

GROW: Green Construction Waste Remediation and Recycling In Vocational Training in Sub-Saharan Africa



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Deliverable 2.1 Training Needs Report

For Trainers in the Green Construction Waste Sector

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Abstract	This deliverable presents the results of the training needs assessment carried out under Task 2.1 of the GROW project. It identifies the main skills gaps, training needs and labour market expectations related to construction and demolition waste (CDW) management in Nigeria and Mozambique. The report is based on a mixed-method assessment combining online questionnaires, semi-structured interviews and in-country stakeholder workshops with TVET institutions, public authorities, companies, waste management actors and sector representatives. The findings provide an evidence base for the development of the GROW training curriculum under WP3 and its pilot implementation under WP4 , with particular attention to practical skills, green and digital competences, trainer upskilling, employability, inclusion and cooperation with industry.
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DISSEMINATION LEVEL		
PU	Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project's page)	PU
SEN	Classified, information as referred to in Commission Decision 2001/844/EC	
CLASSIFIED R-EU / EU-R	EU RESTRICTED under the Commission Decision No2015/ 444	
CLASSIFIED C-UE / EU-C	EU CONFIDENTIAL under the Commission Decision No2015/ 444	
CLASSIFIED S-UE / EU-S	EU SECRET under the Commission Decision No2015/ 444	

* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

DATA: Data sets, microdata, etc.

DMP: Data management plan

ETHICS: Deliverables related to ethics issues

SECURITY: Deliverables related to security issues

OTHER: Software, technical diagram, etc.

1. EXECUTIVE SUMMARY

This Deliverable presents the results of the training **needs assessment** carried out under **Task 2.1** of the **GROW** project. Its purpose is to identify the main **skills gaps**, **training needs**, and **labour market expectations** related to **construction and demolition waste (CDW) management** in **Nigeria** and **Mozambique**, in order to provide a practical basis for the design of the training programme under **WP3** and its pilot implementation under **WP4**. The report therefore acts as an operational bridge between the initial assessment phase, and subsequent curriculum development and delivery stages of the project.

The assessment followed a **mixed-method approach**, combining **online questionnaires** with **semi-structured interviews**. This approach made it possible to gather both **comparable quantitative data** and more in-depth **qualitative insights** from relevant stakeholders. The process covered **TVET institutions**, **public authorities**, and **industry actors** involved in, or linked to, the management of construction and demolition waste. The data collected was then analysed through **triangulation** and **cross-analysis**, allowing the project to identify the most relevant training priorities and to formulate evidence-based recommendations for the next work packages. The findings confirm that **CDW management** is a **highly relevant but still insufficiently structured field** in both target countries. Across the consultations, stakeholders consistently pointed to the **lack of specialised training**, the **limited practical preparation of graduates**, and the **weak connection between training provision and emerging labour market needs**. In general terms, the assessment shows that future training should not focus only on technical knowledge, but also on **practical application**, **environmental awareness**, **health and safety**, **digital tools**, and **market-oriented competences**.

In **Nigeria**, the needs assessment highlights a context marked by **reactive compliance**, **limited formalisation**, and a strong dependence on **on-the-job learning**. The consultations with **LAWMA**, private sectors, and TVET providers show a clear need for training in areas such as **on-site waste sorting**, **safe handling of materials**, **environmental compliance**, **health and safety procedures**, **quality control**, **recycling and valorisation processes**, communication skills and **digital reporting and monitoring tools**. At the same time, Nigerian TVET institutions show potential to contribute to this field, but still require dedicated **equipment**, updated **teaching content**, and closer **cooperation with industry** in order to deliver CDW-related training effectively.

In **Mozambique**, the assessment shows that there is already some degree of **environmental awareness** within the institutions consulted, but **specific training on construction and demolition waste** remains very limited. Both project's partners, **Instituto Superior Don Bosco de Maputo (ISDB)** and **Universidade Zambeze UNIZAM**, confirmed the relevance of the topic, while also making clear that the future training offer should begin with **basic concepts**, the **national legal and institutional framework**, and **practical examples adapted to the local context**. The evidence also suggests that the Mozambican training approach should pay particular attention to **community awareness**, **reuse and valorisation of materials**, **applied teaching methods**, and stronger links with **companies**, **municipal actors**, and other relevant stakeholders.

A common conclusion across both countries is that the future GROW training programme should combine **technical skills**, **digital skills**, and **transversal competences**. The priority areas identified include **waste identification and classification**, **sorting and safe handling**, **reuse**, **recycling**, **environmental compliance**, **digital monitoring and reporting**, **circular economy approaches**, and **green entrepreneurship**. In parallel, the assessment highlights the importance of **trainer upskilling**, **practice-based learning methods**, and the active involvement of **industry and public stakeholders** to ensure that the training developed is both relevant and feasible.

Overall, this report concludes that there is a **clear opportunity** for GROW to contribute to the development of a more **relevant**, **inclusive**, and **market-oriented** TVET offer in the field of **construction and demolition waste management**. By responding directly to the needs identified through the assessment, the project can support the creation of training pathways that improve **employability**, strengthen **institutional capacity**, and contribute to the wider objectives of **green transition**, **circular construction**, and **sustainable skills development** in **Sub-Saharan Africa**.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADDIE – Analyse, Design, Develop, Implement, Evaluate

AREA – AREA DI MAURO ADRIANO SAS

C&D – Construction and Demolition

CBVET – Capacity Building in Vocational Education and Training

CDDW – Construction, Demolition and Disaster Waste

CDW – Construction and Demolition Waste

CSR – Corporate Social Responsibility

D – Deliverable

D2.1 – Deliverable 2.1

ENG – English

ERASMUS+ – Erasmus+ Programme

ESCO – European Skills, Competences, Qualifications and Occupations

EU – European Union

FSD – Field of Skills and Dreams VTE Academy

GIS – Geographic Information System

GPS – Global Positioning System

GROW – Green Waste Construction waste remediation and recycling Vocational Training in SSA

