse aluno ,coloquei com responsável de grupo ,outro dividir tarefas com objetivos definidos e metas	1	1.72
Não exactamente, mas sempre fiz um plano extralaboral informal de acompanhamento aos meus formandos, para esclarecimento e aprofundamento em certos conteúdos com pouco domínio; Acompanhamento e preparação para conseguir estágios e entrevistas de empregos	1	1.72
Nunca	1	1.72
Sim, por duas vezes, uma com pessoas especais e a outra em laboratório na avaliação de risco	1	1.72
nao	1	1.72
Sim, catadores de residuos solidos, mudança do conteúdo formativo, adequação linguística e a metodologia do saber-fazer	1	1.72
Sim, as metodologias aplicadas forma: aulas expositivas, estudo de casos, trabalhos em grupo, entre outras.	1	1.72

Sim. A metodologia aplicada foi aplicativa e demonstrativa	1	1.72
sim .interativa	1	1.72
Orientar dois alunos ao quadro,e um pergunta e o outro responde(sucessivamente)	1	1.72
sim, demonstrativo, observativo e trabalho em grupo	1	1.72
Não.	1	1.72
Sim, distribui temas em que eles próprios investigavam e faziam as exposições.	1	1.72
Activo	1	1.72
Nao	1	1.72
Sim, Metodologia ativa	1	1.72
Sim, enquanto Professor em sala de aulas	1	1.72
Sim,,nas aulas práticas de soldadura procurei desenhar a solda antes de executar a solda	1	1.72
A metodologia é espositiva	1	1.72
Sim, método socrático ou seja perguntas e respostas	1	1.72
Não desenvolve um plano de formação individual para os meus alunos.	1	1.72
Não desenvolvi ainda	1	1.72
Sim. Focou-se na adaptação do ensino às necessidades, interesses e ritmo de aprendizagem de cada aluno, utilizando uma abordagem flexível e personalizada. Definiu-se os objetivos e as estratégias a seguir juntamente com os alunos	1	1.72

16. Está familiarizado com metodologias para reconhecimento de competências transversais não cognitivas dos alunos (exemplo: capacidade de relacionamento com os outros; a solução eficiente e criativa de problemas; saber gerir as emoções, saber definir objetivos e planear como atingi-los, etc.) (Se sim, quais?)

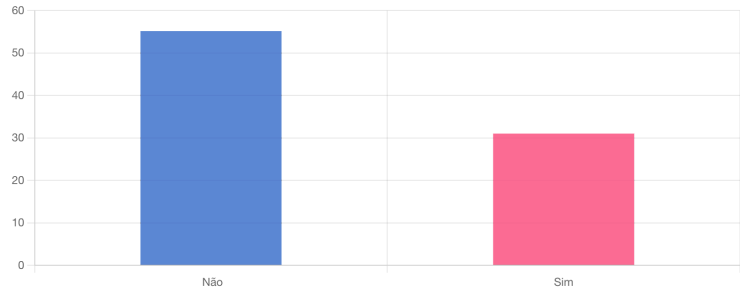
TYPE: TEXT. 45 out of 58 respondents answered this question. (13 were without data.)

Value	Frequency	Percentage
Não	6	10.34
não	3	5.17
um pouco	2	3.45
Não estou familiarizada	2	3.45
nao	2	3.45
Nao	2	3.45
Sim. Através de diálogo	1	1.72
Resolução de problemas, Motivação, Perseverança, Trabalho em equipa e Empatia	1	1.72
Sim, vários	1	1.72
sim, relacionamento com alunos, criatividade para gerir a turma, gerir emoções e ploblemas, definir objetivos e adotar meio para atingi-los	1	1.72
Gostaria de aprender mais	1	1.72
Tenho pouco conhecimento e experiência. Mas existem diversas metodologias para reconhecer as competências transversais não cognitivas dos alunos, que podem ser adaptadas e combinadas de acordo com o contexto e os objetivos da avaliação. Algumas das mais utilizadas incluem: 1. Observação direta: 2. Portfólios: 3. Autoavaliação 4. Estudos de caso e simulações: 5. Entrevistas	1	1.72
sim. Usando a avaliação continua , chuvas de ideias.	1	1.72
Solução eficiente e criativa de problemas	1	1.72
Sim. Hoje temos pesquisado e trabalhado muito com SoftSkill, estimulando comportamentos, procura de opinioes e posicionamentos particulares e pessoais, autonomia de decisão e proactividade.	1	1.72

sim, capacidade de relacionamento com os outros	1	1.72
Sim. Saber definir objetivos e gerir emoções	1	1.72
higiene e seguran no trabalho	1	1.72
Sim… é necessariamente termos o conhecimento de metodologia pra por demos alcançar os objetivos gerais e os específicos	1	1.72
Sim, formação em tecnologia de ensino e formação	1	1.72
Sim, diálogo,	1	1.72
Sim. Por meio do método da Dinâmica em grupo e o Diálogo Diário de Segurança. Estes dois ricos métodos de ensino permitem que os formandos desenvolvam as suas abilidades dentro dos saberes Ser e Estar para além do saber fazer.	1	1.72
Sim/ relacionados a práticas de eficiências	1	1.72
Sim, o auto Control na sala de aula.	1	1.72
Sim, já. Utilizo a metodologia ativa, Integração de habilidades sociais.	1	1.72
Sim. Na questão de trabalho em grupo e não só	1	1.72
Sim , com orientar	1	1.72
Sim, motivar os alunos	1	1.72
Sim.	1	1.72
Não.	1	1.72
Sim, tenho focado muito na interação com os alunos assim posso saber as suas dificuldades e poder ajudá-los.	1	1.72
Capacidade de relacionamento e saber definir objetivos.	1	1.72
Sim, Capacidade de relacionamento com os outros	1	1.72
Sim particularmente na gestão de conflitos e de liderança	1	1.72

17. Está familiarizado com o conceito e as práticas da economia circular?

TYPE: SELECT_MULTIPLE. 50 out of 58 respondents answered this question. (8 were without data.)



Value	Frequency	Percentage
Não	32	55.17
Sim	18	31.03

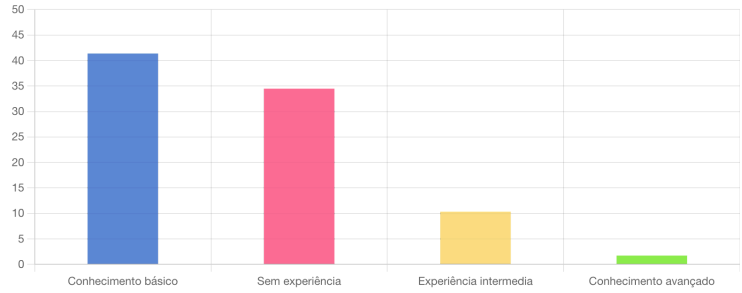
18. Se respondeu "Sim" à pergunta anterior, conhece a estrutura dos 9R's?

TYPE: TEXT. 28 out of 58 respondents answered this question. (30 were without data.)

Value	Frequency	Percentage
Não	9	15.52
Sim	8	13.79
sim	2	3.45
nao	2	3.45
um pouco	1	1.72
Sim. Repensar, Recusar, Reutilizar, Renovar, Restaurar, Reduzir, Refábricar e Reciclar	1	1.72
Sim…	1	1.72
Reduzir, Reutilizar, Reciclar, Recusar, Repensar, Reparar, Reintegrar, Respeitar, Responsabilizar	1	1.72
Sim com orientações pessoais	1	1.72
Não, infelizmente	1	1.72
Conheço apenas 3 que são: reciclar, reutilizar e reduzir	1	1.72

19. Qual o seu nível atual de conhecimento e experiência em competências técnicas de gestão circular de resíduos?

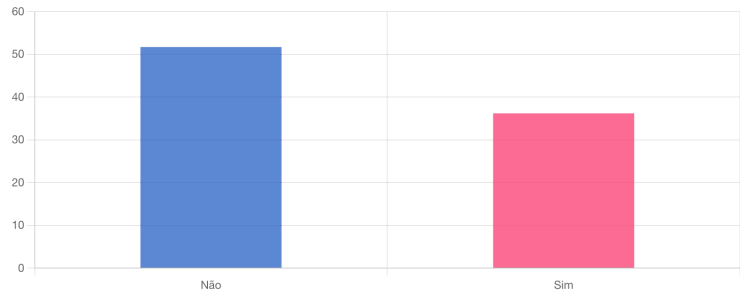
TYPE: SELECT_MULTIPLE. 51 out of 58 respondents answered this question. (7 were without data.)



Value	Frequency	Percentage
Conhecimento básico	24	41.38
Sem experiência	20	34.48
Experiência intermedia	6	10.34
Conhecimento avançado	1	1.72

20. Alguma vez teve oportunidade de estudar, por iniciativa própria, algo relacionado com a gestão circular de resíduos? (por exemplo, através de livros ou pesquisa online?)

TYPE: SELECT_MULTIPLE. 51 out of 58 respondents answered this question. (7 were without data.)



Value	Frequency	Percentage
Não	30	51.72
Sim	21	36.21

21. Tem interesse em receber formação sobre gestão circular de resíduos? (Sim/Não) Por favor, justifique a sua resposta.

TYPE: TEXT. 51 out of 58 respondents answered this question. (7 were without data.)

Value	Frequency	Percentage
Sim	7	12.07
sim	4	6.9
Para ter mais conhecimento sobre resíduos no que concerne ao tratamento.	1	1.72
Sim. De modo a garantir o meio ambiente saudável	1	1.72
Sim, de modo a saber para melhor agir e também passar o conhecimento.	1	1.72
Sim. Sei que se trata de uma temática atual pois já orientei um trabalho de conclusão de curso sobre este assunto. Nesta altura descobri o tema mas não aprofundei. Pode ser que seja este o momento de o fazer. Ainda mais porque trabalho no poder local.	1	1.72
Sim, saber não ocupa lugar	1	1.72
Sim, tenho interesse em receber formação sobre gestão circular de resíduos, pois é um tema essencial para a sustentabilidade e para a otimização do uso de recursos	1	1.72
sim. porque é de todo interressante, enquanto docente e profissional na área do ambiente aprofundar este conhecimento, particularmente as melhores praticas e como adapta-los a realidade do meu País	1	1.72
Sendo um Formador a lidar com Empreendedores ,é necessário conhecimento nessa área	1	1.72
Sim. Por ter algum conhecimento básico em questões ambientais, desde muito jovem foi activista ambiental no JEA; E também por estar na área de SHST e ter uma estreita ligação com ambiente.	1	1.72
Sim, porque nas aulas utilizamos material reciclável mas ainda geramos muitos resíduos . Gostaria de pode inverter esse quadro	1	1.72
Sim, Sim, porque a gestão adequada dos resíduos pode gerar novas	1	1.72

oportunidades de negócios, como a reciclagem e a reutilização de materiais, ajudar a desenvolver processos de inovação e tecnologia, redução de custos, parcerias e novos mercados que valorizam esses aspetos ajuda na preservação do solo e do ambiente.		
sim , gostaria de ter conhecimento sobre a gestao ambiental e ela trata dos residous propriamente.	1	1.72
Sim, para ter conhecimento sobre a área e melhor gestão de resíduos	1	1.72
SIM. Sendo que sou coordenadora do PICAR - Projecto de Inserção Social dos Catadores de Resíduos sólidos, acho pertinente conhecer os conceitos, aprender e materializar programas, mas inclusivos e principalmente que garantam mudanças reais no paradigma social dos catadores e ambientais com a gestão dos resíduos sólidos.	1	1.72
sim, para aprimorar os meus conhecimentos acerca da formação e ajudar mais o ambiente	1	1.72
Sim. Para contribuir de maneira positiva sobre o combate das alterações climáticas	1	1.72
Sim será melhor para obter mas conhecimento e competências	1	1.72
Sim… para agregar valores no sector a onde contribuo com os meus conhecimentos	1	1.72
Sim por que quero saber mais	1	1.72
Sim, primeiramente pra aplicar as técnicas,combater e prevenir a poluição ambiental, transmitir a outrem	1	1.72
sim, para saber como usa e onde aplicar a gestao curcular de resido	1	1.72
Sim, porque preciso agregar essa competência.	1	1.72
Sim. Para aumento de conhecimento e a passagem do mesmo.	1	1.72

Sim, para poder obter conhecimento e melhorar a forma de agir.	1	1.72
Sim. Por estar ligado ao meio ambiente	1	1.72
Sim, porque preciso fortificar o meu conhecimento	1	1.72
Sim, porque temos tanto lixo seria uma valia aprender a reciclar e reaproveitar o mesmo lixo.	1	1.72
Sim, porque a formação suscita interesse de minha parte, com finalidade de adquirir mais conhecimentos.	1	1.72
Sim, porque é uma questão nova em termos de formação	1	1.72
Sim, para aumentar o valor de reciclagem a nível mundial	1	1.72
Sim, para ter mais noções sobre o mesmo e aumentar o nível de aprendizagem	1	1.72
Sim,porque acho uma temática bastante interessante e que merece ser bem estudado	1	1.72
Sim, para ter conhecimento sobre gestão circular de resíduos.	1	1.72
Sim, fazendo essa formação terei mais noções sobre a reciclagem de resíduos que temos desperdiçados nas nossas comunidades.	1	1.72
Por que quero ajudar a cuidar o ambience	1	1.72
Sim. Poderei ajudar a minha comunidade e assim evitamos o risco de doenças e o reaproveitamento de resíduos	1	1.72
Sim , para aumentar os meus conhecimentos sobre o assunto e poder partilha-lo	1	1.72
Sim, pela necessidade de consolidar o conhecimento	1	1.72
Sim para melhor aprofundamento e aquisição de capacidade para poder transmitir depois. Nunca é de mais aprender	1	1.72

Sim , porque vou adquirir novas competências para e vida	1	1.72

22. Quais considera serem os principais desafios que poderá enfrentar ao integrar os conceitos de gestão circular de resíduos nos seus cursos de formação profissional?

TYPE: TEXT. 46 out of 58 respondents answered this question. (12 were without data.)

