

CircuWasteVETAfrica



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PRSD Action Plan for Added-Value Services

Presbyterian Relief Services and Development

Responsible: Patrick Quayson, PRSD

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1	22/06/2026	Initial Version	Patrick Quayson

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1 SECTION:

LOCAL CONTEXT AND ECOSYSTEM OVERVIEW

The circular waste management ecosystem in Ghana is evolving steadily, driven by increasing awareness of environmental sustainability, resource recovery, and the economic opportunities associated with the circular economy. The mapping conducted under Task 4.1 identified a diverse range of stakeholders operating across the waste management value chain in the Ashanti Region. Key actors include the Kumasi Compost and Recycling Plant (KCARP), which plays a central role in waste collection, sorting, composting, and recycling; TrashSmart, which provides innovative waste management and recycling solutions; the Waste Management Department of the Kumasi Metropolitan Assembly (KMA), which oversees municipal waste management activities; Sika Waste Management Co. Ltd and Zoomlion Ghana Limited, which are actively involved in waste collection, transportation, and sanitation services. Other relevant stakeholders include textile and garment enterprises such as Unijay Fashion Limited and Nana Serwaa Garment Industry and Skills College, which contribute to textile waste recovery and sustainable production practices.

Within the skills development ecosystem, TVET institutions such as Ramseyer Vocational Technical Institute (RVTI) and Aman-Sark Skills Development Institute play an important role in preparing learners for employment and entrepreneurship opportunities in the green economy. However, the mapping exercise revealed that dedicated vocational training programmes focusing on circular economy principles, waste valorisation, recycling technologies, and green entrepreneurship remain limited. Existing TVET programmes often emphasise conventional technical skills with minimal integration of sustainable waste management practices. The CircuWasteVETAfrica project seeks to address this gap by strengthening collaboration between training institutions, local authorities, waste management companies, and industry stakeholders. Through skills gap analysis, stakeholder engagement, curriculum development, and partnership-building initiatives, the project has created stronger linkages between education and industry, laying the foundation for practical training, internships, entrepreneurship development, and employment opportunities within the circular economy sector.

2 SECTION: KEY NEEDS AND SKILL GAPS IDENTIFIED

The Skills Gap Analysis conducted under Task 4.2 revealed several critical capacity gaps within the local circular economy and waste management ecosystem, highlighting the need for targeted vocational training interventions. The findings showed that while many organisations possess foundational competencies in waste management processes, environmental compliance, community engagement, and health and safety practices, there are significant deficiencies in more advanced and emerging areas. The most pressing skills gap identified was in advanced waste treatment technologies (26.8%), followed by financial management for waste projects (18.3%), policy development and implementation (16.9%), and sustainable resource management (14.1%). These findings indicate that organisations require enhanced technical expertise to improve waste processing efficiency, resource recovery, and the sustainability of waste management initiatives.

The analysis also highlighted several systemic barriers affecting skills development in the sector. Budget constraints were identified as the most significant challenge faced by organizations in addressing training needs, followed by insufficient training programmes, shortages of qualified personnel, limited access to updated information, and the rapid pace of technological change. Furthermore, data analysis and reporting emerged as one of the least-developed competencies among organisations, suggesting a need to strengthen monitoring, evaluation, and evidence-based decision-making capabilities within the sector.

Results from the stakeholder heatmap and consultations further demonstrated strong interest in sustainable business practices, digital tools for waste management, community outreach and education, and waste reduction and recycling techniques. Stakeholders also expressed willingness to contribute to curriculum development, provide guest lectures and workshops, facilitate internships, and support practical learning activities. Interviews with institutional leaders revealed a growing demand for training in entrepreneurship, digital skills, competency-based training approaches, circular economy principles, and public-private partnership development. The findings also showed that many training institutions have limited integration of digital technologies and circular waste management concepts within their existing curricula.

These findings directly informed the actions developed under Task 4.3. The internship partnerships established with organisations such as KCARP and TrashSmart respond to the identified need for practical industry exposure and stronger school-industry linkages. The Green Waste Management training programme was designed to address gaps in recycling technologies, sustainable resource management, circular economy practices, and entrepreneurship. Similarly, collaborative activities with TVET institutions and industry partners focus on strengthening curriculum relevance, promoting innovation, improving employability, and building the technical and entrepreneurial competencies required to support Ghana's transition towards a more circular and sustainable economy.