H&S – Health and Safety

ISDB – Instituto Superior Dom Bosco

LASUBEB – acronym used in project-related material

LASTVEB – Lagos State Technical and Vocational Education Board

LAWMA – Lagos Waste Management Authority

LGEA – acronym used in project-related material

M – Project Month

MQ – Mínimos Quadrados

MSME – Micro, Small and Medium Enterprise

MSMEs – Micro, Small and Medium Enterprises

MUNDUS – Asociación Mundus - Un Mundo A Tus Pies

NBTE – Nigerian Board of Technical Education

NECA – Nigeria Employers’ Consultative Association

ODS – Objetivos de Desenvolvimento Sustentável

PDF – Portable Document Format

POP – Plaster of Paris

PPP – Public-Private Partnership

PT – Portuguese

PU – Public

R – Report

RCD – Resíduos de Construção e Demolição

SDGs – Sustainable Development Goals

SEN – Sensitive

SSA – Sub-Saharan Africa

T – Task

T2.1 – Task 2.1

ToT – Training of Trainers

TVET – Technical and Vocational Education and Training

UNIZAM – Universidade Zambeze

VET – Vocational Education and Training

WBL – Work-Based Learning

WP – Work Package

2. INTRODUCTION

2.1 Purpose of the report

The purpose of this report is to present the results of the **training needs assessment** carried out under **Task 2.1** of the **GROW** project and to translate results into practical guidance for the next phases of implementation. More specifically, the report aims to identify the main **skills gaps**, **training priorities**, and **institutional needs** related to **construction and demolition waste (CDW) management** in the target countries, so that the project can develop a training curriculum that is relevant, feasible, and aligned with labour market needs. In this sense, the report is intended as a **practical reference document** for the design of the course and the preparation of the pilot phase, rather than as a purely descriptive exercise.

2.2 Link with Task 2.1 and project objectives

Task 2.1 is defined in the Description of Action (DoA) as a **TVET school needs assessment** based on a **competency analysis** of participating institutions, supported by a methodology that creates spaces for exchange between European and African partners and generates evidence to support the development of activities under **WP3** and **WP4**. The application also specifies that this process should include interaction with school management, transversal offices, and teachers, as well as the development of tools to analyse technical competences in the sector and provide a quantitative basis for future action.

In line with this framework, the present report contributes directly to the broader objectives of GROW, namely strengthening **TVET capacity** in **Nigeria** and **Mozambique**, improving the relevance of training in the field of **green construction and waste management**, and supporting the development of a more demand-driven response to emerging skills needs in the sector. By identifying the competences that are currently missing, the areas where institutions require support, and the profiles most needed by the labour market, the report provides the evidence base needed to shape the future curriculum and training methodology.

2.3 Scope of the needs assessment

The needs assessment covered a selected group of **TVET institutions**, **public authorities**, and **industry stakeholders** connected to construction, waste management, and vocational training in the two target countries. In **Nigeria**, the process included consultations with **LAWMA**, TVET actors, and private-sector stakeholders. In **Mozambique**, the assessment focused on **ISDB** in Maputo and **UNIZAM** in Beira, with attention to their current training capacity, their level of familiarity with CDW-related issues, and their potential role in future course delivery.

The scope of the assessment was intentionally focused on collecting information that would be directly useful for **course development**. For that reason, particular attention was given to: existing or missing training provision; priority **technical**, **digital**, and **transversal skills**; trainer and institutional support needs; cooperation with companies and public actors; and barriers affecting implementation, including equipment, awareness, and inclusion challenges. The assessment therefore does not aim to provide a complete sector study, but rather a targeted and operational analysis to support the design of the future **GROW training programme**.

3. METHODOLOGY

3.1 Assessment approach

The needs assessment was carried out using a **simplified mixed-method approach**, combining **quantitative** and **qualitative** data collection. This approach was selected in order to obtain both a broad overview of training needs and more detailed evidence from key stakeholders directly involved in **TVET**,

construction, and **waste management**. The methodology was designed to generate practical findings that could be directly used for the development of the GROW training programme under **WP3** and **WP4**.

The assessment focused on identifying **skills gaps**, **training priorities**, and **labour market expectations** in relation to **construction and demolition waste management** in **Nigeria** and **Mozambique**. Rather than conducting a broad sector study, the process was deliberately oriented towards collecting evidence that would support **curriculum design**, **trainer preparation**, and the identification of priority modules and competences for the future course.

3.2 Data collection tools

Two main tools were used for data collection: online questionnaires and semi-structured interviews. The questionnaires were designed to collect comparable information from TVET institutions, public authorities and industry-related stakeholders on existing training provision, priority skills, digital needs, cooperation opportunities and barriers affecting the introduction of CDW-related training. In Nigeria, the process gathered **6 responses from TVET schools and training institutions** and **5 responses from public and private organisations linked to the construction, waste management and related industry sectors**. These questionnaire results were complemented by semi-structured interviews conducted in Nigeria with **LAWMA representatives, Worthrust Resource Limited, the Industrial Skills Training Centre in Kano and Honeytreat Trade Academy**, as well as by interviews carried out in Mozambique with **ISDB, UNIZAM and COSEL**. This combination of quantitative and qualitative tools allowed the project to compare institutional and labour market perspectives while also capturing more detailed evidence on operational challenges, skills gaps and training priorities in both target countries.

Separate questionnaires were administered for **TVET institutions** and the **companies/public-sector actors**, allowing for the capture of different perspectives of stakeholders in a structured way. Follow up interviews were used to deepen and validate the questionnaire findings in a **semi-structured format**, which made it possible to explore institutional realities, operational challenges, and future expectations in greater detail while maintaining a common template across the consultations. This qualitative component was particularly important to understand the different levels of sector development and institutional readiness in the target countries.

In addition to **questionnaires** and **semi-structured interviews**, two **in-country stakeholder workshops** were organised to validate and enrich the needs assessment findings. In Nigeria, **LAWMA hosted a workshop on 14 April 2026 at the LCCI Conference and Exhibition Center in Alausa**, bringing together representatives from the project consortium, waste management actors, the construction sector, private sector organisations, academia, TVET providers and other relevant stakeholders. The workshop included presentations on **construction and demolition waste management in Lagos**, the **role of TVET in skills development**, industry perspectives on **modern construction and skills needs**, questionnaire administration, and **breakout sessions with industries, regulators, artisans and waste workers**. In Mozambique, **UNIZAM organised a workshop on 24 April 2026 at the Matacuane Campus in Beira**, focused on the **construction waste value chain** and the **assessment of technical competence needs**. This workshop included a presentation of the GROW project, a technical analysis of the construction waste value chain, and a dedicated session on the identification of technical skills needs. These workshops provided an additional **participatory layer** to the methodology, allowing the project to test preliminary findings with sector stakeholders, collect contextual feedback, and strengthen the relevance of the recommendations for **curriculum development** and **pilot implementation**.