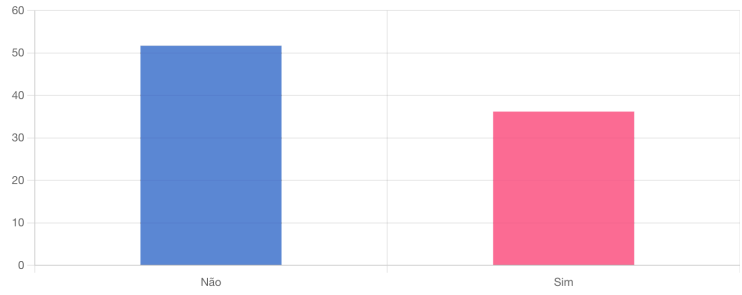
Value	Frequency	Percentage
Não tenho	1	1.72
Concetualizar os formandos sobre os benefícios de reciclagem, de modo a garantir omeio ambiente saudável	1	1.72
Creio que será sensibilizar e motivar	1	1.72
acredito que seria a aplicação prática destes conceitos.	1	1.72
Por enquanto, nenhum	1	1.72
Falta de conhecimento prévio dos alunos e infraestrutura e recursos limitados	1	1.72
Conseguir mostrar exemplo de aplicação na pratica para o nosso País	1	1.72
Saneamento do meio Ambiente	1	1.72
compreender a importância de economia circular na economia global	1	1.72
1. Fraco impacto 2. Desinteresse por conta da ignorância neste domínio por parte da maioria das pessoas 3. Dificuldade na aplicabilidade, por conta do tipo recursos de cada curso	1	1.72
Aceitação por parte dos formandos	1	1.72
serão vários mas vou citar apenas um, educação para utilização de ECO ponto.	1	1.72
aplicacao pratica e o processo de adaptacao	1	1.72
Mudar a mentalidade!	1	1.72
Aplicação no contecto real, Economia real, circo de transformação, tecnologia aplicada.	1	1.72
A falta de tecnologia de gestão de resíduos , educação insuficiente sobre práticas sustentáveis	1	1.72
Penso que dará maior organização e descarte dos materias absoletos.	1	1.72

Será de fazer entender aos formandos sobre a importância do tema em causa.	1	1.72
Muitos desafios	1	1.72
sera um desafio muito relevant por se uma inovasao	1	1.72
A maneira ou a metodologia a se usar na formação	1	1.72
Ainda estou sem ideias acerca de novos recursos de gestão circular de resíduos, então fica difícil saber como integrar. i	1	1.72
Mudança de mentalidade	1	1.72
Melhorar o ambiente interno e externo da Instituição,casa,rua,e nos aterros sanitários	1	1.72
desafio a enfrentar os conceitos sera de mudar errado para o certo,	1	1.72
Não consigo observar...	1	1.72
Conscientização e engajamento por parte dos receptores.	1	1.72
O tempo	1	1.72
Desafios ligados a tempo	1	1.72
Relacionar a nossa disciplina com a gestão circular	1	1.72
Os principais desafios serão amplo porque teria que aprender a separar o lixo de forma correcta, cada coisa ao seu lugar assim sucessivamente.	1	1.72
Mudança de mentalidade, capacitação no professorado, etc...	1	1.72
Desafios é de conhecer porque é novo no leque de ensino em formação profissionai	1	1.72
Reciclagem de matérias destruído bem como plásticos e outros	1	1.72
Como tratar o meio ambiente de uma forma eficaz e eficiente	1	1.72
Por ser um assunto novo para muitos alunos , até leva los a entender sobre o assunto	1	1.72

esta será um dos principais desafios		
O hábito de trabalhar com este tipo degestão.	1	1.72
Penso que em criar o hábito de separar os resíduos.	1	1.72
Encontro de alguns materiais	1	1.72
Os desafios para os nosso curso é a separacão dos lixo	1	1.72
Falta de estrutura própria para a reciclagem	1	1.72
Ainda não sei.	1	1.72
Os desafios são: as recepções de novas ideias na mente dos formandos	1	1.72
Impossibilidade de realizar estágio pratico, pela inexistência de boas práticas na gestão de resíduos ao nível nacional	1	1.72
dificuldade na implementação prática	1	1.72
São Tomé e Príncipe	1	1.72

23. Sabe qual é a diferença entre um modelo de negócio linear e um modelo de negócio circular?

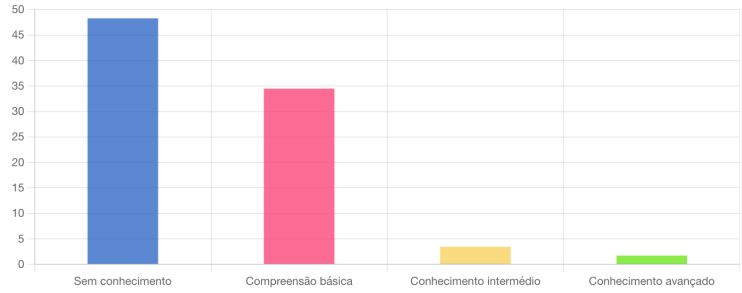
TYPE: SELECT_MULTIPLE. 51 out of 58 respondents answered this question. (7 were without data.)



Value	Frequency	Percentage
Não	30	51.72
Sim	21	36.21

24. Qual o seu nível atual de conhecimento sobre modelos de negócio circulares e a sua aplicação em diferentes áreas?

TYPE: SELECT_MULTIPLE. 51 out of 58 respondents answered this question. (7 were without data.)



Value	Frequency	Percentage
Sem conhecimento	28	48.28
Compreensão básica	20	34.48
Conhecimento intermédio	2	3.45
Conhecimento avançado	1	1.72

25. Quais os maiores desafios que poderá enfrentar na integração dos princípios da economia circular nas suas aulas?

TYPE: TEXT. 45 out of 58 respondents answered this question. (13 were without data.)

Value	Frequency	Percentage
Não tenho	1	1.72
Nenhum desafios, aplicar conteudos com exemplificaçoes práticas	1	1.72
Motivar e consciencializar nesta primeira fase	1	1.72
Acho que nenhum	1	1.72
Não sei	1	1.72
o desafio maior será o de sensibilizar para a mudança dos hábitos, costumes e valores.	1	1.72
Novos conhecimentos	1	1.72
faze-los intender a importância da economia circular para o desenvolvimento de são tomé e principe	1	1.72
1. Ilustração prática (temos poucas empresas neste sector) 2. Demostração de sua viabilidade no nosso contexto	1	1.72
Não sei por não ser formadora	1	1.72
Aceitação por parte dos formandos	1	1.72
Não tenho informação sobre os princípios de economia circurlar.	1	1.72
nao tenho conhecimento e isso pode ser um desafio interesante para mim.	1	1.72
Mudar metalidade	1	1.72
a falta de uma legislação de apoio, a interpretação de quem recebe a informação adequação dentro das empresas	1	1.72
Ainda sem conhecimento prévio	1	1.72
Poderá existir uma certa resistência por parte dos formandos	1	1.72
Levar a realidade o público alvo que são os formandos e lês capacitar segundo o nível profissional adquirido	1	1.72
na interacao basica	1	1.72

Abordagem do formador	1	1.72
Perfil de entrada	1	1.72
Na integração dos princípios da economia circular nas minhas aulas acredito que deverei enfrentar alguns desafios, no entanto só vai depender de como serei formado.	1	1.72
Adaptação curricular	1	1.72
Fazer perceber na simplicidade,as variáveis econômicas,a lei da procura e oferta	1	1.72
nao é bem um desafio mas sim uma oportunidade,	1	1.72
Conscientização e engajamento.	1	1.72
O tempo e a falta de interesses por vezes dos formandos que GOSTAM MAIS DE APRENDER CONTEÚDOS QUE OS LEVEM A UM RENDIMENTO.	1	1.72
Motivação dos formandos	1	1.72
Apresentar os conteúdos e novas fórmulascr de ensino para elucidar os alunos.	1	1.72
Não	1	1.72
Adaptação curricular, Formação de professores, falta de recursos didáticos.	1	1.72
Aprendizagem	1	1.72
Será difícil, porque está um longe dos nosso ambiente de trabalho	1	1.72
Por enquanto ainda não tenho noção	1	1.72
Por ser um assunto novo para muitos formandos ,o maior desafio será a compreensão de alguns formandos relativamente ao assunto	1	1.72
A aceitação dos formandos.	1	1.72
Ainda não sei	1	1.72
A procura de alguns materiais	1	1.72
As mudanças de alguns abitos	1	1.72

Não saberei dizer de momento os desafios que poderei enfrentar	1	1.72
Não sei ainda.	1	1.72
Os desafios são: A mudança das ideias na mente dos formandos	1	1.72
Não vejo quaisquer desafios	1	1.72
dificuldade na implementação prática	1	1.72
Conscientização, educação, Mudança de hábito de consumo	1	1.72

26. Tem interesse em receber formação sobre modelos de negócio circulares? (Sim/Não) Por favor justifique a sua resposta.

TYPE: TEXT. 50 out of 58 respondents answered this question. (8 were without data.)

Value	Frequency	Percentage
Sim	8	13.79
sim	3	5.17
Sim. Para ter maior conhecimento	1	1.72
Sim. Para melhorar o meu conhecimento e transmito-lo com veracidade	1	1.72
sim, porque terá grande impacto na minha vida e das pessoas a minha volta.	1	1.72
Sim. o conhecimento nunca é demais e sempre serve para alguma coisa. podemos até não visualizar agora os benefícios do saber mas na hora certa ele será útil	1	1.72
Sim, saber não ocupa lugar	1	1.72
sim. pra aprofundar mais sobre esse conceito.	1	1.72
Sim. Por que percebo as actuais tendência do mundo, quanto a preocupação em negócios cada vez mais sustentáveis e amigas do ambiente	1	1.72
Sim, porque nosso objetivo nas aulas é a promoção do auto emprego e os modelos de negócio circular amplia a oportunidade de novos negócios	1	1.72
Sim, porque com o mesmo poderei formar e ensinar sobre o modelo de negocio circulares	1	1.72
sim , para aprender este modelo e replica-lo em formacao	1	1.72
SIM. para ajudar a desenvolver projectos que sejam exequíveis	1	1.72
sim, para aprimorar os meus conhecimentos acerca da formação sobre modelos de negócio circulares	1	1.72
Sim. Para estar mais actualizado sobre o tema.	1	1.72
Sim tenho	1	1.72

Sim… quanto mais formações ou capacitações a gente receber ou poder fazer, melhor pra nós mesmos.	1	1.72
Sim.	1	1.72
Sim quero por que vai me ajudar muito	1	1.72
Sim, porque ser um empreendedor de sucesso é parte integrante dos meus objetivos	1	1.72
sim, para ter mas conhecimento sobre o mesmo	1	1.72
Sim, para agregar competência.	1	1.72
Sim. Por ser o modelo mais viável	1	1.72
Sim, para aprender mais	1	1.72
Sim. Porque pretendo melhorar as minhas capacidade	1	1.72
Sim, para ajudar os alunos a ter espírito de fortalecer as suas competências	1	1.72
Sim, gostaria porque o saber não ocupa lugar.	1	1.72
Sim, para obter mais conhecimentos e poder me capacitar.	1	1.72
Sim porque só costuma ouvir dizer	1	1.72
Sim , porque ajuda no desenvolvimento pessoal e social	1	1.72
Sim, para aumentar a interação e desenvolver o método educativo	1	1.72
Sim, porque penso ser um tema bastante importante,um conhecimento essencial para mim	1	1.72
Sim, para entender como funciona e como é gerido este tipo de modelo.	1	1.72
Sim, gostaria de aumentar o meu leque de conhecimentos voltado ao mundo dos negócios.	1	1.72
Sim , para ganhar conhecimento e exercer o que aprendi.	1	1.72

Sim para aprender mas	1	1.72
Sim. Conhecimento é poder e uma vez tendo essa formação, poderei aplicar e ajudar a minha comunidade	1	1.72
Sim. Saber mais sobre a área	1	1.72
Sim, pela necessidade de consolidar o conhecimento na matéria	1	1.72
sim. O conhecimento nunca é demais	1	1.72
Sim. Qualquer formação é útil para o nosso bem-estar	1	1.72

27. Recebeu alguma formação em competências de microempreendedorismo para micro e pequenas empresas?

TYPE: TEXT. 51 out of 58 respondents answered this question. (7 were without data.)

Value	Frequency	Percentage
Não	14	24.14
Sim	13	22.41
sim	6	10.34
Não.	4	6.9
não	2	3.45
nao	2	3.45
Nao	2	3.45
Não. Mais recebe formação na área de gestão	1	1.72
Nunca	1	1.72
Não recebi	1	1.72
Sim…	1	1.72
Nenhum	1	1.72
Sim,	1	1.72
Nâo	1	1.72
Não recebi ainda	1	1.72

28. Tem experiência profissional em empreendedorismo? (Se sim, descreva p.f. a sua experiência)

TYPE: TEXT. 51 out of 58 respondents answered this question. (7 were without data.)

Value	Frequency	Percentage
Não	19	32.76
não	3	5.17
Não.	3	5.17
nao	2	3.45
Sim	2	3.45
Sim. Sou pequena empresária. Tenho criação de suínos	1	1.72
sim, e inclusive eu tenho uma empresa de nome EMI.Fanhã porque eu produzia farinha de fruta pão e de banana.	1	1.72
Sim, leciono e tenho negócios próprios	1	1.72
sim, tenho uma pequena firma.	1	1.72
Tenho uma pequena empresa na área de Mobiliários de Bambu e palha	1	1.72
sim, sou empreendedor no sector de imobiliário	1	1.72
Sim. Por que percebo as actuais tendência do mundo, quanto a preocupação em negócios cada vez mais sustentáveis e amigas do ambiente	1	1.72
Sim. Confecciono e vendo artigos para noivas. Tenho colaboradores que me ajudam com as compras confecção e entrega.	1	1.72
SIM	1	1.72
Sim tenho porque já jeri um pequeno negócio	1	1.72
sim	1	1.72
Sim… sou formador de gestão básica de pequenos negócios	1	1.72
Já lecionei empreendedorismo e frequentei curso formação de formadores de empreendedorismo e sou empreendedor	1	1.72

Estudei gestão de empresas, fiz curso no clese e já foi formador	1	1.72
Não sim.	1	1.72
Sim , vendedor de roupas e acessórios , CEO da empresa Siclima prestação de serviços	1	1.72
Sou um jovem empreendedor, tenho mini empresa de aluguer de material de som e cyber	1	1.72
Sim, saber fazer um plano de negócios,estudo de viabilidade, metodologia de como gerar dinheiro	1	1.72
Sim, empreendedorismo está ligado a criação de negócios e oportunidades de emprego.	1	1.72
Ideias de negócio e criação de negócios.	1	1.72
Não tenho nenhuma experiência	1	1.72
Sim. Já dei algumas formações sobre o empreendedorismo	1	1.72

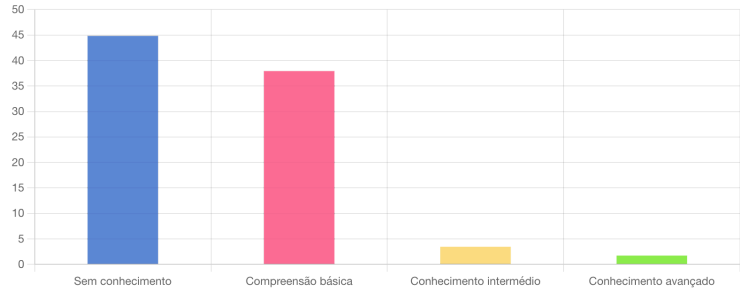
29. Teria interesse em receber formação em competências de microempreendedorismo para micro e pequenas empresas?