3 SECTION: CO-DESIGN PROCESS

Task 4.3 was implemented through a participatory and stakeholder-driven approach designed to translate the findings of the Skills Gap Analysis (Task 4.2) into practical and sustainable collaboration actions. The process began with a physical stakeholder workshop held at Ramseyer Vocational Technical Institute (RVTI) on 29 May 2026, followed by an online stakeholder consultation session on 16 June 2026. In addition to these formal sessions, several bilateral discussions and follow-up consultations were held with individual stakeholders to refine proposed actions and confirm commitments.

Participants included representatives from TrashSmart, the Kumasi Compost and Recycling Plant (KCARP), Aman-Sark Skills Development Institute (ASSDI), Nana Serwaa Garment Industry and Skills College, Unijay Fashion School, TVET practitioners, project partners, and other actors within the waste management and circular economy ecosystem. The stakeholder workshop provided a platform to present the CircuWasteVETAfrica project, discuss the findings of the Skills Gap Analysis, and explore opportunities for strengthening TVET-industry collaboration.

The engagement process combined presentations, plenary discussions, round-table sessions, and bilateral consultations. Stakeholders were encouraged to share their experiences, identify priority skills needs within their sectors, and propose practical interventions that could improve learner employability and strengthen circular economy competencies. Decisions regarding proposed actions were reached through consensus, with stakeholders jointly assessing the feasibility, relevance, and potential impact of each intervention. Particular attention was given to ensuring that all proposed actions responded directly to skills gaps identified under Task 4.2.

The outputs of the process included six co-designed action plans covering industry placements, internships, work-based learning, innovation and entrepreneurship, institutional knowledge exchange, and textile waste upcycling. These actions were validated through follow-up consultations and form the basis for future collaboration agreements and Memoranda of Understanding under Task 4.4.

Where stakeholders were unable to attend the workshop or where additional technical clarification was required, inputs were gathered through direct meetings, telephone discussions, and electronic communication. This ensured that the Action Plan reflected the perspectives and commitments of all relevant partners and strengthened stakeholder ownership of the proposed activities.

4 SECTION: ACTION PLAN TABLE

TABLE 1 : ACTION 1 TRASHSMART

Action Title: Industry placement & circular economy skills training — TrashSmart & Ramseyer VTI	
Objective	To provide Ramseyer VTI Circular Economy students with hands-on industry training while building TrashSmart's operational workforce in waste processing and brick production.
Description	Ramseyer VTI students are placed at TrashSmart's Kumasi facility for practical training in plastic waste segregation, sorting, and recycled brick production. TrashSmart supervises students and provides daily transport and meal stipends. The school nominates students and assigns a liaison.
Partners involved	Ramseyer Vocational Technical Institute (VET centre) and TrashSmart (industry partner), both based in Kumasi and EWB-Netherlands with other Dutch universities.
Roles and Responsibilities	TrashSmart leads — hosts, supervises, and funds stipends. Ramseyer VTI contributes — nominates students and coordinates scheduling.
Timeline	Start: Q3 2026 (upon MoU signing). Frequency: one cohort per semester. Duration: ongoing.
Resources needed	TrashSmart operations supervisor; school liaison officer; processing facility and PPE; student stipends (transport and meals)
Expected outputs/outcomes	Students trained and certified in waste processing skills; stronger school-to-industry pathway; increased TrashSmart operational capacity.
Indicators of success	Number of students completing placement, student satisfaction rating, and percentage assessed as competent in at least two operational areas
Link to partnership formalisation (if applicable)	Yes — a Memorandum of Understanding (MoU) will be signed between both parties before the first cohort begins.

TABLE 2 : ACTION 2 TRASHSMART

Action Title: Circular Product Innovation Hub – TrashSmart & Ramseyer VTI	
Objective	To promote innovation, entrepreneurship, and circular economy product development by enabling students to design and prototype marketable products from recycled waste materials in collaboration with TrashSmart.
Description	Ramseyer VTI students work with TrashSmart to identify recyclable waste streams and develop innovative products with commercial potential.