3.3 Target groups and stakeholders consulted

The assessment involved stakeholders from the CDW sector that will be involved in the future implementation of the GROW training programme. These included **TVET institutions**, **public authorities**, and **industry actors** in construction and waste management sectors. The purpose was to gather complementary views from those responsible for training delivery, those regulating or managing waste, and those representing current or potential labour market demand.

In **Nigeria**, the consultations included the Lagos Waste Management Authority (**LAWMA**), private-sector stakeholders such as **Worthrust Resource Limited**, and TVET-related actors including **Industrial Skills Training Center, Kano** and **Honeytreat Trade Academy**. In **Mozambique**, the qualitative assessment focused on **ISDB in Maputo** and **UNIZAM in Beira**. Across these institutions, the process involved **management staff, trainers, teachers, technical staff and sector representatives**. In addition, the assessment included interviews with **companies and organisations active in the waste management sector**, such as **COSEL – Colecta Selectiva** and **Repensar Moçambique**, whose contributions helped to better understand current practices, operational challenges, value chain dynamics and skills needs related to waste collection, separation, reuse, recycling and construction waste management in the Mozambican context.

3.4 Data analysis and triangulation

The data analysis was based on a process of **cross-analysis** between the quantitative and qualitative evidence collected. Questionnaire responses provided a comparative overview of recurring needs and priorities, while interviews helped explain those patterns, validate them, and add context-specific detail. This combination allowed the project to distinguish between **common trends** across countries and **specific needs** linked to each institutional and local context.

The assessment applied a basic form of **triangulation**, comparing findings from different sources in order to strengthen the reliability of the conclusions. In practical terms, this meant analysing where questionnaire data, stakeholder interviews, and institutional observations converged around the same issues, such as the need for stronger practical training, better trainer preparation, closer links with industry, and greater attention to environmental compliance, digital tools, and circular economy skills. The resulting analysis was then used to formulate recommendations for **WP3** and **WP4**.

3.5 Limitations of the assessment

As a targeted project assessment, this process has some limitations that should be acknowledged. First, the assessment was based on a **selected sample of institutions and stakeholders**, and therefore does not aim to represent the full construction or waste management sectors in either country. Its purpose was to gather sufficiently relevant evidence to guide the design of the GROW training programme.

Second, the level of development of **CDW management** differs significantly between stakeholders and between countries. In some cases, interviewees were already familiar with waste management practices, while in others the topic was still emerging and required a more introductory discussion. This means that the evidence collected reflects different starting points and levels of maturity.

Finally, some questionnaire responses were necessarily brief, which made the qualitative interviews especially important to clarify priorities and provide operational depth. Despite these limitations, the combined methodology generated a sufficiently solid basis for the next stages of curriculum development and pilot preparation.

4. PROFILE OF PARTICIPATING INSTITUTIONS AND STAKEHOLDERS

4.1 TVET institutions involved

The needs assessment involved a selected group of **TVET and higher education institutions** with different profiles and levels of experience in relation to **construction training, environmental management, and waste-related topics**. Their participation was essential to understand current institutional capacity, existing training gaps, and the feasibility of introducing or strengthening **CDW-related training** within the framework of the GROW project.

In **Nigeria**, the assessment included consultations with **Industrial Skills Training Center, Kano** and **Honeytreat Trade Academy in Lagos**. These institutions provided insights into the current state of construction-related training, the level of practical readiness of teachers and learners, and the main constraints affecting the integration of new content related to **construction and demolition waste management**. Questionnaire evidence from Nigerian TVET actors also helped identify barriers such as lack of equipment, low awareness, limited industry cooperation, and the need for stronger trainer upskilling.

In **Mozambique**, the assessment focused on two key institutions: **Instituto Superior Dom Bosco (ISDB)** in Maputo and **Universidade Zambeze (UNIZAM)** in Beira. At **ISDB**, the consultations showed that the institution already has a transversal environmental dimension in its training offer, but no specific course on construction and demolition waste management. At **UNIZAM**, the interviews confirmed the relevance of the topic and highlighted the opportunity to connect future training with local realities, especially in relation to sustainability, reuse of materials, and applied construction practices. In both cases, the institutions showed interest in participating in the future development and implementation of the GROW course.

4.2 Industry and public sector stakeholders involved

In addition to the training institutions, the needs assessment involved **public authorities** and **industry stakeholders** whose perspectives are critical for ensuring that the future course is aligned with **labour market needs** and operational realities. Their participation made it possible to identify the technical skills currently missing in the sector, the type of practical competences expected from future learners, and the forms of cooperation that may be feasible between training providers and external actors.

A central stakeholder in **Nigeria** was the **Lagos Waste Management Authority (LAWMA)**, which played a particularly important role in the consultations. As the public authority responsible for waste management regulation and implementation in Lagos State, LAWMA provided detailed information on current procedures, regulatory challenges, operational gaps, and the skills required for better CDW management. The consultations involved several LAWMA representatives directly linked to construction and demolition waste issues, including managerial, technical, and training staff.

The assessment also included private-sector input, especially from **Worthrust Resource Limited**, a company active in waste recycling and consultancy linked to construction and demolition waste management. Through this consultation, the project gathered evidence on market realities, workforce limitations, and the need for practical and career-oriented training. In addition, questionnaire responses from industry and public-sector actors provided complementary information on operational challenges, digital needs, and willingness to cooperate with TVET institutions through internships, site visits, guest lectures, curriculum co-design, and pilot activities.

In Mozambique, the assessment placed more emphasis on **institutional consultations** than on a broad set of company interviews at this stage. However, the process also included interviews with **sector organisations active in waste management and environmental education**, notably **COSEL – Colecta Selectiva**, a Mozambican waste management startup working on selective collection, waste monitoring, recycling, reuse and environmental awareness, and **Repensar Moçambique**, an organisation engaged in environmental education, community awareness and sustainability-related activities. These contributions helped to complement the institutional perspective provided by ISDB and UNIZAM and clearly highlighted the importance of involving **construction companies, waste management actors, environmental organisations** and **relevant local authorities** in the next stages of the project. Their involvement will be particularly important to strengthen the **employability dimension** of the future course, validate the expected learner profiles, and ensure that the training responds to real operational needs in the Mozambican waste and construction sectors.