TYPE: TEXT. 50 out of 58 respondents answered this question. (8 were without data.)

Value	Frequency	Percentage
Sim	26	44.83
sim	11	18.97
Sim.	3	5.17
Concerteza	1	1.72
Certo	1	1.72
Muito não	1	1.72
SIM	1	1.72
Sim tenho interesse porque e mas valia receber mas conhecimento para o meu currículo e enriquecer a minha mente	1	1.72
Sim…	1	1.72
Sim, para actualizar os conhecimentos	1	1.72
Sim, teria interesse.	1	1.72
Sim, tenho interesse	1	1.72
Sim tenho	1	1.72

30. Como classificaria o seu conhecimento atual sobre inovação frugal e digital na gestão circular de resíduos e na economia circular?

TYPE: SELECT_MULTIPLE. 51 out of 58 respondents answered this question. (7 were without data.)



Value	Frequency	Percentage
Sem conhecimento	26	44.83
Compreensão básica	22	37.93
Conhecimento intermédio	2	3.45
Conhecimento avançado	1	1.72

31. Teria interesse em receber formação sobre inovação frugal e digital para a gestão circular de resíduos e para a economia circular?

TYPE: TEXT. 51 out of 58 respondents answered this question. (7 were without data.)

Value	Frequency	Percentage
Sim	31	53.45
sim	12	20.69
Sim.	4	6.9
SIM	1	1.72
Sim e pronto para aprender e para depois ensinar nos meus formandos o que conhecimento adquirido	1	1.72
Sim, teria.	1	1.72
Sim, tenho interesse	1	1.72

32. Na sua opinião, quais são os principais desafios que o seu Centro de Formação Profissional enfrenta na relação com o setor privado/empresas?

TYPE: TEXT. 44 out of 58 respondents answered this question. (14 were without data.)

Value	Frequency	Percentage
Colocação dos formandos para realização de estágio.	1	1.72
A falta de certificação e acreditação das entidades formadoras	1	1.72
O principal desafio é a empregabilidade dos formandos	1	1.72
Ter professores a tempo inteiro	1	1.72
Maior aproximação. Melhorar as sinergias entre ambos. Mais apropriação dos alunos que terminar o curso no centro.	1	1.72
Posso ter uma opinião mas ,gostaria de deixar para os responsáveis	1	1.72
em são Tomé príncipe maior empregador é o Estado, por isso há que ter uma fementação no mercado privado	1	1.72
1. Equipamento e materiais (inclusive consumíveis) na qualidade e quantidade necessária 2. Instalações degradando-se e sem a devida manutenção 3. Actualização das competências técnicas dos formadores com formação e refrescamentos 4. Desenquadramento tecnológico entre os centros de formação e as empresas.	1	1.72
Não tenho está informação	1	1.72
Oportunidade para inserção dos estágios ou oportunidades de empregabilidade	1	1.72
Falta de comunicação entre os mesmo	1	1.72
como formador nao tenho conhecimento, cabe ao gestor do centro.	1	1.72
Como formador não tenho conhecimento sobre o assunto	1	1.72
Adequação e atualização dos conteúdos formativos.	1	1.72
Falta de recursos dedicados à implementação de soluções	1	1.72

De momento estamos no processo de divulgação dos serviços disponiveis a nivel do centro	1	1.72
Concorrência desigual	1	1.72
Os principais desafios que o centros tenham enfrentando são os desafios de de concorrência entre centros e mas e que no final da acção formativa os formandos podem saber ser saber saber e saber fazer	1	1.72
muinta procura	1	1.72
A interação com as entidades empresárias	1	1.72
Em termos de estágios profissionais	1	1.72
Os principais desafios que o centro de formação profissional enfrenta na relação com o setor privado /empresas, uma delas é a empregabilidade dos formandos após a formação, e a não colaboração ou compromisso com o Centro de formação.	1	1.72
Falta de recursos didáticos falta de parceria	1	1.72
Enquadramento, estágios, depois da formação	1	1.72
o principal desafio que o meu centro de formacao profissional enfrenta com o sector privado é de abertura de incerir os formandos n	1	1.72
Parcerias , inscerssão dos formandos a estágios profissionais e no mercado de trabalho pois formação.	1	1.72
Falta de oportunidades	1	1.72
Falta de estágios profissionais	1	1.72
Criar parcerias com outras empresas com aberturas para os formandos.	1	1.72
Enfreta vários desafios, gostaríamos que as empresa se disponibilizasse em receber os nossos formandos para aperfeiçoar nas práticas e inserção em varias áreas.	1	1.72
Diferenças nas expectativas, falta de comunicação eficaz, Divergências nos	1	1.72

objetivos, limitações financeiras e logísticas, falta de apoio institucional.		
Muitos desafios INEFOP	1	1.72
Nenhuma	1	1.72
Não tenho noção	1	1.72
Falta de oportunidade para estágios dos formandos.	1	1.72
1 - A criminalidade local alguns alunos são interpelados por militantes. 2 - O difícil acesso	1	1.72
A demora de colocação de estágio ou empregabilidade.	1	1.72
Sem opinião	1	1.72
Falta de espaço para os jovens recém formados	1	1.72
Aberturas para estágio	1	1.72
Difícil acesso em algumas áreas	1	1.72
Limitada Capacidade Técnica e Infraestrutura; Informalidade no mercado de trabalho	1	1.72
conseguir que procurem mais formação para os seus colaboradores no centro	1	1.72
Dificuldade em envolver as empresas na construção dos currículos e na oferta de estágios e a necessidade de adaptar a formação às rápidas mudanças tecnológicas e às novas exigências do mercado	1	1.72

33. Indique pelo menos 3 parceiros-chave ao nível local ou nacional para a colocação profissional dos alunos.

TYPE: TEXT. 47 out of 58 respondents answered this question. (11 were without data.)

Value	Frequency	Percentage
Desconheço	2	3.45
Empresas de contabilidade; Direcção de ambiente; Waca; Direcção de empreendedorismos	1	1.72
Eletrofrio; Midiatel e kilowatss	1	1.72
Turismo e hotelaria, construção civil e Educação	1	1.72
Empresas, Escolas e Câmaras distritais	1	1.72
BATIMAT, lda, empresa ACA, Enaport, Alfandegas	1	1.72
Centro Profissional de Budo- Budo, Centro Politécnico Brasil -São Tome e FOVAT GRUP	1	1.72
são ferias, Diogo vaz e grupo HBD	1	1.72
1. Parcerias com as empresas com um teor bastante claro e pragmático. 2. Ter um programa formativo com base as necessidades das empresas. 3. Acompanhar a tendência técnica e tecnológica das empresas 4. Actualização contínua dos formadores e não só.	1	1.72
Ministérios	1	1.72
O Ministério-MAPTESS;supermercado KERO e Candando	1	1.72
seria o ISQ a resfriango , Total Enegil	1	1.72
nao tenho conhecimento cabe o gestor do centro esta informacao	1	1.72
Como formador não tenho conhecimento sobre o assunto	1	1.72
formações atualizadas e atuantes, passagem dentro das profissões emergentes, estagio trofissional	1	1.72

Ministério de educação cultura e ciências, Ministério de trabalho, solidariedade e Segurança- Direção de Trabalho e formação profissional.	1	1.72
Os nossos parceiros activos no âmbito formativos são a comunidade em geral e as empresas Públicas/Providas	1	1.72
A global, montem Engil e privados	1	1.72
Os três parceiros chave ao nível local temos as empresas privadas ,ao nível nacional temos o inefop ou mapss	1	1.72
e o publicome	1	1.72
A OMATAPALO, Novo Hotel, Hotel Serra da chela	1	1.72
Empresa, bancos e oficinas	1	1.72
Os parceiros chave ao nível local temos : a ENDE, Sátec ou a TESTAF, a PRODEL e as instituições governamentais.	1	1.72
Instituições governamentais e não governamentais	1	1.72
Prodel EP, Textaf,Zona Econômica	1	1.72
Os parceiros sao ENDE, Elecnor e Matapalo	1	1.72
As Empresas privadas , as instituições públicas e as instituições de regulamentação e cadastro	1	1.72
Inofop, empresas, BANCOS	1	1.72
Ende, sonamet e a biocom	1	1.72
Auto emprego dos alunos e emprego empresas abertura	1	1.72
Primeiro: INEFOP, segundo: Office peças e terceiro: os Super mercado Kero, Max	1	1.72
Empresas locais e nacionais, Organizações não governamentais, instituições governamentais.	1	1.72
Não temos	1	1.72

Pontualidade, Responsabilidade, criatividade	1	1.72
Não tenho noção	1	1.72
As empresas ,o estado ,e as igrejas	1	1.72
Ministério do trabalho, administração municipal e empresas no município.	1	1.72
A administração, Uma unidade policial e uma creche	1	1.72
Inofop, Dom Bosco, Cinfotec	1	1.72
Inefop. Youg africa, exmobil	1	1.72
CFP Dom Bosco, MAPTSS e CINFOTC	1	1.72
Não sei	1	1.72
empresas públicas e privadas, organizações internacionais e agências de cooperação.	1	1.72
Direção de Trabalho, Emprego e Formação Profissional; Rede Nacional de Incubadoras e Aceleradoras de Negócios; Associação Renascer	1	1.72
Saotocao, Grupo HB e Estado	1	1.72
Diversos Ministérios do país, dependendo do curso fornecido	1	1.72

34. Que meios utiliza para identificar as competências exigidas pelas empresas/setor privado?

TYPE: TEXT. 47 out of 58 respondents answered this question. (11 were without data.)

Value	Frequency	Percentage
Ramo de actividade e especialização	1	1.72
Através de estudos de mercado, junto as empresas	1	1.72
Certificado ou diploma de formação que comprova a aptidão	1	1.72
questionário de solicitação das informações	1	1.72
Desconheço	1	1.72
Web	1	1.72
POque sou membro das Organizações Profissionais e Empresariais em STP	1	1.72
ORGANIZAÇAO,RESPONSABILIDADE SOCIAL,EMPREGABILIDADE E CORRAGEM	1	1.72
Procuro sempre saber dos nossos ex-formando que são admitidos nessas empresas, quais as questões colocadas em entrevistas; também quais debilidade que foi identificado nele e o que a empresa espera dele (nosso ex-formando)	1	1.72
Não tenho informação	1	1.72
A internet como fonte de pesquisa	1	1.72
Testes e avaliações	1	1.72
nao tenho conhecimento sobre os parceiros	1	1.72
Como formador não tenho conhecimento sobre o assunto	1	1.72
Perfis solicitados pelos recrutadores, novas tendências, vagas em aberto, novos cursos nas universidades, novas tendências dos cursos profissionais na internet e no mercado internacional	1	1.72
Através das Avaliação de conhecimentos técnicos e profissionais, as habilidades e as atitudes do indivíduos	1	1.72
Meio interventivo	1	1.72

Não	1	1.72
Alem do currículo também podemos usar teste prático que vai corresponder na competência técnica	1	1.72
metodo de estagio	1	1.72
O saber fazer	1	1.72
Diagnóstico	1	1.72
Os meios que utilizo para identificar as competências exigidas pelas empresas/setor privado, é estudando as dificuldades ou seja as exigências do mercado de trabalho.	1	1.72
Avaliação curricular, perfil da empresa.	1	1.72
Assiduidade e inovação, Respeito, Lealdade e dever de obediência	1	1.72
avaliacao das copetencias dos alunos, adapitacao corricular	1	1.72
Recebendo uma a respostas das necessidades identificadas pelas próprias empresas	1	1.72
O meio a ser utilizado é o estudo de mercado, para diagnóstico das exigências das mesmas e suas necessidades.	1	1.72
Avaliações das competências técnicas dos formando	1	1.72
entrevista e observação sistematica	1	1.72
Apresentar a prática do aluno com um estágio remoneratorio	1	1.72
Através de visitas de campos	1	1.72
Pesquisas de mercado, parceria com empresas, etc...	1	1.72
A adaptação dos estágios.	1	1.72
Folha de contrato	1	1.72
Os meios utilizados é a formação profissional junto os certificados	1	1.72

Profissionalismo e competência como base de tudo	1	1.72
Entrevistas em técnicos funcionando na área.	1	1.72
A responsabilidade, o respeito para com os seus colaboradores.	1	1.72
Recolha de informação de membros da empresa.	1	1.72
Metodo expositvo participativo e interrogativo	1	1.72
Pesquisas online e presencial sobre o funcionamento da mesma empresa	1	1.72
Modelos exigentes nos dias de hoje	1	1.72
Fazendo visitas	1	1.72
Estudos de Mercado e Diagnostico Setorial; Parcerias com Câmaras de Comércio e Associações Empresariais; Consultas Direta com Empresas Locais	1	1.72
Levantamento das necessidades de formação junto destas	1	1.72
Solicitação das empresas e	1	1.72

35. Como faz corresponder as competências dos alunos às exigências do mercado de trabalho?

TYPE: TEXT. 47 out of 58 respondents answered this question. (11 were without data.)