Partners involved	Ramseyer Vocational Technical Institute (VET centre), TrashSmart (industry partner), local entrepreneurs, business development service providers, and CircuwasteVETAfrica partners.
Roles and Responsibilities	TrashSmart provides waste materials, technical guidance, industry mentorship, and prototype testing support. Ramseyer VTI coordinates student participation, training delivery, supervision, and assessment. External stakeholders provide feedback on product viability and market opportunities.
Timeline	Start: Q4 2026. Frequency: One innovation challenge per academic year. Duration: Ongoing.
Resources needed	Recyclable materials, workshop space, design tools, sewing and fabrication equipment, trainer time, mentoring support, exhibition space, and seed funding for prototypes.
Expected outputs/outcomes	Development of innovative products from recycled materials; increased student creativity and entrepreneurship skills; establishment of student-led green enterprises; strengthened collaboration between education and industry.
Indicators of success	Number of products developed; number of student teams participating; number of prototypes reaching market testing stage; student satisfaction; number of entrepreneurship opportunities generated.
Link to partnership formalisation (if applicable)	Yes – activities will be incorporated into the Memorandum of Understanding (MoU) between Ramseyer VTI and TrashSmart as part of their long-term collaboration framework.

TABLE 3 : ACTION 1 KCARP

Action Title: Industry field visits & eco tourism	
Objective	Expose students to the best waste recycling practices and hands-on practical knowledge
Description	Students visit sites to learn, observe and know real-world waste management processes, collection, sorting, recycling, etc
Partners involved	VET centre (RVTI)/KCARP
Roles and Responsibilities	Industry experts take students through various stages of recycling and waste collection. VET Centre makes students available for site visit
Timeline	TBD (Anytime new students may be available subsequently)
Resources needed	Technical Staff from KCARP, Tour guides, PPEs, Source of transportation for students

Expected outputs/outcomes	All learners get to understand the waste management value chain, recycling and waste collection methods as well as basic equipment involved
Indicators of success	Increased TVET-Industry collaboration and 80%+ students (per cohort) having practical experience in the waste management industry
Link to partnership formalisation (if applicable)	Mostly requires a formal letter to the industry

TABLE 4 : ACTION 2 KCARP

Action Title: Internship and Work-Based Learning Programme – KCARP & Ramseyer VTI	
Objective	To provide Ramseyer VTI students with structured internship and work-based learning opportunities at the Kumasi Compost and Recycling Plant (KCARP), enabling them to gain practical experience in waste management, recycling operations, and circular economy practices.
Description	Selected Ramseyer VTI students are placed at KCARP for internship and industrial attachment programmes. During the placement, students rotate through key operational units including waste collection, sorting, composting, recycling, quality control, and environmental health and safety. KCARP supervisors provide mentorship and practical training while the institute monitors student progress and learning outcomes.
Partners involved	Ramseyer Vocational Technical Institute (VET centre), Kumasi Compost and Recycling Plant (KCARP), and CircuWasteVETAfrica partners.
Roles and Responsibilities	KCARP hosts interns, assigns supervisors, provides workplace orientation, and facilitates practical learning experiences. Ramseyer VTI identifies and prepares students, coordinates placements, conducts monitoring visits, and evaluates internship performance. Students are responsible for complying with workplace rules and completing assigned tasks and reports.
Timeline	Start: Q3 2025 (upon formalisation of partnership). Frequency: Two internship cohorts per year. Duration: 4–8 weeks per cohort.
Resources needed	Internship supervisors, personal protective equipment (PPE), transportation support, training materials, monitoring and evaluation tools, and student logbooks.
Expected outputs/outcomes	Increased practical competencies in waste management and recycling operations; enhanced employability of students; stronger school-to-industry linkages; improved understanding of circular economy practices; and creation of a talent pipeline for the waste management sector.
Indicators of success	Number of students placed on internship; percentage of students successfully completing placements; employer satisfaction ratings; number of students receiving internship certificates; and number of students progressing to employment or further training opportunities.

Link to partnership formalisation (if applicable)	Yes – the internship programme will be formalised through a Memorandum of Understanding (MoU) between Ramseyer VTI and KCARP to ensure sustainability and continuous collaboration.
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TABLE 5: ACTION 1 AMAN-SARK SKILLS DEVELOPMENT INSTITUTE