4.3 Country coverage: Nigeria and Mozambique

The needs assessment was carried out in the two GROW target countries: **Nigeria** and **Mozambique**. This country coverage reflects the project's strategic focus on supporting the development of more

relevant and inclusive **TVET responses** to the challenges of **construction and demolition waste management** in two contexts with different institutional realities and levels of sector development.

In **Nigeria**, the evidence collected points to a context where waste management structures and regulatory actors are present, but where **CDW practices remain weakly formalised**, practical skills are insufficient, and stronger links are needed between public authorities, companies, and training institutions. In **Mozambique**, the assessment shows a context where environmental awareness exists, but where **specific CDW training is still at a very early stage**, making it necessary to build a stronger foundation before moving towards more advanced technical content. This contrast is important for the project, as it confirms that the future GROW course should combine **shared core modules** with sufficient flexibility to respond to different national realities.

Overall, the two-country coverage allowed the project to identify both **common needs** and **context-specific priorities**, which will be particularly useful for the next phase of curriculum development. It also confirmed that any training developed under GROW should be practical, locally relevant, and built in dialogue with the institutions and stakeholders who will ultimately use, deliver, or benefit from it.

5. FINDINGS – NIGERIA

5.1 Key findings from LAWMA interviews

The interviews with **LAWMA** confirm that **construction and demolition waste management** in Lagos operates within an existing regulatory framework, but that implementation remains largely **reactive**. Developers are expected to notify LAWMA before construction or demolition activities and to submit a waste management plan, yet in practice many operators do not comply unless enforcement measures are applied. This means that waste management often starts late, after irregular practices have already taken place, including illegal dumping and poor on-site control.

The interviews also show that LAWMA has personnel directly involved in this field, but that much of their knowledge is acquired through **internal induction, departmental rotation, and on-the-job experience**, rather than through structured sector-specific training. As a result, there is a clear gap between the operational demands of the sector and the preparation of new graduates entering the workforce. LAWMA representatives consistently highlighted the need for stronger practical competences linked to **environmental compliance, health and safety, waste sorting, material handling, basic reporting, and digital data collection**.

Another important finding is that the current system is still weak in terms of **recycling and valorisation**. In many cases, valuable materials are removed informally before LAWMA intervenes, while the remaining debris is mainly transported to landfill sites. This indicates that the sector still has limited capacity to move from basic evacuation practices towards a more structured **circular economy approach**, and therefore requires training that goes beyond collection and disposal and includes reuse, recovery, quality control, and operational planning.

5.2 Key findings from TVET schools and companies

The consultations conducted by Apodissi with **TVET institutions from both the northern and southern regions of Nigeria**, and construction **companies** showed that there is interest in the topic of **CDW management**, but that current training provision remains very limited and fragmented. The institutions consulted have experience in construction-related fields and, in some cases, address environmental or waste-related issues as part of broader training content. However, they do not yet offer structured training specifically focused on **construction and demolition waste management**.

The company perspective, especially from **Worhtrust**, confirms that there is a growing need for workers with practical knowledge of waste sorting, recycling, and reuse in construction-related environments. At the same time, companies report difficulties in finding people with both the **technical competences** and

the **professional motivation** needed to remain in the sector. The interviews suggest that many young people enter waste-related activities informally and temporarily, rather than seeing them as part of a long-term professional pathway. This weakens workforce stability and limits the availability of workers who can be progressively upskilled.

The evidence from questionnaires also points to a common set of institutional constraints. Nigerian TVET actors highlighted barriers such as **lack of equipment and workshop facilities, low awareness or low demand, limited cooperation with industry**, and challenges linked to digital readiness. At the same time, both TVET institutions and external stakeholders expressed openness to cooperation through **internships, site visits, guest lectures, joint projects**, and other forms of practical collaboration that could strengthen the labour market relevance of the future GROW course.

5.3 Main skills gaps identified

Across the Nigerian evidence, the main skills gaps are clearly concentrated in the area of **practical sector-specific competences**. Stakeholders repeatedly stressed that graduates may have some theoretical background, but often lack the applied skills required to work effectively in real **construction waste management environments**. This is particularly visible in areas such as **on-site waste sorting, safe handling of materials, environmental compliance procedures, reporting to authorities**, and **day-to-day operational decision-making**.

Another major gap concerns the limited availability of competences related to **recycling and valorisation processes**. The sector still appears to be more focused on disposal than on circular use of materials, which means that technical knowledge on material recovery, reuse potential, process control, and quality assurance is not yet sufficiently developed. This gap affects both operational staff and the training system that should prepare future workers.

The evidence also points to shortages in **digital and transversal skills**. Stakeholders mentioned the need for better capacity in **digital reporting, tracking quantities and flows, basic dashboards and spreadsheets**, and in some cases **GIS/mapping** or smart monitoring tools. In parallel, there is a need for stronger **health and safety awareness, work discipline, environmental responsibility**, and, in some cases, **entrepreneurial mindsets** that can support green business development in the sector.

5.4 Main training needs identified

The evidence collected in Nigeria suggests that the future GROW training offer should prioritise a set of practical and market-oriented areas. First, there is a clear need for training on **waste identification, classification, sorting, and safe handling** in construction and demolition contexts. These competences appear consistently across LAWMA, company interviews, and questionnaire responses, and should be treated as core building blocks of the course.

Second, training should address **recycling, reuse, and valorisation** more explicitly, so that learners understand not only how to manage waste safely, but also how to recover value from materials and support more circular construction practices. In the Nigerian context, this is particularly important because current systems still show weak formalisation and limited technical depth in these areas.

Third, the future course should include content on **environmental compliance, health and safety, and digital monitoring and reporting tools**, as these were repeatedly identified as priority needs by both institutional and labour market actors. These elements are essential to make the training relevant to operational realities and to improve employability. Finally, the Nigerian evidence also suggests that the course should include stronger components related to **industry exposure, practice-based learning**, and, where relevant, **green entrepreneurship**, in order to connect training more directly with real opportunities in the sector.

6. FINDINGS – MOZAMBIQUE

6.1 Key findings from ISDB interviews

The interviews conducted at **ISDB** show that the institution already has a certain level of **environmental awareness** and some experience in addressing sustainability-related issues through transversal training. However, the evidence also makes clear that there is **no specific training offer** focused on **construction and demolition waste management**, and that the topic remains at an early stage in terms of institutional familiarity and practical application.