Value	Frequency	Percentage
Melhor preparação e aplicação profissional	1	1.72
Formadores qualificados de acordo a cada área de formação	1	1.72
Com a capacitação dos mesmos em diversas áreas	1	1.72
Através de uma adaptação do currículo à realidade do momento.	1	1.72
Cabe aos serviços do Centro de Formação Profissional fazer isso	1	1.72
ao meu ver, estas competências têm que ser de acordo ao nosso mercado de trabalho, e os cursos atualmente ministrados vão de encontro a lacunas de profissionais nestas áreas, uma vez que muitos emigraram, logo há uma carência muito grande no mercado de trabalho.	1	1.72
Através da Historia do Empreendedorismo e seu conceito	1	1.72
INSENTIVAR -LOS A COMPETENCIAS	1	1.72
Comunicação com alguns contactos que temos nas empresas	1	1.72
Não tenho informação	1	1.72
Pesquiso as competências que o mercado está a exigir	1	1.72
com qualificações e treinamentos das suas competencias tecnicas	1	1.72
avaliacao do formando	1	1.72
Como formador não tenho conhecimento sobre o assunto	1	1.72
melhoria do processo formativo, melhoria e actualização dos conteudos programaticos, formação no sistema dual, Criação de novos cursos	1	1.72
Aplicando nas aulas as competências necessárias para desenvolver uma educação de qualidade como por exemplo:	1	1.72

a didática, domínio da área de conhecimento, experiencia do mercado de trabalho a comunicação entre outras.		
Por intermedio de estágios	1	1.72
Dotando os formandos de um saber teórico e prático eficiente	1	1.72
As competências dos alunos no que concerne o mercado de trabalho vai exigir competência técnica	1	1.72
pesquisa do mercado para melhor relacionar	1	1.72
As suas especificações	1	1.72
Identificação das necessidades mão de obra	1	1.72
Ensinando de acordo a realidade de cada localidade em que vive o aluno e relacionar com as exigências do mercado de trabalho.	1	1.72
Estágio curricular, avaliação.	1	1.72
Pontualidade e dedicação	1	1.72
faco corresponder com as exigencia do mercado de trabalho, de acordo conhecimento passado, com a mecessidade do merco	1	1.72
Dota-lós de conhecimentos actualizados e inovadores.	1	1.72
Adaptando às necessidades atuais	1	1.72
Por meio da elaboração de um plano de formação correspondente as exigências e as nesse idades das mesmas	1	1.72
Dando-lhe conhecimento técnicos atuais	1	1.72
Pesquisas de mercado/necessidades	1	1.72
Apartir do trabalho bem feito e apresentar feita pelas formações.	1	1.72
Além da formação teórica temos também aulas praticas para melhor entender os conteúdos.	1	1.72

Avaliação das competências dos alunos, parceria com o setor privado, estágios e programas de treinee.	1	1.72
Adaptação do Centro AO contexto	1	1.72
Instituições breves sobre o mercado de emprego	1	1.72
Trabalhamos no sentido de responsabilidade para motivar os mesmos	1	1.72
Transmitindo lhes muita responsabilidade, comprometimento,de modo a serem objectivos	1	1.72
Atualizando o curriculum do curso.	1	1.72
Dando uma formação com qualidade, e uma boa preparação.	1	1.72
Aperfeiçoando a formação profissional.	1	1.72
Actualizando os trabalhos.	1	1.72
Buscando estágios para os formandos	1	1.72
Fornecendo a eles as bases exigidas nas empresas	1	1.72
Enviando cartas De solicitação de estágio	1	1.72
Uso de Estudo de Empregabilidade; Desenvolvimento de Currículos Baseados em Competências; Avaliação Contínua com Feedback das Empresas; Estágios Profissionais e Formação em contexto real do Trabalho	1	1.72
breve análise de mercado de emprego no páis	1	1.72

36. Conhece a taxa de empregabilidade dos alunos que se formaram no seu Centro de Formação Profissional?

TYPE: TEXT. 49 out of 58 respondents answered this question. (9 were without data.)

Value	Frequency	Percentage
Não	15	25.86
Sim	3	5.17
não	3	5.17
65% dentro de 10 anos	1	1.72
Não faço menor ideia	1	1.72
Como formador não tenho esta informação	1	1.72
sim	1	1.72
nao tenho conhecimento desses dados	1	1.72
Como formador não tenho conhecimento sobre o assunto	1	1.72
SIM 98.5	1	1.72
Sim.	1	1.72
Sim a taxa de empregabilidade dos formandos formados pelo centro a taxa e de 10%	1	1.72
50	1	1.72
65%	1	1.72
Não, mas julgo 99 %	1	1.72
Sim, a taxa de empregabilidade é péssima.	1	1.72
Não, mas uma boa parte trabalha por conta própria	1	1.72
nao	1	1.72
Sim, mais de 60%	1	1.72
Não. Por ser uma informação não está ao meu alcanse	1	1.72
+ de 50% dos formandos até agora	1	1.72
50%	1	1.72
Infelizmente não tenho uma taxa como tal porque quando eles conseguem emprego não voltam para nós informar, por este	1	1.72

motivo é não temos os dados de empregabilidade.		
Desconheço, porém, há um número considerável	1	1.72
Infelizmente não tenho noção	1	1.72
Não sei um número exato mas muitos deles estão a conseguir trabalho.	1	1.72
60%	1	1.72
Não conheço	1	1.72
Temos uma taxa de 40%	1	1.72
Sim, entre os anos 2023 à 2024, a taxa de empregabilidade foi de 71% à 50%	1	1.72
Infelizmente não	1	1.72

37. Há algo que gostaria de acrescentar?

TYPE: TEXT. 44 out of 58 respondents answered this question. (14 were without data.)

Value	Frequency	Percentage
Não	20	34.48
não	2	3.45
Nao	2	3.45
Sim. Acredito que a formação de enconomia circular, é uma mais valia para o país principalmente neste momento que queremos combater o uso de plástico no país.	1	1.72
Por agora não mais quem sabe posteriormente.	1	1.72
Espero que esta formação realmente aconteça na medida em que prevejo que será bastante útil.	1	1.72
Sugiro acrestar na nossa grelha de formação o curso de técnicos de gestão ambiental	1	1.72
nao de momentos	1	1.72
NÃO.	1	1.72
nao	1	1.72
Somente agradecer.	1	1.72
Não, de momento é tudo.	1	1.72
Simplesmente agradecer pela oportunidade e desejo sucessos	1	1.72
que os nossos formandos tevessem a oportunidade de serem incerido em algumas empresas	1	1.72
Nada a opor.	1	1.72
Sim. Elogio vossa iniciativa e desejo bom progresso no desenvolvimento da mesma.	1	1.72
Aprender mais sobre IA	1	1.72
Como acréscimo gostaria que certos projectos continuacem a financiar jovens nas areas de formação profissionais para	1	1.72

conseguir o seu auto sustento e sair na vida da droga, prostituição e delinquência.		
Não, até agora é tudo.	1	1.72
Sede e vontade de aprender	1	1.72
Não, obrigado	1	1.72
Sem mais outro assunto de momento.	1	1.72
Que haja mais credibilidade no mercado de trabalho para os jovens	1	1.72

APPENDIX B- INTERVIEWS WITH HEADMASTERS

Co-funded by the European Union

CircuWasteVETAfrica

CWA pre-training assessment interview with Headmasters

Interview structure:

- Context: Welcome, project, training
- Academic background and professional experience of trainers
- Areas of skills you would like the trainers to improve/learn?
- Pedagogical skills (i.e. Cooperative learning, Class group management, Design Thinking, Conflict management, Individualised Learning Path)
- Digital pedagogy?
- Do you use any kind of digital tools in the classroom?
- Circular waste skills?
- Entrepreneurship experience/skills?
- Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)
- Facilities of your VET schools for training delivery
- Best period for training (July-October)
- Do you think your trainers are interested in the topics that are proposed in this training?
- In your opinion, which of the modules will be of most interest for them?

INTERVIEW WITH

Rev. Samuel Asamoa Ayeh-Hanson, Principal of Ramseyer Technical Institute of Kumasi (Ghana) and Anthony Sarkodie
(24-March-2025)

»»» Academic background and professional experience of trainers

All the Centre's trainers have a diploma as a minimum qualification, some of them are graduates, with some holding master's degrees. 70% followed a traditional VET qualification education.

»»» Areas of skills you would like the trainers to improve/learn?

Digital tools in classroom, Competence Based Approach. The trainers participating in this ToT are different from the ones that participated in GVA project, in order to give equal opportunities to the largest number of trainers, so they are new to the contents proposed in this project (some of them have already gone through CBA training).

»»» Pedagogical skills (i.e. Cooperative learning, Class group management, Design Thinking, Conflict management, Individualised Learning Path)

All areas suggested are interesting but the most interesting topics are digital upskilling, individualised learning path, Competence Based Approach, class group management.

»»» Do you use any kind of digital tools in the classroom?

Laptop and Ipad have been distributed to students thanks to governmental programmes in some schools, but not in PRSD training Centre. Learners can use the facilitators' laptops to conduct some team work and assignments.

»»» Circular waste skills?

This is a very interesting topic for PRSD and it's a priority for Ghana. Trainers that will participate in this cohort are new to the topic (being different from GVA trainers) also because the topic is new and has been recently introduced in the public scene but industries require this skill. There are also some governative training programmes in place in Ghana (to be shared with MQ).

»»» Entrepreneurship experience/skills?

Most of the trainers have knowledge about entrepreneurship, but it is interesting for them to go deeper in this subject.

»»» Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)

Mapping of industries and relevant companies, building relations with employers is still a bit challenging and can be improved.
In GVA PRSD strengthened the collaboration with a local company producing charcoal from the remains of shards.
No statistics are available regarding how many students get employment after the training, but most of them continue with studying at a higher level or go for self employment.

»»» Facilities of your VET schools for training delivery

The Centre will make sure that all trainers have data available to follow the training. The Centre will provide the venue in case there is the need to meet all together to better access the lesson, but in general all trainers have their own device (phone or laptop) and will follow the lesson autonomously from the location they prefer (flexibility is recommended in this case).

»»» Best period for training (July-October)
September would be ideal. In July and August the availability could be 7am-3:15pm

»»» Do you think your trainers are interested in the topics that are proposed in this training?

They are very interested indeed. They all value continuing education.

»»» In your opinion, which of the modules will be of most interest for them?

During the meetings where I presented the project to them, they expressed interest in all the modules.

CircuWasteVETAfrica

CWA pre-training assessment interview with Headmasters

Interview structure:

- Context: Welcome, project, training
- Academic background and professional experience of trainers
- Areas of skills you would like the trainers to improve/learn?
- Pedagogical skills (i.e. Cooperative learning, Class group management, Design Thinking, Conflict management, Individualised Learning Path)
- Digital pedagogy?
- Do you use any kind of digital tools in the classroom?
- Circular waste skills?
- Entrepreneurship experience/skills?
- Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)
- Facilities of your VET schools for training delivery
- Best period for training (July-October)
- Do you think your trainers are interested in the topics that are proposed in this training?
- In your opinion, which of the modules will be of most interest for them?

CWVA Entrevista de diagnóstico, prévia à formação de formadores, a realizar aos Diretores das Escolas

Estrutura da Entrevista:

- Contexto: Boas-vindas, projeto, formação
- Formação académica e experiência profissional dos formadores
- Quais as áreas em que gostaria que os seus formadores aprendessem ou melhorassem as suas competências?
- Competências pedagógicas (ex.: Aprendizagem cooperativa, Gestão de grupo em sala de aula, Design Thinking, Gestão de conflitos, Percurso de Aprendizagem Individualizado)
- Pedagogia digital?
- Utiliza algum tipo de recursos digitais em sala de aula?
- Competências sobre gestão circular de resíduos?
- Experiência/competências em empreendedorismo?
- Parcerias Público-Privada para o Ensino e Formação Profissional (EFP) - Tem uma rede de contactos de parceiros no mercado de trabalho? Qual é a taxa de empregabilidade da sua escola de EFP?
- Infraestruturas da sua escola de EFP para a realização de formações
- Melhor período para a formação (julho-outubro)
- Considera que os seus formadores têm interesse nos temas propostos nesta formação?
- Na sua opinião, quais dos módulos serão de maior interesse para eles?

CircuWasteVETAfrica

Interview Jorge Bruce Antonio Neto – **Director VCT INEFOP - Centro Femenino do Rangel**

Academic background and professional experience of trainers

50% from high school or technical and vocational institutes and 50% university or higher education institutes. They can have no experience or work experience in the relevant field of training.

Areas of skills you would like the trainers to improve/learn?

In my case, I consider continuous training in various specializations essential. Every day, new methods and new fields emerge in every industry. Therefore, I believe that in their area of expertise it would be beneficial to implement specialized continuous training. For example, welding techniques from the year 2000 are not the same as those in 2025. I think that keeping up to date would allow them to add more value in their specific fields, aligning with the current context and the demands of the job market.

Pedagogical skills

Conflict management, Class group management, Individualised Learning Path, Design Thinking

Digital pedagogy

Yes we have it in terms of pedagogical training, there's the useful resources module, but we want to learn more

Do you use any kind of digital tools in the classroom?

Computer and projectors

Circular waste skills?

We work extensively in solid waste management, turning recycling into opportunities for entrepreneurship and sales and we have a big ecopoint in the centre. For example, we use waste oil and caustic soda to produce soap and in the sewing and tailoring course, we repurpose fabric scraps to create rugs. We have also worked with recycling milk cartons, transforming them into bags and folders. This circular recycling model is what we call **“from waste to worth” (“Do lixo para o luxo”)**.
Here, this practice is already well established and has become a concrete skill. The pilot program was developed together with my colleague to be implemented in other centers. Here, it is already a reality.

Entrepreneurship experience/skills?

After processing these waste materials, they will be able to sell them and generate income. The goal of the training center is not to seek employment but to create one's own job. Here, we take a different approach to entrepreneurship, encouraging participants to develop their own businesses.

Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)

There are partners, especially at the level of Inefop, which offers professional internships. We as a center collaborate with different partners, including through the network of contacts from Inefoque and the ministry. In addition to training students so that they can start their own businesses, we create opportunities with industry partners. For example, in hospitality and catering courses we collaborate with hotels and restaurants through curricular programs that include partnerships with these entities. If during the internship the company is satisfied, they may decide to hire the candidate. However, the main goal remains to make them autonomous in their career path. We cannot guarantee an internship for everyone because it is not easy for companies to take in interns.
The employability rate is 30-40% (estimated)

Facilities of your VET schools for training delivery
We have a computer room that we can use to do the training.

Best period for training (July-October)
September

Do you think your trainers are interested in the topics that are proposed in this training?
Yes, they are always open to learning and as directors we are as well

In your opinion, which of the modules will be of most interest for them?
Module A: Pedagogical upskilling & Training transfer to learners' methodology
Module E: Frugal and Digital Innovation for Circular Waste and Circular Economy
Module F: Public-Private Partnerships for VET managers

Interview Joaquima Oliveira dos Santos da Costa - **Directora VCT INEFOP – CINFOTEC Centro de Construção Civil**

Academic background and professional experience of trainers
Some have an high school or technical and vocational institutes background, some are completing their bachelor's degree and some have an university or higher education background. Some trainers already have experience in welding or electricity, so when they join the training center, they bring that expertise with them. This is how it works: many already have hands-on experience gained elsewhere, while others have no practical experience but possess technical training in the field, without having actually performed the tasks.

Areas of skills you would like the trainers to improve/learn?
In principle, it is about technical training. Although the annual training schedule already includes continuous pedagogical training, it is essential that this is followed by ongoing technical skills development.

Pedagogical skills
Conflict management, Class group management, Individualised Learning Path, Design Thinking

Digital pedagogy
Yes, we have it in terms of pedagogical training.

Do you use any kind of digital tools in the classroom?
Computer and projectors

Circular waste skills?
We have a mini-ecopoint in our centre, but it still has to go through the phase of raising the awareness of the population, of the center's surroundings, of the employees. Because until then we know that the greatest resistance lies in us not putting the waste in the right place.

Entrepreneurship experience/skills?

An entrepreneurship module is included in the curriculum. Each trainer covers this topic according to their area of expertise and the specific context. In the end, all students complete the entrepreneurship module to develop skills in small business management

Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)

We collaborate with several partners. Some agreements have been formalized through protocols, while others are based on verbal understandings, yet activities continue to take place. This is the case with FabriMetal, Refriango, and Espetec, companies we work with in relation to the courses we offer. Being located in Viana, a highly industrialized area, we have the advantage of having close partners who can support the training of our students, filling any gaps that the center itself may not be able to cover. These partners provide opportunities through professional and curricular internships. Professional internships are paid, while curricular internships require negotiation, as companies often do not provide allowances or salaries for trainees. Therefore, the focus is primarily on professional internships.