Action Title: TVET Knowledge Exchange and Capacity Building Partnership – Ramseyer VTI & Aman-Sark Skills Development Institute	
Objective	To strengthen the capacity of both institutions through knowledge sharing, joint training activities, curriculum enhancement, and the exchange of best practices in circular economy and green skills education.
Description	Ramseyer VTI and Aman-Sark Skills Development Institute collaborate to organise joint workshops, trainer exchange programmes, peer learning sessions, and student innovation activities. The institutions share training materials, instructional approaches, and practical experiences related to waste management, recycling technologies, entrepreneurship, and circular economy practices. Joint exhibitions and skills competitions are organised to showcase learner projects and encourage innovation.
Partners involved	Ramseyer Vocational Technical Institute (RVTI), Aman-Sark Skills Development Institute (ASSDI), industry stakeholders, and CircuWasteVETAfrica project partners.
Roles and Responsibilities	RVTI and ASSDI jointly coordinate activities, nominate trainers and students for exchange programmes, share training resources, and host capacity-building events on a rotational basis. Both institutions contribute expertise, facilities, and personnel to ensure the successful implementation of planned activities.
Timeline	Start: Q4 2025. Frequency: Quarterly exchange activities and annual joint skills exhibition.
Resources needed	Training facilities, transportation for exchange visits, training manuals, workshop materials, facilitator time, communication materials, and monitoring tools.
Expected outputs/outcomes	Improved trainer competencies; strengthened institutional collaboration; enhanced quality of green skills training; increased learner exposure to best practices; harmonised approaches to circular economy education; and stronger networks among TVET institutions.
Indicators of success	Number of joint activities conducted; number of trainers and learners participating in exchange programmes; number of training materials shared or adapted; participant satisfaction levels; and evidence of improved training delivery practices.
Link to partnership formalisation (if applicable)	Yes – the collaboration will be formalized through a Memorandum of Understanding (MoU) between Ramseyer VTI and Aman-Sark Skills

	Development Institute to support long-term cooperation in TVET and green skills development.
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TABLE 6: ACTION 1 NANA SERWAA GARMENT INDUSTRY & SKILLS COLLEGE AND UNIJAY FASHION SCHOOL

Action Title: Textile Waste Upcycling and Skills Development Partnership – Nana Serwaa Garment Industry and Skills College & Ramseyer VTI	
Objective	To strengthen the capacity of both institutions through knowledge sharing, joint training activities, curriculum enhancement, and the exchange of best practices in circular economy and green skills education.
Description	Ramseyer VTI and Aman-Sark Skills Development Institute collaborate to organise joint workshops, trainer exchange programmes, peer learning sessions, and student innovation activities. The institutions share training materials, instructional approaches, and practical experiences related to waste management, recycling technologies, entrepreneurship, and circular economy practices. Joint exhibitions and skills competitions are organised to showcase learner projects and encourage innovation.
Partners involved	Ramseyer Vocational Technical Institute (RVTI), Aman-Sark Skills Development Institute (ASSDI), industry stakeholders, and CircuWasteVETAfrica project partners.
Roles and Responsibilities	RVTI and ASSDI jointly coordinate activities, nominate trainers and students for exchange programmes, share training resources, and host capacity-building events on a rotational basis. Both institutions contribute expertise, facilities, and personnel to ensure the successful implementation of planned activities.
Timeline	Start: Q4 2025. Frequency: Quarterly exchange activities and annual joint skills exhibition.
Resources needed	Training facilities, transportation for exchange visits, training manuals, workshop materials, facilitator time, communication materials, and monitoring tools.
Expected outputs/outcomes	Improved trainer competencies; strengthened institutional collaboration; enhanced quality of green skills training; increased learner exposure to best practices; harmonised approaches to circular economy education; and stronger networks among TVET institutions.
Indicators of success	Number of joint activities conducted; number of trainers and learners participating in exchange programmes; number of training materials shared or adapted; participant satisfaction levels; and evidence of improved training delivery practices.
Link to partnership formalisation (if applicable)	Yes – the collaboration will be formalised through a Memorandum of Understanding (MoU) between Ramseyer VTI and Aman-Sark Skills

	Development Institute to support long-term cooperation in TVET and green skills development.
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5 SECTION: ROADMAP AND NEXT STEPS

The implementation roadmap foresees a progressive deployment of the proposed actions between 2026 and 2027.

Key milestones include:

- June 2026: Validation of T4.3 findings;
- July 2026: Finalisation of Action Plan;
- September 2026: Launch of competence review mechanism;
- October 2026: Start of internship and work-based learning activities;
- November 2026: Trainer capacity-building sessions begin;
- M22: Public-Private Partnerships Workshop under T4.4;

Following M22: Signature of MoUs and formalisation of institutional partnerships.

The roadmap aims to transform collaborative actions into formal long-term cooperation mechanisms.