A central conclusion from the ISDB consultations is that, in the Mozambican context, the future course should **start from the basics**. Interviewees stressed the need to introduce key concepts related to waste management, explain the **legal and regulatory framework**, identify the relevant authorities and stakeholders, and gradually build knowledge before moving into more advanced technical content. This reflects the fact that, although the topic is considered relevant and timely, the sector is still not sufficiently structured to support a highly specialised course from the outset.

The interviews also highlight that the course should not be limited to technical content alone. At ISDB, stakeholders pointed to the importance of **awareness-raising, community engagement**, and the broader educational role that the institution can play in promoting more sustainable practices. In this sense, the future course should combine technical foundations with a stronger emphasis on **environmental responsibility, behaviour change**, and local relevance.

Another relevant finding is that ISDB appears institutionally open to innovation. The interviews indicate that teachers are motivated, the institution has previous experience with **online learning**, and there is a positive attitude towards the development of new training content. At the same time, one of the key challenges identified is the need to involve **companies** and external actors, since the future employability dimension of the course will depend on stronger connections with the labour market.

6.2 Key findings from UNIZAM interviews

The interviews at **UNIZAM** confirm that the topic of **construction and demolition waste management** is considered relevant and has growing importance in the Mozambican context, particularly in relation to **sustainability, urban management**, and the more efficient use of materials. However, as in the case of ISDB, the consultations also show that there is currently **no dedicated training provision** in this area, which confirms the existence of a real training gap.

A particularly strong message from the UNIZAM interviews is that the future course should be closely linked to the **local context of Beira** and to the real challenges faced in construction and waste management. Interviewees stressed that the training should not be overly abstract or imported from other contexts without adaptation. Instead, it should use local examples, reflect existing practices, and connect the topic of waste management with practical issues such as **reuse of materials, urban cleanliness, basic recovery practices**, and applied construction solutions.

The UNIZAM evidence also suggests that the training should place strong emphasis on **reuse and valorisation**, as interviewees repeatedly underlined the importance of helping learners see waste not only as a disposal problem but also as a potential **resource with economic value**. This is especially relevant in a context where awareness is still limited and where demonstrating the practical and economic usefulness of reuse can improve both acceptance and future employability.

In addition, the interviews indicate that future training should combine **technical content** with **pedagogical strategies** that allow trainers and learners to work in a more applied way. Suggested approaches include demonstrations, case studies, practical exercises, local problem-solving, and stronger links with companies and municipalities. Overall, UNIZAM appears well positioned to contribute to the

future course, especially if the training is contextualised, practical, and supported by cooperation with external stakeholders.

6.3 Key findings from STAKEHOLDER Interviews

The stakeholder interviews conducted in Mozambique with **COSEL – Colecta Selectiva** and **Repensar Moçambique** confirmed that waste management is an emerging field with relevant local experience, but still marked by **informality, limited infrastructure and a strong gap between training and operational practice**. Both interviews highlighted that, although some materials from construction and demolition activities are already reused informally, particularly rubble, metals, glass and other recoverable materials, these practices are generally not systematised, regulated or connected to formal training pathways.

COSEL underlined the operational complexity of waste management in Mozambique, including low separation at source, logistical constraints, limited recycling chains for materials such as glass, paper and Tetrapak, insufficient treatment infrastructure, and the need for practical skills in classification, collection, weighing, reporting, traceability, logistics, health and safety, and the use of digital tools such as mobile applications and GPS-based monitoring. Repensar Moçambique reinforced the need to move beyond overly theoretical approaches and to design training that is based on **local cases, field experience, legal procedures and realistic problem-solving in contexts with limited resources**.

A key conclusion from both interviews is that the future GROW training should not prepare an excessively narrow profile focused only on construction waste, but rather a broader and more employable profile linked to **environmental management on construction sites**, combining CDW management, occupational safety, legal compliance, reporting, waste classification, reuse and valorisation, digital monitoring and community awareness. These findings suggest that WP3 and WP4 should integrate **company-based learning opportunities, technical visits, practical case studies and collaboration with local waste management actors**, so that the future course responds to real labour market conditions and strengthens the employability of learners in Mozambique.

6.4 Main skills gaps identified

Mozambican evidence shows that the main skills gaps are linked first and foremost to the **absence of specific sector knowledge** in the area of **construction and demolition waste management**. While both institutions show some general awareness of environmental issues, there is still limited familiarity with the technical, operational, and regulatory dimensions of CDW. This means that the starting point for training is relatively basic and that the first need is to create a stronger common understanding of the field itself.

A second important gap concerns the limited development of **practical competences** related to waste identification, separation, reuse, and destination. Interviewees made it clear that training should help learners understand what different materials are, how they should be handled, and what kinds of recovery or reuse options exist in practice. In other words, the gap is not only conceptual but also operational.

The consultations also point to gaps in **market and institutional linkage**. In both Maputo and Beira, the topic is still emerging, and there are not yet strong or systematic connections between training institutions and companies specifically working in CDW-related fields. This creates an additional challenge, because future courses will need not only technical content, but also a clearer pathway towards labour market relevance, internships, and stakeholder engagement.

Finally, the assessment shows a need to strengthen **trainer preparedness**. Since the topic is new, trainers will require support not only in technical content, but also in how to teach it in a practical and locally meaningful way. This is particularly important in Mozambique, where the success of the course will depend on the ability to translate an emerging topic into accessible, context-based learning.

6.5 Main training needs identified

The findings suggest that the future GROW training offer in Mozambique should begin with a strong **introductory foundation**. Priority content should include basic concepts of **waste management**, an introduction to **construction and demolition waste**, the **national and local institutional framework**, and the main environmental and urban challenges linked to the topic. This is necessary to ensure that learners and trainers share a common baseline before moving into more specialised areas.

Once this foundation is established, the course should prioritise practical training in **waste identification, classification, separation, safe handling, reuse, and valorisation of materials**. These areas appear repeatedly in the interviews and are particularly relevant because they connect environmental objectives with practical action and potential economic value. In the Mozambican context, showing how waste can be reused or repurposed will be especially important to make the course meaningful and applicable.