I don't know the employability rate because I just started working (2 weeks) as director here.

Facilities of your VET schools for training delivery

We have a computer room that we can use to do the training.

Best period for training (July-October)

September

Do you think your trainers are interested in the topics that are proposed in this training?

Yes, they are interested.

In your opinion, which of the modules will be of most interest for them?

Module A: Pedagogical upskilling & Training transfer to learners' methodology
Module E: Frugal and Digital Innovation for Circular Waste and Circular Economy
Module F: Public-Private Partnerships for VET managers

Interview Padre Victorino João Victorino – **Director VCT Dom Bosco - Benguela (Benguela)**

Academic background and professional experience of trainers

Most of our trainers have an advanced academic background, many of them have already completed higher education.

Areas of skills you would like the trainers to improve/learn?

For me, following Don Bosco's philosophy, a trainer doesn't need to know everything, but they should have broad and multidisciplinary knowledge. This enables them not only to manage the group they are guiding but also to have a more comprehensive understanding of knowledge as a whole. I believe that, in classroom management and training in general, it is essential to develop creativity, vision, and perspective. It's not just about teaching a specific class but about transmitting knowledge and messages that can reach even those who are not directly in the room. Therefore, I would find it important for the training to cover various aspects of knowledge, providing a more well-rounded and interdisciplinary preparation.

Pedagogical skills

Conflict management, Class group management, Individualised Learning Path

Digital pedagogy

We'd like to improve our knowledge, because now we can only teach one IT class, but we can't integrate IT into other curricula, such as electrician or mechanic

Do you use any kind of digital tools in the classroom?

We only have one computer room that has computers that are already old. In other classrooms there is no possibility of digital training.

Circular waste skills?

We have had the implementation of the Projeto Verde, which is funded by Dom Bosco Tech Africa. On some occasions, training courses were organized, but they were not exclusively for the center's students. Some of those who are with us today participated in these courses, which focused on recycling and tree planting. However, they were quite short, lasting around three or four days, and were attended only by those who were interested.

I believe there is still a significant need to further explore these topics, especially recycling and waste utilization, to provide a more comprehensive and structured training

Entrepreneurship experience/skills?

The training we give is aimed at making them entrepreneurs. We try to give them tools and encourage them to create work groups to buy the things that they need to start working. Probably entrepreneurship need a bit more than this, but our reality doesn't allow for a lot of entrepreneurships, because there aren't many possibilities either, especially for our trainees.

The workplace training we provide here also aims to open participants' horizons. It's not just about teaching technical skills but also providing practical tools such as writing a CV, applying for jobs, and understanding one's labor rights. Additionally, we address topics like where to seek support in case of job-related issues or rights violations. it incorporates other key aspects, including entrepreneurship. We provide the necessary knowledge and expect participants to put it into practice. However, as mentioned before, we understand that it's not always easy and that not everyone has the same opportunities

Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)

We are trying to establish new partnerships, but it has been difficult for many reasons. The employment rate is around 20%

Facilities of your VET schools for training delivery

I don't think physical space is a major issue for us; we have enough room.

The challenges are more related to technical aspects, such as the availability of computers, tablets, and, most importantly, Internet access.

The equipment operates on a solar energy system, so sometimes we need to recharge the devices to manage the system, but we are not going to run out of energy.

Best period for training (July-October)

July or August because there is the summer break

Do you think your trainers are interested in the topics that are proposed in this training?

Do you think your trainers are interested in the topics that are proposed in this training?
I believe that the trainers are interested in receiving training on topics.

In your opinion, which of the modules will be of most interest for them?
Module A: Pedagogical upskilling & Training transfer to learners' methodology

I believe that the trainers are interested in receiving training on topics. When we announced the opportunity to participate in this course, everyone expressed their willingness to join.
Many of them are always open to further training. Even within the center, whenever there is a need for specialization or updates in a particular field, they are eager to participate. Despite some of them working in other sectors, they consistently show enthusiasm for learning and expanding their knowledge when given the opportunity.
Even if they don't show much interest at first, because many of them don't have a good knowledge of the area of training you're trying to impart, I think it's important, because it's relevant.

In your opinion, which of the modules will be of most interest for them?
All of them

Interview Manuel Campos – **Director VCT Dom Bosco - Dondo (Cuanza Norte)**

Academic background and professional experience of trainers
Their background is at the minimum high school or technical and vocational institutes and at maximum university or higher education institutes.

Areas of skills you would like the trainers to improve/learn?
In their specific area of training

Pedagogical skills
Cooperative learning

Digital pedagogy
We'd like to improve our knowledge, because now we use it only in the IT class.

Do you use any kind of digital tools in the classroom?
We only have computers in the computer room for the IT class, same situation with internet and wifi. In other classrooms there is no possibility of digital training.

Circular waste skills?
Yes, we have some but just the basics

Entrepreneurship experience/skills?
Yes, we do have some experience, but the process is currently on hold. We've been working to restart it, but it has been challenging

Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)
In the past, there was a network of partnerships with private companies, but it no longer exists.
The employability rate of my VET program is currently 2% because we haven't placed any trainees in the job market for the past five years due to the absence of partnerships.

Facilities of your VET schools for training delivery
We have a room available, but our resources in terms of tools are limited.

Best period for training (July-October)
July it is better because we don’t have class.

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CWA pre-training assessment interview with Headmasters

Interview structure:

- Context: Welcome, project, training
- Academic background and professional experience of trainers
- Areas of skills you would like the trainers to improve/learn?
- Pedagogical skills (i.e. Cooperative learning, Class group management, Design Thinking, Conflict management, Individualised Learning Path)
- Digital pedagogy?
- Do you use any kind of digital tools in the classroom?
- Circular waste skills?
- Entrepreneurship experience/skills?
- Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)
- Facilities of your VET schools for training delivery
- Best period for training (July-October)
- Do you think your trainers are interested in the topics that are proposed in this training?
- In your opinion, which of the modules will be of most interest for them?

CWVA Entrevista de diagnóstico, prévia à formação de formadores, a realizar aos Diretores das Escolas

Estrutura da Entrevista:

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- Pedagogia digital?
- Utiliza algum tipo de recursos digitais em sala de aula?
- Competências sobre gestão circular de resíduos?
- Experiência/competências em empreendedorismo?
- Parcerias Público-Privada para o Ensino e Formação Profissional (EFP) - Tem uma rede de contactos de parceiros no mercado de trabalho? Qual é a taxa de empregabilidade da sua escola de EFP?
- Infraestruturas da sua escola de EFP para a realização de formações
- Melhor período para a formação (julho-outubro)
- Considera que os seus formadores têm interesse nos temas propostos nesta formação?
- Na sua opinião, quais dos módulos serão de maior interesse para eles?

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INTERVIEW WITH

MILTON LIMA - HEADMASTER OF THE VOCATIONAL TRAINING CENTER OF SÃO TOMÉ
(26-March-2025)

»»» Academic background and professional experience of trainers

The Centre's trainers are all graduates, with some holding master's degrees and other doctorates. They are all external collaborators, carrying out professional activities in addition to teaching at the Centre.

»»» Areas of skills you would like the trainers to improve/learn?

Entrepreneurship, Digital Pedagogy and Circular Economy.

»»» Pedagogical skills (i.e. Cooperative learning, Class group management, Design Thinking, Conflict management, Individualised Learning Path)

Our trainers have the pedagogical skills listed here, but they are always keen to update their knowledge and have access to the latest methodologies.
It should be noted that we have already had individual learning paths with students with disabilities.

»»» Do you use any kind of digital tools in the classroom?

We use computers, projectors and we also project videos to make the lessons more dynamic and appealing to the trainees.

»»» Circular waste skills?

This is a pertinent topic that interests both trainers and trainees, as we all realise that the professions of the future must be developed around the concepts of circularity and sustainability.
This area is not being worked on in São Tomé.

»»» Entrepreneurship experience/skills?

Entrepreneurship has been addressed and taught at the centre since it was founded, and it has even created ACPE - Associação de Criação do Próprio Emprego (Association for the Creation of Own Employment).

»»» Public-Private Partnership for VET (do you have a network of market actors? Which is the employment rate of your VET school?)

The Centre has the participation of the State, the Chamber of Commerce and Services and the Trade Union Centres, and it has very close links with various companies to which it disseminates the jobs offered by its courses. In this way, it manages to get both curricular internships and jobs for its graduates.
As an example, last year an up-and-coming company that assembles solar panels hired all the trainees on a course the centre taught in renewable energies and even asked for more workers, so the Centre is going to open the course again.
The Centre's employability rate is 64%.

»»» Facilities of your VET schools for training delivery

The Center has computers and projection equipment. However, since the trainers are external, there is a possibility that they cannot be physically at the Center to receive the ToT, so each of them has their own device that they will use for the trainings.

»»» Best period for training (July-October)

To be defined yet, but in principle it will be September, beginning of October.

»»» Do you think your trainers are interested in the topics that are proposed in this training?

They are very interested indeed. They all value continuing education.

»»» In your opinion, which of the modules will be of most interest for them?

During the meetings where I presented the project to them, they expressed interest in all the modules.

APPENDIX C- MODULE OUTLINES

Co-funded by the European Union


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TRAINING MODULE OUTLINE		
1	**Training Module Title**	Module A: Pedagogical upskilling: Empowering Educators - Competency-Based Teaching and Digital Pedagogy for Modern Classrooms **Part 1: Improving VET Teaching with the Competency-Based Approach**
2	**Abstract with aims & objectives**	The training module aims to promote the methodology of the competency-based approach, an educational and training model based on the development and effectiveness of specific competencies, overcoming the traditional logic related to the amount of classroom hours or passing tests and/or exams. The module will start from the definition of competence, understood as the integration of knowledge, skills and attitudes that result in observable and measurable behaviors, and then focus on the design of the Individual Training Plan. Participants will be provided with operational tools to evaluate the effectiveness of training during internships and apprenticeships. The course will also illustrate the tasks of the key figures in the competency-based approach, with a specific focus on the roles of the training mentor and the company mentor, who are the crucial figures in ensuring objective and quality assessment of the skills developed by students during their practical training in the company. The objectives of the module are: - Understand the basic principles and advantages of the competency-based educational approach, distinguishing it from traditional educational models. - Define the concept of "competence" as the integration of knowledge, skills and attitudes, and its manifestation through observable and measurable behaviors. - Acquire the basis for designing an Individual Training Plan. - Know operational tools for monitoring and evaluating the effectiveness of practical training (e.g., during internships or apprenticeships). - Identify the specific tasks and roles of the training tutor and the business tutor for objective and quality assessment of the skills developed by students. Upon completion of the course, participants will be able to: - Know the basic principles of the competency-based training approach and identify its advantages over traditional training models. - Clearly define what is meant by "competency," identifying its key components (knowledge, skills, attitudes) and describe how these translate into observable and measurable behaviors.

		- Structure the key sections of an Individual Training Plan, understanding its rationale and purpose. - Identify and select appropriate operational tools to monitor learning and evaluate the effectiveness of competency-based practical training (such as internships or apprenticeships). - Know the roles, duties and responsibilities of the training mentor and the business mentor to determine objective and quality assessment of the competencies developed by students.
3	**Key words**	Competency-Based Approach; Competencies; Individual Training Plan (IEP); Competency Assessment (Methodologies and Tools); Training Tutor; Company Tutor; Training Design; Practical Training (Internship, Apprenticeship); Operational Assessment Tools.
4	**Knowledge domain**	The specific prior knowledge required of participants should not be overly specialized, as the course itself aims to build core competencies on the competency-based approach. However, to maximize the benefit of the course, it would be helpful for participants to have: - Practical Experience in Teaching or Training, including in the company - Basic Understanding of Educational/Training Processes. - Understanding of the training system in which they work In-depth prior knowledge of the Competency-Based Approach is NOT required.
5	**Contents (with aims & objectives and n. of hours of each unit)**	**Unit 1: Understanding the Competency-Based Approach: Principles and Advantages.** This unit introduces the competence approach that will be the basis for subsequent units. Participants in the module will - will learn about the competency approach and its characteristics; - they will analyze the fundamental principles guiding APC, including student-centeredness, orientation to measurable learning outcomes, transparency of learning objectives, and flexibility of pathways; - they will explore the concept of competence: as the dynamic integration of knowledge (knowing), practical skills (knowing how to do) and attitudes/behaviors (knowing how to be). Duration: Asynchronous lecture 1,5 hour
		Unit 2: Planning in the Competency-Based Approach. The Individual Training Plan. This module will focus on the practical aspects of instructional design within the competency-based approach, with a special

		emphasis on the key tool of the Individual Training Plan (IEP). Participants will cover the following topics: - Principles of Competency-Based Instructional Design i.e., how to translate identified competencies into clear and measurable learning objectives. - The Individual Training Plan (PFI)-Central Tool: Definition, purpose and importance of the PFI as a personalized document that guides the student's learning and skills development pathway. Detailed analysis of the sections and constituent elements of a well-structured PFI (competencies to be developed, specific objectives, activities, resources, timeframe, evaluation methods). - Practical Development of the Individual Training Plan:The operational steps to develop a PFI: from the analysis of individual training needs to the shared definition of commitments. Techniques and tools for customizing the PFI according to the characteristics and needs of the individual student. - The role of different actors (student, training tutor, business tutor) in co-constructing, monitoring and updating the PFI. - Practical exercises and analysis of PFI models. Duration: Asynchronous lecture 1,5 hour
		Unit 3: The Role of the Training and Company Tutor. This unit is devoted to delving into the key figures of the training and corporate tutor, who are essential to the success of the competency-based approach, especially in pathways that integrate theoretical and practical training in companies. The following topics will be addressed: - The Strategic Importance of Tutoring: The tutor as a facilitator of individualized learning, a guide in the skills development pathway and a linking figure between different training contexts. - The Profile and Tasks of the Training Tutor (of the training institution/school): support in the definition and monitoring of the Individual Training Plan (IEP), student orientation, facilitation of learning processes and self-assessment. - The Profile and Tasks of the Company Tutor (in-company contact person):welcoming and inserting the student into the work context, transmitting practical knowledge and company culture, creating situational learning opportunities, observing and evaluating performance. - The Effective Collaboration between Training Tutor and Company Tutor:Ways and means of building a solid partnership

		and constant communication between the two tutoring figures. Co-responsibility in monitoring the student's progress, validating the skills acquired and ensuring the coherence of the training course. Duration: Asynchronous lecture 1,5 hour
		Unit 4: Assessing Competencies in the Company: Methodologies and Tools. - This unit focuses on strategies and tools for effective skills assessment, with a specific focus on the business context and practical training. Participants will learn to: - Understand the Fundamentals of Competency-Based Assessment: Key principles of an assessment in a competency-based approach (e.g., transparency, developmental focus, consistency with standards). How to align assessment activities with the competencies defined in the Individual Training Plan (IEP). - Direct observation of performance in real work situations. Analysis of project work, products and concrete work outcomes. Structured interviews and assessment interviews. - Self-assessment techniques and (where appropriate) peer assessment. - Identifying and Using Effective Evaluation Tools: Presentation of operational tools to support the evaluation process. Detailed observation grids and checklists. Logbooks and activity reports for ongoing monitoring. - The Role of Tutors in Evaluation and Feedback: Clarifying the responsibilities of the business tutor and the training tutor in the process of observation, data collection and formulation of evaluative judgment. The importance of actively involving the student in the process, promoting self-assessment and reflection on their own skills. Duration: Asynchronous lecture 1,5 hour
6	**Learning outcomes (max 2 per each unit)**	**Unit 1: Understanding the Competency Approach: Principles and Benefits** LOut1: Explain the basic principles of the Approach by Competence (APC), highlighting its major differences from traditional training models. LOut2: Define the concept of "competence" as the integration of knowledge, skills and attitudes, and argue the main benefits of adopting APC for learners, trainers and organizations.

		Unit 2: The Design in the Competency Approach and The Individual Training Plan. LOut1: Describe the key steps in designing a training intervention using the competency-based approach, from defining target competencies to formulating learning objectives. LOut2: Identify and structure the essential building blocks of an Individual Training Plan (IEP), understanding its purpose and how it can be customized. **Unit 3: The Role of the Educational and Business Tutor.** LOut1: Distinguish and describe the roles, specific responsibilities and key competencies of the training tutor and the corporate tutor within competency-based pathways. LOut2: Outline strategies and modalities for effective collaboration between the educational tutor and the corporate tutor, highlighting their joint contribution to the monitoring and evaluation of the student's skill development. **Unit 4: Assessing Competencies in the Firm: Methodologies and Tools.** LOut1: Select the most appropriate assessment methodologies for ascertaining specific competencies in practical and corporate training contexts, giving reasons for the choice. LOut2: Identify and describe the use of different operational tools (e.g., observation grids, evaluation rubrics, portfolios) for collecting evidence and assessing competencies, as well as for providing constructive feedback.

7	**Learners' profile**	- Teachers and Trainers of VET Institutes and Technical Schools: Teachers and trainers who wish to update their teaching methodologies, moving from a traditional approach to one centered on the development and assessment of their students' practical and professional skills. - Training Tutors: Staff of training institutions or schools responsible for accompanying students, co-designing Individual Training Plans (IEPs) and linking them with practical experiences in companies. - Company Tutors and In-Company Training Referrers: Professionals who work within companies and are responsible for following trainees, apprentices or new hires, facilitating their learning in the field and participating in the evaluation of their skills. - Training Designers and Education Coordinators: Figures responsible for planning, developing and coordinating curricula and training programs that aim to implement or strengthen the competency-based approach. - Personnel involved in Development Projects in the Education/VET Sector in Africa.
8	**Timeline (details of hours and time allocated for each unit and Q&A session)**	Unit 1: 1,5 hour asynchronous Unit 2: 1,5 hour asynchronous Unit 3: 1,5 hour asynchronous Unit 4: 1,5 hour asynchronous + 2 hrs individual assignment + 2 hrs Q&A synchronous
9	**Tools and materials needed for implementation**	Laptop, tablet or smartphone (as last choice), headphones, good Internet Connection with webcams.

TRAINING MODULE OUTLINE		
1	**Training Module Title**	**Circular Waste Technical Skills**
2	**Abstract with aims & objectives**	With growing urbanisation and industrial development, the management of waste has become a pressing issue across various sectors. Technical and vocational education and training (TVET) institutions must be equipped to address these challenges by fostering practical skills. This module is designed to upskill vocational education and training (VET) educators by providing them with technical knowledge and tools relevant to circular waste management. The aim is to prepare educators to guide students in understanding the waste sector not only as a sustainability imperative but also as a potential career path or avenue for self-employment. Educators will gain insights into circular economy principles, green job opportunities, and innovative waste treatment technologies, thereby empowering future professionals to drive sustainable practices in diverse workplaces. **Objective**: Enable VET educators to acquire skills and tools that will allow them to promote student awareness of waste management as a viable career or self-employment option, based on circular economy principles and technical know-how.
3	**Key words**	Circular Economy, Circular Waste Management, Green Jobs, Sustainable Practices, TVET, Technical Skills, Waste into Wealth, Waste as a resource
4	**Knowledge domain**	Circular Waste Management and Sustainable Economy
5	**Contents (with aims & objectives and n. of hours of each module)**	Unit 1: Circular Economy key concepts (2 hours) Objectives: • Mastery of the main circular economy concepts • Finding the balance between circularity and sustainability • Raise awareness of the power of VET to close the circular skills gap
		Unit 2: Waste Management and Environment (3 hours) Objectives: • Introduction to the multifaceted aspects of waste production, handling, collection, transport, treatment and disposal • Identify the different types of waste and their environmental and social impacts

		• Highlighting the critical role of waste management in modern society, influencing environmental health, public safety, and resource efficiency
		Unit 3: Circular Waste Management (3 hours) Objectives: • Explore different waste management practices, such as reduction, reuse, recycling, composting, incineration, and landfilling • Introduction to sustainable practices, technologies, and choices that are integral to circular waste management • Introduction to waste collection, sorting, treatment, and recycling technologies
		Unit 4: Waste as a Resource (3 hours) Objectives: • To understand the concept and its relevance in the circular economy • Knowing techniques for recovering value from waste, including upcycling, remanufacturing, and resource recovery • To evaluate real-life examples of industries and communities successfully implementing waste-to-resource strategies
		Unit 5: Converting Waste into a Source of Wealth (4 hours) Objectives: • Understanding the economic potential hidden within discarded materials and how entrepreneurs can create wealth by harnessing the value in waste • To explore business opportunities in the waste sector, including recycling, repair, resale, and energy recovery • How waste can become a catalyst income generation
		Unit 6: Technical systems and equipment in waste management (5 hours) Objectives: • Know the waste management equipment and machinery used throughout the process. • Identify the functionality of waste management tools and technologies • Comprehend the mechanical components, including gears, belts, and pulleys of waste management machinery

		• Demonstrate proficiency in the fundamentals of mechanical drive systems and their relevance to waste management processes • Know the basics of the electrical systems of waste management equipment • Ensure the adoption of electrical safety measures and best practices to guarantee the safe operation of waste management equipment • Identify and assess potential health and environmental hazards in waste handling processes • Conduct risk assessments to ensure the safety and environmental integrity of waste management operations
6	**Learning outcomes (max 2 per each unit)**	**Unit 1:** LOut1: Explain key principles of the circular economy and how they differ from linear models. Lout2: Recognize the role of vocational education and training (VET) in promoting sustainable circular practices. **Unit 2:** LOut1: Categorise different types of waste and evaluate their environmental and social impacts. LOut2: Describe the stages of waste management and articulate its significance to public health and sustainability. **Unit 3:** LOut1: Compare various waste management practices and their suitability within a circular economy. LOut2: Master the key technologies used in waste collection, sorting, and recycling processes **Unit 4:** LOut1: Know techniques for recovering value from waste, including upcycling and remanufacturing. LOut2: Evaluate real-world case studies of successful waste-to-resource implementations. **Unit 5:** LOut1: Identify and assess economic opportunities in the waste sector, such as recycling and energy recovery. LOut2: Develop basic business ideas based on the reuse and monetisation of waste materials. **Unit 6:** LOut1: Identify key components and functions of mechanical and electrical waste management equipment. LOut2: Apply safety protocols and perform basic risk assessments related to the operation of waste management systems.

<table>
<tr><td></td><td>Learners' profile</td><td>This module is aimed at VET teachers from Angola, Namibia and São Tomé who wish to acquire and pass on knowledge and techniques of circular waste management and does not require prior knowledge in these areas.</td></tr>
<tr><td>8</td><td>Timeline (details of hours and time allocated for each unit and Q&A session)</td><td>Blended Format: Total 20 hours
<table>
<tr><th>Unit</th><th>Format</th><th>Duration</th><th>Content Summary</th></tr>
<tr><td>Unit 1</td><td>E-Learning + Live Training</td><td>2 hours (1h +1h)</td><td>Circular Economy key concepts (1 hour e-learning)
Feedback and Q&A Session (1 hour)</td></tr>
<tr><td>Unit 2</td><td>E-Learning + Live Training</td><td>3 hours (2h +1h)</td><td>Waste Management and Environment Impact (2 hours e-learning)
Feedback and Q&A Session (1 hour)</td></tr>
<tr><td>Unit 3</td><td>E-Learning + Live Training</td><td>3 hours (2h +1h)</td><td>Circular Waste Management (2hours e-learning)
Feedback and Q&A Session (1 hour)</td></tr>
<tr><td>Unit 4</td><td>E-Learning + Live Training</td><td>3 hours (2h +1h)</td><td>Waste as a Resource (2 hours e-learning)
Feedback and Q&A Session (1 hour)</td></tr>
<tr><td>Unit 5</td><td>E-Learning + Live Training</td><td>4 hours (2.5h +1.5h)</td><td>Converting Waste into a Source of Wealth (2.5 hours e-learning)
Feedback and Q&A Session (1.5 hours)</td></tr>
<tr><td>Unit 6</td><td>E-Learning + Live Training</td><td>5 hours (3.5h +1.5h)</td><td>Electrical systems and equipment in waste management (3.5 hours e-learning)
Feedback and Q&A Session (1.5 hours)</td></tr>
</table></td></tr>
<tr><td>9</td><td>Tools and materials needed for implementation</td><td>• Personal Computers, Laptops or Smartphones
• Online learning platform (Smart Step Platform)
• Video conferencing platforms (Zoom/Teams)
• Projector and reliable internet access for live sessions
• Recorded lessons
• Presentation slides and case study materials</td></tr>
</table>


CircuWasteVETAfrica

CircuWasteVETAfrica

TRAINING MODULE OUTLINE		
1	Training Module Title	**Circular Business Models: From Ideation to Implementation**
2	Abstract with aims & objectives	This 10-hour blended learning training module aims to equip VET teachers and trainers with the necessary knowledge and tools to support students in developing innovative business ideas rooted in the circular economy. The focus is on combining environmental, social, and economic value to inspire real-world entrepreneurial initiatives. Participants will explore the foundational principles of the circular economy, apply creative ideation techniques, design sustainable business models, and develop effective communication strategies for pitching circular business ideas.
3	Key words	Circular economy, green entrepreneurship, sustainable business models, innovation, pitch design, value proposition.2
4	Knowledge domain	Circular economy, Entrepreneurship, Sustainability, Business Innovation, Vocational Education and Training (VET).
5	Contents (with aims & objectives and n. of hours of each module)	Unit 1: Generate Ideas for Circular Business (4 hours) Objectives: • Introduction: Circular business and jobs. • The value hill and the 9R's framework. • Inspire participants with successful case studies. • Guide through creative idea generation and validation.
		Unit 2: Circular Business Model Design (4 hours) Objectives: • Explore the concept of a circular business model. • Design value propositions with social, environmental, and economic impact. • Develop a circular business model using practical tools.
		Unit 3: Pitching and Next Steps in Entrepreneurship (2 hours) Objectives: • Learn effective pitch design techniques. • Practise communication strategies to present circular business models. • Understand the next steps in the entrepreneurial journey.

CircuWasteVETAfrica

<table>
<tr><td>6</td><td>Learning outcomes (max 2 per each unit)</td><td>Unit 1:
LOut1: Understand the core principles of the circular economy and business and identify their application in different sectors, including waste as resource.
LOut2: Generate and critically evaluate circular business ideas.

Unit 2:
LOut1: Design a sustainable value proposition using circular economy principles.
LOut2: Develop and structure a circular business model.

Unit 3:
LOut1: Create and present a persuasive pitch for a circular business idea.
LOut2: Identify key steps for testing and scaling a circular business initiative.</td></tr>
<tr><td>7</td><td>Learners' profile</td><td>This module is designed for VET teachers and trainers interested in fostering entrepreneurship through sustainable and innovative approaches. Participants should have a basic understanding of business or educational experience in entrepreneurship, but no prior knowledge of circular economy is required.</td></tr>
<tr><td>8</td><td>Timeline (details of hours and time allocated for each unit and Q&A session)</td><td>Blended Format: Total 10 hours
<table>
<tr><th>Unit</th><th>Format</th><th>Duration</th><th>Content Summary</th></tr>
<tr><td>Unit 1</td><td>E-Learning + Live Training</td><td>4 hours (2.5h +1.5h)</td><td>Circular economy frameworks, ideation tools, best practices, idea generation (2.5 hours | E-Learning).
Feedback and Q&A Session (1.5 hours)</td></tr>
<tr><td>Unit 2</td><td>E-Learning + Live Training</td><td>4 hours (2.5h +1.5h)</td><td>Value proposition design, business model development (2.5 hours | E-Learning).
Feedback and Q&A Session (1.5 hours)</td></tr>
<tr><td>Unit 3</td><td>E-Learning + Live Training</td><td>2 hours (1.5h +0.5h)</td><td>Pitch training, entrepreneurial steps (1.5 hours | E-Learning).
Feedback and Q&A Session (0.5 hours)</td></tr>
</table></td></tr>
<tr><td>9</td><td>Tools and materials needed for implementation</td><td>• Online learning platform (Smart Step Platform).
• Projector and internet access for live sessions.
• Recorded lessons.
• Presentation slides and case study materials.
• Worksheets and templates (e.g. Business Model Canvas, Pitch Canvas).</td></tr>
</table>

TRAINING COURSE FACTSHEET		
1	**Training Course Title**	Micro-Entrepreneurship
2	**Abstract with aims & objectives**	This 10-hour training module is designed to strengthen the capacity of VET teachers and trainers in São Tomé, Angola, and Ghana to support aspiring micro-entrepreneurs. The course offers practical insights into starting and managing small-scale circular businesses, focusing on local regulatory environments, business planning, financial literacy, and mindset development. By incorporating real-world tools and local case studies, the module aims to build trainers' confidence in guiding learners toward self-employment, business ownership, and capitalizing on CWVA outcomes. **Aims:** • To introduce the key principles and processes of micro-entrepreneurship in diverse African contexts. • To enable trainers to teach essential entrepreneurial skills using context-relevant pedagogies. • To align VET instruction with local private sector needs and opportunities. **Objectives:** • Analyse motivations and challenges specific to micro-entrepreneurs in different countries. • Teach basic legal, financial, and operational aspects of running a microbusiness. • Foster an entrepreneurial mindset and resilience in learners. • Support learners in developing and presenting a business idea using practical tools.
3	**Key words**	Micro-entrepreneurship, circular economy, VET training, business planning, financial literacy, taxation, business registration, entrepreneurial mindset, budgeting, local markets, digital platforms.
4	**Knowledge domain**	**Entrepreneurship & Business Development** – Business planning, idea validation, and market engagement for small enterprises.