The training design should also include **practice-based methodologies**, such as demonstrations, local case studies, applied exercises, and where possible visits or cooperation with relevant actors. In addition, the assessment suggests that the future course should integrate elements related to **awareness-raising, community engagement**, and responsible behaviour, as these are key to the long-term development of the field in Mozambique.

Overall, the main training need in Mozambique is to build a course that is **foundational, practical, and strongly contextualised**, while at the same time opening the way for more advanced competences and future links with the labour market. This confirms that the Mozambican strand of the GROW course should combine technical learning with awareness, local relevance, and progressive institutional capacity-building.

7. CROSS-COUNTRY ANALYSIS

7.1 Common needs across Nigeria and Mozambique

The assessment shows a clear set of **common needs** across both countries. In both **Nigeria and Mozambique**, stakeholders confirmed that **construction and demolition waste management** is a relevant and growing field, but that current training provision is still **limited, fragmented**, or not sufficiently specialised. In both contexts, there is a need to strengthen the link between **TVET provision** and the **practical requirements of the sector**, especially in relation to employability, sustainability, and operational skills.

A second common finding is the importance of building training that is **practical, market-oriented**, and supported by stronger cooperation with **companies, public actors**, and other relevant stakeholders. In both countries, institutions need support not only in content development, but also in access to practice-based learning opportunities, trainer preparation, and closer external cooperation. This confirms that the future GROW course should be designed as an applied training offer, not only as a theoretical module.

7.2 Country-specific needs

At the same time, the assessment highlights important **country-specific differences**. In **Nigeria**, the main need is to improve the quality and relevance of training in a context where the sector already exists operationally, but where systems remain **weakly formalised, compliance is often reactive**, and much technical learning still happens **on the job**. This means that the Nigerian training approach should respond directly to real operational gaps in regulation, site practice, reporting, safety, and material recovery.

In **Mozambique**, the situation is different. The topic is relevant, but the field is still at a more **foundational stage**, with less specific familiarity with CDW management and fewer structured connections with the labour market. As a result, the Mozambican training approach should place more emphasis on **basic concepts, local institutional and legal context, awareness**, and progressive introduction of practical content. In short, Nigeria requires stronger sector-specific upskilling, while Mozambique requires a stronger foundational base from which specialised training can later grow.

7.3 Priority technical skills

Across both countries, the priority **technical skills** are relatively consistent. The assessment points first to the need for competences in **waste identification, classification, sorting, and safe handling**. These appear as core skills because they are essential for any practical work related to construction and demolition waste and because they are currently insufficiently developed in both training and operational contexts.

A second group of priority skills relates to **reuse, recycling, and valorisation of materials**. These competences are critical for moving from a waste disposal logic towards a more **circular construction** approach, which is one of the central ambitions of the project. The evidence also highlights the need for knowledge related to **environmental compliance, quality control**, and, particularly in Nigeria, operational understanding of how waste is managed on site and through public systems.

7.4 Priority digital and transversal skills

In addition to technical content, the assessment confirms the importance of **digital and transversal skills**. Stakeholders in both countries identified a need for better use of **digital reporting tools, basic data collection systems, tracking of waste quantities and flows**, and simple monitoring tools that can support operational management and compliance. These needs appear more strongly developed in the Nigerian evidence, but they are also relevant for the future-proofing of the course in both countries.

Regarding transversal skills, the assessment points to the importance of **health and safety awareness, environmental responsibility, problem-solving, work discipline**, and in some cases **entrepreneurial competences** linked to green jobs and small business opportunities. These elements are especially important because the future GROW course is expected not only to transfer knowledge, but also to help learners operate responsibly and adapt to evolving labour market demands.

7.5 Inclusion-related needs for women and youth

The assessment also highlights a number of **inclusion-related needs**, especially in relation to the participation of **women and young people** in construction- and waste-related training. Questionnaire responses point to barriers such as **cultural norms, safety concerns**, and the broader perception of the sector as male-dominated or of limited attractiveness for long-term careers. This suggests that the future GROW training offer should actively address participation barriers and present the sector as a viable pathway for green employability.

From a training design perspective, this means that inclusion should not be treated as a separate issue, but integrated into the course through **accessible delivery, practical support measures, positive visibility of career opportunities**, and, where possible, stronger engagement with institutions and employers willing to support more diverse participation. In both countries, promoting opportunities for women and youth will be important not only for equity reasons, but also for expanding the future workforce in an emerging green sector.

8. IMPLICATIONS FOR CURRICULUM DEVELOPMENT AND TRAINING DESIGN

8.1 Recommendations for WP3

The findings of the needs assessment suggest that **WP3** should prioritise the development of a **practical, modular and demand-driven curriculum** that responds directly to the realities identified in **Nigeria and Mozambique**. The future course should not be designed as a generic environmental training offer, but as a targeted response to the skills gaps identified in **construction and demolition waste management**, with a clear balance between **technical content, practical application, and labour market relevance**.

A first recommendation is that WP3 should define a **common core curriculum** for both countries, while leaving sufficient flexibility for **contextual adaptation**. The assessment shows that both countries share core needs in areas such as **waste identification, sorting, safe handling, reuse, recycling, environmental compliance, and circular economy**, but also that the starting point is different in each national context. For this reason, the curriculum should combine **shared core modules** with **country-specific examples, cases, and emphasis**.

A second recommendation is that WP3 should ensure that the curriculum is built around **learning outcomes** linked to **job-relevant competences**. The evidence collected suggests that the course should prepare learners not only to understand CDW management conceptually, but to perform key tasks in real settings, including on-site waste separation, safe material handling, basic compliance procedures, and operational reporting. This means that curriculum development should be guided by what learners are expected to be able to do in practice.

Finally, WP3 should integrate **digital, transversal, and inclusion-oriented elements** from the outset. Digital tools for reporting and monitoring, health and safety, environmental responsibility, and green entrepreneurship should not be treated as optional additions, but as part of the core training concept. At the same time, course design should consider accessibility and relevance for **women and young people**, in line with the wider objectives of the project.

8.2 Recommendations for WP4

For **WP4**, the assessment suggests that the pilot phase should place strong emphasis on **practical testing, institutional feasibility, and stakeholder validation**. Since the future GROW training offer is being developed in a field that is still emerging, especially in **Mozambique**, the pilot phase will be essential to verify whether the content, methodology, and level of difficulty are appropriate for the target groups. WP4 should therefore be used not only to deliver training, but also to collect structured feedback for improvement.