		Vocational Education & Training (VET) – Pedagogical tools and strategies for teaching entrepreneurship in practical learning environments. **Finance & Legal Literacy** – Basic taxation, accounting, budgeting, and registration tailored to local frameworks. **Personal & Social Development** – Mindset building, leadership, communication, and decision-making in uncertain environments. **Digital Literacy & Sales** – Use of social and mobile platforms to market and manage micro-enterprises.	
5	**Contents (with aims & objectives and n. of hours of each module)**	**Module D: Introduction to Micro-Entrepreneurship in São Tomé, Namibia, Angola, Ghana. (10 Hrs, AREA)**	
		Unit 1: **Introduction to Micro-Entrepreneurship** -50 minutes	• Definition of Micro-entrepreneurship and relevance in the (São Tomé, Namibia, Angola, Ghana.) context (20') – 5' per country • Differences between micro, small, and medium enterprises (MSMEs) (15') • The role of micro-entrepreneurship in the business market. (15')
		Unit 2: **Motivations and Profiles of Micro-Entrepreneurs** -40 minutes	• Personal, economic, and social drivers of entrepreneurship in SSA. (20') • How local challenges (e.g. unemployment, informal economy) shape entrepreneurial ambition (20')
		Unit 3: **Entrepreneurial Pedagogy and Mindset Building** *-60 minutes*	○ Learning methods that encourage ownership, control, independence, and responsibility (20')

			○ Cultivating commitment and perseverance amid uncertainty (10’) ○ Practical tools: group projects, real-life case studies, community-based learning (10’)
		Unit 4: **Essential Skills for Micro-Entrepreneurs** -60 minutes	○ Key soft and hard skills (communication, planning, resilience, digital literacy) (20’) ○ Choosing the appropriate business structure (sole proprietorship, business name, limited liability company) (20’) ○ Legal obligations: Company registration, and understanding regulatory bodies (20’)
		Unit 5: **From Idea to Action: How a Business is Born** *-45 minutes*	○ Identifying community needs and business opportunities (10’) ○ Crafting a value proposition tailored to the local market (20’) ○ Basic tools for validating business ideas (15’)
		Live Session 1: Group Q&A **(60 minutes)**	30 minutes quick recap of the units 1-5 30 minutes for Q&A on Units 1-5

		Unit 6: **Basics of Business Registration and Legal Framework** - *45 minutes*	○ Choosing the appropriate business structure (sole proprietorship, business name, limited liability company)- for each country (São Tomé, Namibia, Angola, Ghana) (45’)
		Unit 7: **Legal Certification based on the business typology** *-60 minutes*	○ Navigating bureaucracy, and regulatory uncertainty (15’) ○ National Data Protection ; Import and Distribution license; Products and services Certification, Health Certicates (45’)
		Unit 8: **Fundamentals of Taxation and Accounting** *-45 minutes*	○ Mandatory tax registrations (20’) ○ Introduction to VAT, PAYE, Company Income Tax, and withholding tax (15’) ○ Role of a licensed accountant or chartered accountant in managing compliance (10’)
		Unit 9: **Banking, Budgeting, Financial Planning, and Sales Techniques** *-70 minutes*	○ How and Why to Open a Bank Account: Practical Tips (15’) ○ Differentiating fixed and variable costs (15’) ○ Building simple income/expense projections (20’) ○ Sales strategies in the São Tomé, Namibia, Angola, Ghana. markets: direct selling, trust-based relationships, and digital platforms (e.g. WhatsApp, Jumia, Instagram) (20’)

		Unit 10: **Building and Presenting a Simple Business Plan** *-75 minutes*	• Basic structure of a business plan for micro-entrepreneurs (20') • Localised templates and step-by-step exercises (20') • Presentation of business ideas (business examples) (35') • Access to credit and financial services. (20')
		Live Session 1: Group Q&A **(60 minutes)**	30 minutes quick recap of the units 6-10 30 minutes for Q&A on Units 6-10

TRAINING COURSE FACTSHEET		
1	**Training Course Title**	Training Course: Frugal & Digital Innovation for Circular Waste and Circular Economy – São Tomé, Namibia, Angola, Ghana Context
2	**Abstract with aims & objectives**	This 20-hour blended learning course is designed to equip VET trainers in São Tomé, Namibia, Angola, and Ghana with practical knowledge and tools to integrate frugal and digital innovations into the circular economy. The training aims to address local waste management challenges, promote low-cost and scalable solutions, and empower trainers to develop learners' green entrepreneurship potential. Through thematic clusters combining self-paced learning and live Q&A sessions, participants will explore technical skills, emerging technologies (e.g., IoT, AI, blockchain), and teaching methods that encourage waste transformation, value creation, and sustainable microenterprise development. **Aims:** • To foster understanding of circular economy principles adapted to local African contexts. • To promote frugal and digital innovation as accessible tools for waste transformation and entrepreneurship. • To enable VET trainers to design, test, and integrate circular innovation units into existing curricula. **Objectives:** • Analyse local constraints and opportunities in waste and resource use. • Apply frugal innovation strategies to create practical low-cost solutions. • Use digital tools (e.g., IoT, AR, blockchain) to enhance traceability and efficiency. • Support students in developing and pitching green business ideas. • Replicate and scale training across different VET disciplines.
3	**Key words**	Circular economy, frugal innovation, green entrepreneurship, digital tools, sustainable microenterprise, waste-to-resource, SCAMPER, VET integration, IoT, blockchain, artificial intelligence, augmented reality.
4	**Knowledge domain**	**Circular Economy & Sustainability** – Principles and practices for reducing waste and maximizing resource value. **Frugal Innovation** – Low-cost, high-impact solutions tailored to underserved contexts. **Digital Technologies** – Practical use of IoT, AI, blockchain, and AR in waste management and education.

TRAINING COURSE FACTSHEET			
1	**Training Course Title**	Training Course: Frugal & Digital Innovation for Circular Waste and Circular Economy – São Tomé, Namibia, Angola, Ghana Context	
		Vocational Education & Training (VET) – Curriculum integration, teaching tools, and assessment strategies. **Entrepreneurship & Local Development** – Fostering microenterprises in green and digital sectors.	
5	**Contents** **(with aims & objectives and n. of hours of each module)**	**Module E:** CWVA wants to propose alternative innovation approaches which can all serve the purpose of developing Green and Digital Skills for VET learners and could be adopted by VET learners in different contexts (as employees and/or as micro-entrepreneurs).	
		Unit 1: **Context and Challenges for Microenterprises in São Tomé, Namibia, Angola, Ghana.** (2 hrs)	• Unstable and expensive energy, poor road infrastructure, logistical difficulties. Example: 40% of agriculture production in SSA does not reach the consumers • Insecurity and risks of theft or damage during transport and storage • Most raw materials are imported, making them costly; locally sourced materials often poorly processed (e.g., improperly dried timber) • Limited access to formal credit – the growing role of microfinance agencies
		Unit 2: **What is Frugal Innovation?** (1 hr)	Core pillars: focus on essential functions, optimised performance, radical cost reduction
		Unit 3: **SCAMPER: A Creative Tool for Low-Cost Innovation** (0.5 hr)	• Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, Rearrange. • Example of application of SCAMPER to waste repurposing challenges.

TRAINING COURSE FACTSHEET			
1	**Training Course Title**	Training Course: Frugal & Digital Innovation for Circular Waste and Circular Economy – São Tomé, Namibia, Angola, Ghana Context	
		Unit 4: **Examples of Frugal Innovations in Africa** (1 hr)	• Mechanical and automatic water and soap dispensers with pedals to reduce human contact • Portable, robust, compact and economical ventilator • A bicycle ambulance with a trailer for pregnant women. Made from local materials to reach hospitals faster.
		Unit 5: **Examples of Waste Based Frugal Innovations** (1 hr)	• Tyres → road paving material • Recycled plastic → eco-bricks or low-cost furniture • Organic waste → compost or biogas (using micro-digesters for communities)
		Live session Q&A on Cluster 1: Local Challenges & Innovation Opportunities (2hrs)	30 minutes review Unit 1-5 30 minutes Q&A 30 minutes – ideation from waste to resource 30 minutes – presentation of ideas
		Unit 6: **Advanced Technologies Made Accessible – Blockchain & Traceability** (1hr).	• How blockchain can support waste traceability • Simple tools: mobile apps + QR codes for tracking and monetizing waste

TRAINING COURSE FACTSHEET			
1	**Training Course Title**	Training Course: Frugal & Digital Innovation for Circular Waste and Circular Economy – São Tomé, Namibia, Angola, Ghana Context	
		Unit 7: **Internet of Things (IoT) for Smart Waste Management** (1hr)	• What is IoT • Affordable IoT sensors: Arduino • IoT for Waste Applications
		Unit 8: **Artificial Intelligence and Predictive Analytics.** (2hr)	• What is AI and Predictive Analytics • AI for Waste Management, Examples optimizing waste collection routes, predictive maintenance for waste equipment • Local and scalable applications
		Unit 9: **Augmented Reality for Remote Technical Training** (1hr)	• AR for equipment maintenance and repair (e.g., using AREA's app) • Simulations and real-world case studies
		Unit 10: **Robotics for waste separation** (1hr)	• Simple sorting robots (manual + basic automation) • Future Opportunities for São Tomé, Namibia, Angola, Ghana ecosystems.
		Live session Q&A on Cluster 3: Smart Technologies for Waste Innovation (1hr)	30 min review Units 6-10 30 min Q&A

TRAINING COURSE FACTSHEET			
1	**Training Course Title**	Training Course: Frugal & Digital Innovation for Circular Waste and Circular Economy – São Tomé, Namibia, Angola, Ghana Context	
		Unit 11: **Tools and Models for VET Trainers - How to Design a Teaching Unit on Frugal Innovation & Waste** (1hr)	• Templates, tools, and active learning strategies • Cross-cutting integration with other VET courses
		Unit 12: **Low-Cost Workshop Activities for VET Classrooms** (1hr)	• Building functional items from waste • Practical challenges: "transform this waste"
		Unit 13: **How to Replicate the Course Across Other VET Domains (Carpentry, Mechanics, Fashion, etc.)** (1hr)	• Technical challenges / opportunities in Construction, Carpentry, Mechanics which could become business/products/services • Analysis of available resources • Example of frugal innovation
		Live session Q&A Preparing for In-Class Activities (1.5 hr)	Trainers are requested to prepare in-class activities before the live session 6 Trainers (2 per school) present (60") Feedback from the other participants (30")

TRAINING COURSE FACTSHEET		
1	**Training Course Title**	Training Course: Frugal & Digital Innovation for Circular Waste and Circular Economy – São Tomé, Namibia, Angola, Ghana Context
6	**Learning outcomes**	**Module Outcomes** At the end of this course, VET trainers will gain practical and theoretical skills to integrate frugal innovation, digital technologies, and circular waste practices across their teaching areas, empowering students to become both skilled workers and potential micro-entrepreneurs in Sao tome, Namibia, Angola, Ghana green economy.
7	**Learners' profile**	• Trainers with no previous knowledge on the topic coming from the three target countries
8	**Delivery mode (face2face, groups, online)**	Blended learning
9	**Tools and materials needed for implementation**	Smart mobile phone Smart glasses (will be used for demo)
10	**Related Urls and Online Resources**	
11	**Type of resource (video, lesson plan, etc.)**	Lessons plan Word-Powerpoint Mobile App

Unit 1: Introduction to Public-Private Partnership in TVET

1. What is a Public-Private Partnership?
    a) A government-led project
    b) A collaboration between the government and private sector for infrastructure development
    c) A partnership between two government entities
    d) A partnership between two private companies

2. What is a key characteristic of a Public-Private Partnership (PPP)?
    a) The public sector solely funds and manages the project.
    b) The private sector has no involvement in the project.
    c) A long-term contractual agreement between the public and private sectors.
    d) The private sector is always the majority stakeholder.

2. Which of the following is a potential benefit of a PPP for the public sector?
    a) Reduced government debt.
    b) Increased government control over the project.
    c) Lower project costs compared to traditional procurement.
    d) Elimination of all risks associated with the project.

3. What is a common risk associated with PPPs?
    a) The project will be completed ahead of schedule.
    b) The private sector will always outperform the public sector.
    c) Cost overruns and delays in project completion.
    d) The public sector will always achieve its objectives.

4. Which of the following is an example of a PPP project?
    a) A privately owned and operated toll road.
    b) A government-funded and managed hospital.
    c) A public park maintained and operated by a private company.
    d) A completely government-owned and operated water treatment plant.

5. What is a key principle underlying the success of a PPP?
    a) Complete risk transfer to the private sector.
    b) Clearly defined roles and responsibilities for each sector.
    c) No public oversight of the project.
    d) Minimal involvement of stakeholders.

6. What stakeholder is NOT typically involved in PPP?
    a) Government agencies
    b) Private investors or companies
    c) Local communities and end-users
    d) International NGOs with no relation to the project

Unit 2: The Framework of PPPs

1. Which of the following is a common PPP delivery model?
   a) Build-Operate-Transfer (BOT)
   b) Direct Government Procurement
   c) Sole Proprietorship
   d) Shareholders' Agreement
2. Which of the following are to be considered in the PPP Agreements?
   a) Regulatory framework
   b) Regulatory Oversight
   c) Monitoring and evaluation
   d) All of the above
3. What are some of the ethical considerations in PPP agreements?
   a) Good governance
   b) Ethical conduct
   c) Anti-corruption measures
   d) All of the above
4. What is the importance of framework in TVET?
   a) Ensuring quality and relevance
   b) Facilitating Progression and pathways
   c) Promoting recognition and mobility
   d) All of the above
5. What is the purpose of a risk-sharing mechanism in a PPP?
   a) To transfer all risks to the private sector
   b) To allocate risks to the party best able to manage them
   c) To eliminate risks entirely
   d) To reduce government oversight

Unit 3: Benefits of PPPs

1. What are some of the benefits of PPPs
   a) Resource mobilization
   b) Education
   c) Supervision
   d) Waste Management
2. What is a common method for governments to evaluate the success of a PPP project?
   a) Profit earned by private partner
   b) Achievement of performance standards and service quality
   c) Total project cost

d) Private sector market share

3. Which document outlines the responsibilities, rights, and obligations of each party in a PPP?
   a) Project feasibility report
   b) Concession or PPP agreement
   c) Financial closure document
   d) Environmental impact assessment
4. What is the primary benefit of using PPPs in the TVET sector?
   a) To privatize all vocational training institutions
   b) To leverage private sector expertise and resources to improve training quality and access
   c) To eliminate government involvement in education
   d) To reduce the number of vocational training providers
5. In the context of TVET, what is a typical role of the private sector in PPP?
   a) Providing funding and infrastructure for vocational training facilities
   b) Managing government payroll systems
   c) Developing national curriculum standards
   d) Overseeing all public sector employment policies
6. Which of the following is the “key outcome” expected from a successful PPP in the TVET sector?
   a) Increased youth unemployment
   b) Improved employability and industry readiness of graduates
   c) Decreased private sector participation over time
   d) Reduced government expenditure on vocational training

Unit 4: Challenges of Implementing PPPs in TVET

1. What is the key risk in PPP project that must be carefully managed?
   a) Political risks
   b) Technical risks
   c) Financial risks
   d) All of the above
2. Which of the following is a typical challenge faced in PPP projects?
   a) Alignment of public and private sector objectives
   b) Excessive transparency
   c) Overfunding by governments
   d) Lack of private sector interest
3. Which of the following is a challenge commonly faced in PPPs in the TVET sector?
   a) Lack of private sector interest in vocational training

b) Over-reliance on government funding
c) Ensuring quality standards and industry relevance in training delivery
d) Excessive transparency leading to public discontent

4. Which contractual aspect is “most critical” in TVET-focused PPP?
   a) Clear performance standards related to skill certification and employment outcomes
   b) Confidentiality clauses that prevent public access to program details
   c) Provisions that limit private sector influence on curriculum
   d) Short-term contracts of less than one year
5. Which is incorrect with regards to weakness & risks in PPPs
   a) The public sector may lose managerial control of its services
   b) Process of PPP procurement can be time consuming and expensive
   c) Problem of the higher cost of finance in the private sector
   d) PPPs can prove to be rather flexible instruments
   e) None of the above

Unit 6: Best Practices for Effective PPPs

1. Which of the following is a key principle for successful PPPs?
   a) Complete public ownership of the project.
   b) Limited risk-sharing between public and private sectors.
   c) Clear definition of roles, responsibilities, and risk allocation.
   d) Prioritizing short-term gains over long-term sustainability.

2. What is a crucial aspect of the project procurement phase in a PPP?
   a) Avoiding competitive bidding to expedite the process.
   b) Ensuring transparency and fairness in the selection of the private partner.
   c) Prioritizing projects with the highest potential for public sector profit.
   d) Minimizing public sector involvement to streamline decision-making.

3. Which of the following is a potential benefit of PPPs for the public sector?
   a) Reduced financial burden and access to private sector expertise and innovation.
   b) Increased public sector debt and reliance on private sector financing.
   c) Limited ability to influence project design and implementation.
   d) Reduced transparency and accountability in project delivery.

4. What role does the private sector play in a typical PPP?
   a) Sole responsibility for project funding and implementation.
   b) Limited to providing construction services only.
   c) Shared responsibility with the public sector for project design, financing,

construction, and operation.
d) Solely responsible for project operation and maintenance.

5. Which of the following is a key element for successful PPP implementation?
a) A robust policy, institutional, and regulatory framework.
b) Limited stakeholder engagement to avoid delays.
c) Unclear risk allocation to encourage private sector innovation.
d) Minimal monitoring and evaluation of project progress.

Unit 7: Strategies for TVET Managers

1. Which of the following is a key benefit of PPPs for TVET institutions?
a) Reduced funding requirements for the public sector.
b) Increased access to specialized equipment and training resources.
c) Guaranteed employment for all graduates.
d) Elimination of the need for curriculum development.

2. What is a crucial aspect of a successful PPP in TVET?
a) Strict adherence to government procurement regulations, regardless of project needs.
b) Clear definition of roles, responsibilities, and performance metrics for all partners.
c) Limited involvement of the private sector to avoid conflicts of interest.
d) Emphasis on short-term project goals rather than long-term strategic objectives.

3. What potential challenge might TVET managers face when implementing a PPP?
a) Increased funding opportunities.
b) Greater flexibility in curriculum development.
c) Difficulty aligning private sector interests with public sector goals.
d) Reduced need for staff training.

4. How can TVET managers ensure that a PPP project remains relevant to the evolving needs of the labour market?
a) By limiting private sector involvement to initial setup and then relying solely on public sector expertise.
b) By regularly reviewing and updating the curriculum based on feedback from the private sector.
c) By prioritizing cost-effectiveness over the quality of training.
d) By focusing on traditional vocational skills rather than emerging technologies.

5. Which of the following is NOT a typical characteristic of a PPP in TVET?

a) Shared responsibility for financing the training program.
b) Joint decision-making on curriculum development.
c) Private sector management of all training operations.
d) Long-term commitment from both public and private partners.

6. What is a key consideration for TVET managers when selecting a private sector partner?

a) The partner's financial stability and experience in the TVET sector.
b) The partner's political affiliations.
c) The partner's willingness to provide free training to all students.
d) The partner's ability to offer the lowest possible training costs.

APPENDIX D - GUIDELINES FOR TRAINING MODULES DEVELOPMENT

Co-funded by the European Union

Guidelines for Training modules development WP2:

- In the development of training contents, responsible partners (CNOS-FAP, MQ, AREA, SWA) should refer to the information collected in the need analysis:
    - Interviews with headmasters
    - Questionnaires to trainers
- The training course will be blended (synchronous and asynchronous mode) to facilitate the double language
    - The theoretical contents will be delivered with pre-recorded lessons accompanied by slides
    - Each Slide will be shown with the contents both in English and Portuguese.
    - When the recording is in English, subtitles will be generated for Portuguese.
    - Only MQ has agreed to record 2 sessions (in English and Portuguese) per topic.
- The amount of hours foreseen in the project proposal for each module should be divided as follows:
    - at least 60% of the hours will be theoretical contents recorded and accompanied by slides
    - The remaining 40% will be covered by self-learning, assignments, Q&A sessions, etc.
- It is recommended that partners foresee 2 hours of Q&A live session (synchronous mode) at least every 10 hours of training.
- Per each training module foresee a final assessment/quiz with minimum 5, maximum 10 questions.
- For the translation of contents the consortium will proceed as follows:
    - partners (except MQ) will develop the content in english and translate it in portuguese with automatic translators (e.g. AI based translation programmes). MQ will then review the translations in Portuguese.
    - need to define how to proceed with the interpretation translation where needed.
- The Smart Step Platform will host the training contents (allowing the consortium to keep track of the participants in the training)
- The template for slides and contents development has been provided by AREA
- Each responsible partner has to fill in the training outline template for each training module (by April 30th)
- GUIDELINES for video recording are available HERE
- The background image for video recording is available HERE

APPENDIX E- TRAINING SCHEDULE

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Proposal plan for TOT course

Module	Date	Session	Participants	Training modality	Instructor	charge	Duration	ITALY / NAMIBIA	GHANA	SAO TOME	PORTOGALLO		Angola,
General Introduction	01/09/2025	Introductory live session with participants in Portuguese	m Angola Trainers from Sao Tomé	Syncronous	-	CNOS/AREA	1,0	3-4 PM					**Time zone Ghana, Sao Tomé**
General Introduction	01/09/2025	English	WA, PRSDTrainers from Ghana	Syncronous	-	CNOS/AREA	1,0	4-5 PM					
Module A_Pedagogical upskilling: Empowering Educators - Competency-Based Teaching and Digital Pedagogy for Modern Classrooms	02/09/2025	Based Approach: Principles and Approach. The Individual Training Plan	Trainers from: Angola, Sao Tomé,	Asyncronous	Luca Finelli	CNOS	3,0						
	04/09/2025	Company Tutor Company: Methodologies and Tools	Trainers from: Angola, Sao Tomé,	Asyncronous	Luca Finelli	CNOS	3,0						
	05/09/2025	Individual assignment	Trainers from: Angola, Sao Tomé,	Asyncronous	Luca Finelli	CNOS	2,0						
	10/09/2025	Live session Q&A	Trainers from: Angola, Sao Tomé,	Syncronous: 1H in Portuguese; 1H in English	Luca Finelli	CNOS	2,0	6 - 7 PM PT 7 - 8 P	4-5 PM	5 - 6 PM	6 - 7 PM		
	11/09/2025	1 - Didactics and Digital	Trainers from: Angola, Sao Tomé,	Asyncronous	Matteo Adamoli	CNOS	2,0						
	12/09/2025	Unit 6: 1 - AI search 2 - Canva for Education 3 - Ed Puzzle 4 - Genially	Trainers from: Angola, Sao Tomé,	Asyncronous	Luca Chiavegato	CNOS	2,0						
	15/09/2025	Live Q&A session	Trainers from: Angola, Sao Tomé,	Portuguese; 1H in	Luca Chiavegato	CNOS	2,0	6 - 7 PM PT 7 - 8 P	4-5 PM	5 - 6 PM	6 - 7 PM		
	16/09/2025	1 - Image generation	Trainers from: Angola, Sao Tomé,	Asyncronous	Luca Chiavegato	CNOS	2,0						
	18/09/2025	Live Q&A session	Trainers from: Angola, Sao Tomé,	Portuguese; 45' in	Luca Chiavegato	CNOS	2,0	6 - 7 PM PT 7 - 8 P	4-5 PM	5 - 6 PM	6 - 7 PM		
Module B_Circular Waste Technical Skills	19/09/2025	Unit 1: Circular Economy key concepts	Trainers from: Angola, Sao Tomé,	Asyncronous	Isabel Gonçalves	MQ	2,0						
	22/09/2025	Environment	Trainers from: Angola, Sao Tomé,	Asyncronous	Isabel Gonçalves	MQ	3,0						
	23/09/2025	Unit 3: Circular Waste Management Live session Q&A	Trainers from: Angola, Sao Tomé,	Asyncronous Portuguese; 1H in	Isabel Gonçalves	MQ	3,0 2,0	EN 6 - 7PT 7 - 8	4-5 PM	5 - 6 PM	6 - 7 PM		
	24/09/2025	Unit 4: Waste as a Resource	Trainers from: Angola, Sao Tomé,	Asyncronous	Isabel Gonçalves	MQ	3,0						
	25/09/2025	Wealth	Trainers from: Angola, Sao Tomé,	Asyncronous	Isabel Gonçalves	MQ	3,0						
	26/09/2025	Live session Q&A	Trainers from: Angola, Sao Tomé,	Portuguese; 1H in	Isabel Gonçalves	MQ	2,0	EN 6 - 7PT 7 - 8	4-5 PM	5 - 6 PM	6 - 7 PM		
	29/09/2025	in waste management	Trainers from: Angola, Sao Tomé,	Asyncronous	Isabel Gonçalves	MQ	3,5						
	30/09/2025	Live session Q&A	Trainers from: Angola, Sao Tomé,	Portuguese; 45' in	Isabel Gonçalves	MQ	1,5	6 - 7 PM PT 7 - 8 P	4-5 PM	5 - 6 PM	6 - 7 PM		
Module C_Circular Business Models: From Ideation to Implementation	01/10/2025	Business	Trainers from: Angola, Sao Tomé,	Asyncronous		MQ	2,5						
	02/10/2025	Live session Q&A	Live session Q&A	Portuguese; 45' in		MQ	1,5	EN 6 - 7PT 7 - 8	4-5 PM	5 - 6 PM	6 - 7 PM		
	03/10/2025	Unit 2: Circular Business Model Design	Trainers from: Angola, Sao Tomé,	Asyncronous		MQ	3,0						
	06/10/2025	Unit 3: Pitching and Next Steps in Entrepreneuship	Trainers from: Angola, Sao Tomé,	Asyncronous		MQ	3,0						
	07/10/2025	Live session Q&A	Trainers from: Angola, Sao Tomé,	Syncronous: 1H in Portuguese; 1H in English		MQ	2,0	6 - 7 PM PT 7 - 8 P	4-5 PM	5 - 6 PM	6 - 7 PM		
Module D_Micro-Entrepreneurship	08/10/2025	Unit 1: Introduction to Micro-Entrepreneurship Entrepreneurs	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
	09/10/2025	Mindset Building Entrepreneurs	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
	10/10/2025	Business is Born Live Session Q&A	Trainers from: Angola, Sao Tomé,	Asyncronous Portuguese; 45' in		AREA	1,0 1,5	EN 6 - 7PT 7 - 8	4-5 PM	5 - 6 PM	6 - 7 PM		
	13/10/2025	Legal Framework business typology	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
	14/10/2025	Accounting Planning, and Sales Techniques	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
	15/10/2025	Business Plan Live Session Q&A	Trainers from: Angola, Sao Tomé,	Asyncronous Portuguese; 45' in		AREA	1,0 1,5	6 - 7 PM PT 7 - 8 P	4-5 PM	5 - 6 PM	6 - 7 PM		
	16/10/2025	Microenterprises in São Tomé, Namibia,	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
		Unit 2: What is Frugal Innovation?	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	1,5						

Module E_Frugal & Digital Innovation for Circular Waste and Circular Economy	17/10/2025	Cost Innovation	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	1,5						
	20/10/2025	Africa	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
			Trainers from: Angola, Sao Tomé,	Asyncronous		AREA							
	21/10/2025	Challenges & Innovation Opportunities	Trainers from: Angola, Sao Tomé,	Portuguese; 45' in		AREA	1,5	EN 6 - 7PT 7 - 8	4-5 PM	5 - 6 PM	6 - 7 PM		
	22/10/2025	Accessible – Blockchain & Traceability	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
	23/10/2025	Waste Management	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA							
	24/10/2025	Analytics.	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
	27/10/2025	Technical Training	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
		Unit 10: Robotics for waste separation	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA							
	28/10/2025	Technologies for Waste Innovation	Trainers from: Angola, Sao Tomé,	Portuguese; 45' in		AREA	1,5	EN 5 - 6PT 6 - 7	4 - 5	5 - 6	6 - 7		
		- How to Design a Teaching Unit on Frugal	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	1,0						
	29/10/2025	VET Classrooms	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA	2,0						
		Across Other VET Domains (Carpentry,	Trainers from: Angola, Sao Tomé,	Asyncronous		AREA							
Module F_Public Private Partnership for TVET Managers	31/10/2025	Partnerships in TVET	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	2,5						
	10/11/2025	Stakeholders	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	2,5						
	11/11/2025	Projects	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	2,5						
	12/11/2025	Resource Mobilization	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	3,0						
	13/11/2025	Quality Assurance	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	2,0						
		Live session Q&A	Trainers from: Angola, Sao Tomé,	Portuguese; 45' in English		SWA	1,5	EN 5 - 6PT 6 - 7	4 - 5	5 - 6	6 - 7		
	14/11/2025	Partnerships	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	2,5						
	17/11/2025	Unit 7: Case Studies and Best Practices	Trainers from: Angola, Sao Tomé,	Asyncronous		SWA	2,0						
		Live session Q&A	Trainers from: Angola, Sao Tomé,	Portuguese; 45' in		SWA	1,5	EN 5 - 6PT 6 - 7	4 - 5	5 - 6	6 - 7		
							23,0						
							67,0						