A second recommendation is that WP4 should include **practice-based delivery methods** as a central feature of the pilot. The findings consistently show that the value of the future course will depend on its ability to move beyond theory. For this reason, pilot implementation should use demonstrations, applied exercises, case studies, and where possible site-based or industry-linked learning opportunities. This will be particularly important for validating whether learners can actually demonstrate the competences expected by the sector.

WP4 should also strengthen **external engagement** during the pilot stage. Public authorities, companies, and other sector actors should be involved, where feasible, in validating course relevance, supporting practical exposure, and providing feedback on learner readiness. This is especially important to reinforce employability and to ensure that the pilot is not disconnected from labour market realities.

8.3 Suggested priority training modules

Based on the evidence collected, the future GROW course should include a concise set of **priority modules** that respond directly to the most recurrent needs identified during the assessment. A first module should provide an **introduction to construction and demolition waste management**, including basic concepts, environmental relevance, and the role of CDW management within sustainable and circular construction. This introductory layer will be especially important in **Mozambique**, where the topic is still relatively new.

A second priority module should focus on **waste identification, classification, sorting, and safe handling**, as these competences emerged as core needs across both countries. A third module should address **reuse, recycling, and valorisation of construction materials**, helping learners understand how waste can be transformed into a resource and how circular practices can be applied in real contexts.

A fourth module should cover **environmental compliance, health and safety, and operational procedures**, including the practical responsibilities linked to waste management in construction environments. A fifth module should introduce **digital monitoring and reporting tools**, with a level of complexity adapted to the target institutions and learners. Finally, a sixth module should include **circular economy and green entrepreneurship**, in order to connect technical training with future employment and business opportunities.

8.4 Recommendations for trainer upskilling

The assessment makes clear that **trainer upskilling** will be a critical condition for the success of the future GROW course. In both countries, the topic is either new or only partially addressed, which means that trainers will need additional support before they can confidently deliver the new content. Upskilling should therefore be treated as a strategic component of course preparation, not as a secondary activity.

Trainer preparation should cover at least three dimensions. First, trainers need stronger **technical understanding** of CDW-related topics, including sorting, reuse, recycling, compliance, and safety. Second, they need support in **practice-based teaching methods**, so that the course can be delivered through demonstrations, case-based learning, and applied exercises rather than through theory alone. Third, trainers should be exposed, where possible, to **industry-oriented learning**, including site visits, exchanges with public and private stakeholders, and examples drawn from real operational settings.

A final recommendation is that trainer upskilling should also include **digital confidence and adaptation to online or blended delivery**, especially where institutions already show openness to digital learning environments. This will help ensure that the course is not only technically sound, but also deliverable in formats that are realistic for the participating institutions.

9. CONCLUSIONS

This report confirms that **construction and demolition waste management** represents a relevant and timely area for the development of new **TVET training provision** in both **Nigeria** and **Mozambique**. At the same time, the assessment shows that the field is still marked by important gaps in **specialised training, practical competences, trainer preparedness, and institutional links with the labour market**. These gaps create both a challenge and an opportunity for the **GROW** project.

The evidence collected through **questionnaires** and **interviews** makes clear that the future GROW training programme should be designed as a **practical, modular, and context-sensitive** course. In both countries, there is a need to strengthen core competences related to **waste identification, sorting, safe handling, reuse, recycling, environmental compliance, and health and safety**. The findings also show that **digital reporting, basic monitoring tools, problem-solving, and green entrepreneurship** should be integrated as relevant complementary dimensions of the training offer.

At the same time, the assessment highlights important differences between the two target countries. In **Nigeria**, the priority is to strengthen a field that already exists operationally but still suffers from **weak formalisation, reactive compliance**, and insufficient practical preparation of workers and graduates. In **Mozambique**, the main need is to build a stronger **foundational base**, introducing key concepts, contextualised examples, and practical methods in a field that is still emerging. This means that the future course should combine a **common core structure** with enough flexibility to respond to **country-specific realities**.

A key conclusion of this report is that **trainer upskilling** and **practice-based learning** will be essential for the success of the project. Without adequately prepared trainers and without learning activities linked to real or simulated work situations, the future course will not be able to respond effectively to the needs identified. For this reason, the next phases of the project should ensure that curriculum development and piloting are closely connected to the operational realities of the sector and supported by cooperation with relevant **public and private stakeholders**.

Overall, the needs assessment provides a sufficiently solid evidence base to move towards the next stages of the project. It confirms that there is a **clear rationale** for developing a GROW training programme in this field and that such a programme can make a meaningful contribution to **green skills development, institutional capacity-building, and youth employability** in the target countries. The main task for the following work packages will now be to translate these findings into a coherent and feasible training offer that is relevant to both institutions and labour market actors.

10. ANNEXES

Annex 1. List of interviews conducted

The following interviews were conducted as part of the **Task 2.1 needs assessment** process in order to complement questionnaire data and provide qualitative evidence for the identification of **skills gaps**, **training priorities**, and **institutional needs** related to **construction and demolition waste management**.

Nigeria

- **LAWMA** – Interview with **Trainer Oyetesu Owolabi**
- **LAWMA** – Interview with **Technical Officer Gbenga Jolaoso**
- **LAWMA** – Interview with **Director Jirinsola Olaleye**
- **APODISSI** - Interview with **Worthrust Resource Limited, Lagos** – Interview with **CEO Oluwaferanmi Olorunninwo**
- **APODISSI** - Interview with **Industrial Skills Training Center, Kano** – Interview with **Assistant Director Engr. Yusuf Ibrahim**
- **APODISSI** - Interview with **Honeytreat Trade Academy, Lagos** – Interview with **Kate Nyong** (Business Manager), **Lekan Akorode** (Trainer), **Gbenu Taiwo** (Trainer in Tiling), **Emmanuel** (Center Manager), and **Aduragbemi Samuel** (Trainer in Solar Installation)

Mozambique

Instituto Superior Dom Bosco (ISDB), Maputo – Interviews and validation meeting with institutional representatives, including:

- **Danila Bijal** – Head of the Employability Department
- **Marcos Soto** – Teacher in Industrial Maintenance
- **Carmone Sambo** – Maintenance Technician
- **Karen Novele** and the **ISDB team**

Repensar Moçambique – Interview with **Eng. Háfido Hassan Abacassamo**, representative of Repensar Moçambique and stakeholder active in recycling, environmental education and community-based waste management practices.

Colecta Selectiva de Lixo (COSEL) – Interview with **Deonísio Ussaca**, representative of COSEL, a Mozambican organisation active in selective waste collection, monitoring, reuse, recycling and waste management services.

Universidade Zambeze (UNIZAM), Beira – Interviews with institutional, academic and technical representatives, including:

- **MSc. Eng. Eulálio Romão Bernardo** – Head of Department
- **Eng. Cesar Augusto António Marques** – Professor
- **Eng. Adriano** – Laboratory Technician

Two online questionnaires were used as part of the assessment methodology: one addressed to **TVET institutions** and one addressed to **industry and public-sector stakeholders**. Their purpose was to collect comparable information on existing training provision, institutional capacity, sector needs, labour market expectations, and priority competences for the future GROW course.

Annex 2. Questionnaire overview (include Annexes)

Questionnaire 1 – TVET Schools Needs Assessment

This questionnaire gathered information on:

- institution profile and training areas;
- current or planned inclusion of **CDW-related training**;
- barriers to introducing new training content;
- institutional capacity for **practical training**;
- trainer support needs;
- priority **technical, digital, and transversal skills**;
- cooperation with companies and external actors;
- barriers affecting participation of **women and young people**;
- suggested training modules for the GROW course;
- perceived future trends and labour market demand.

Questionnaire 2 – Industry and Companies Needs Assessment

This questionnaire collected information on:

- organisation profile and type of operations;
- operational challenges in **CDW management**;
- skills most needed in the sector;
- perception of existing TVET provision;
- weaknesses of current training offers;
- digital tools and digital barriers;
- forms of cooperation considered feasible with training institutions;
- barriers affecting women and youth employment;
- practical competences expected from future learners;
- suggested modules for the GROW training programme.

GROW Project – TVET Schools Needs Assessment (Construction & Demolition Waste Management)

This questionnaire supports the GROW Project (WP2). It helps us understand the current capacity of TVET schools and the needs of the construction and demolition waste (CDW) sector, to design relevant training programmes for Nigeria and Mozambique.

Answering the questionnaire will take around 10-15 minutes.

** Indica que la pregunta es obligatoria*

About the GROW Project

The GROW Project is an international initiative supported by the European Union through the Erasmus+ Programme. It aims to improve vocational education and training in Nigeria and Mozambique, with a special focus on sustainable construction and demolition waste management.

The project brings together training centres, companies, and experts from Europe and Africa to develop modern, practical, and inclusive training programmes linked to green jobs and the circular economy. GROW works to identify skills needs, strengthen cooperation with industry, and support young people and professionals in accessing better employment opportunities.

By promoting green skills, digital innovation, and social inclusion, GROW contributes to sustainable development and long-term employability in the construction and waste management sector.

Your participation in this questionnaire helps us design training programmes that respond to real labour market needs. Thank you for your contribution.

SECTION A – Basic Information

This section collects basic information about your organisation, its size, activities, and experience in the construction and waste management sector. This information helps us understand your institutional context.

1. **1. Institution / Organisation Name ***

2. **2. City and Country ***

3. **3. Respondent role ***

Marca solo un óvalo.

☐ Director/Management

☐ Teacher-Trainer

☐ Technical staff

☐ Otro:

4. **4. Main training areas offered ***

Selecciona todos los que correspondan.

☐ Construction

☐ Waste management

☐ Recycling

☐ Civil Works

☐ Environmental

☐ Engeneering

☐ Otro:

5. **5. Do you currently offer any training related to CDW management or circular construction?** *

Selecciona todos los que correspondan.

- ☐ Yes (as a full course/programme)
- ☐ Partly (as a module/topic within other courses)
- ☐ No
- ☐ Don't know / not sure

SECTION B – Existing Programmes Awareness & Baseline (if Q6 = Yes/Partly)

This section aims to assess the existence of current training programmes related to Construction and Demolition Waste (CDW) management and the level of awareness of such programmes within TVET institutions. It will help determine the baseline capacity before identifying training gaps and improvement needs.

6. **6. If yes/partly, which topics are already covered?** *

Selecciona todos los que correspondan.

- ☐ CDW basics (types, risks, impacts)
- ☐ Sorting & segregation on site
- ☐ Collection and logistics
- ☐ Recycling/valorisation options
- ☐ Health & safety (H&S)
- ☐ Environmental compliance
- ☐ Circular economy in construction
- ☐ Otro: _____

7. 7. If no, are you interested in introducing CDW-related training? *

Marca solo un óvalo.

- ☐ Yes
- ☐ Maybe
- ☐ No
- ☐ Don't know

8. 8. What are the main barriers to introducing CDW training? *

Selecciona todos los que correspondan.

- ☐ Lack of trained teachers
- ☐ Lack of equipment/workshop facilities
- ☐ Limited curriculum space/time
- ☐ Low awareness/demand
- ☐ Limited cooperation with industry
- ☐ Accreditation/approval challenges
- ☐ Other + specify

SECTION C – Training Capacity & Teaching Needs (TVET-specific)

This section evaluates the current training capacity of TVET institutions and identifies the main challenges faced by teachers and trainers in delivering CDW-related content. It also explores the types of support and resources needed to strengthen technical and pedagogical skills.

9. **9. How would you rate your institution's capacity to deliver practical training (hands-on learning) in construction-related topics?** *

Marca solo un óvalo.

- ☐ Fully aligned
- ☐ Partially aligned
- ☐ Weakly aligned
- ☐ Not aligned

10. **10. What support do teachers/trainers need most to teach CDW topics?** *

Selecciona todos los que correspondan.

- ☐ Technical upskilling on CDW
- ☐ Teaching methodology (active/blended learning)
- ☐ Teaching materials (lesson plans, case studies)
- ☐ Industry visits / exposure
- ☐ Equipment / tools for practical training
- ☐ Assessment tools (tests, skills checklists)
- ☐ Otro: _____

11. **11. In your view, which CDW-related skills should be developed first (priority skills to be developed)?** *

Selecciona todos los que correspondan.

- ☐ Waste sorting and safe handling
- ☐ Material recovery / reuse preparation
- ☐ Recycling processes and quality control
- ☐ Environmental monitoring & reporting
- ☐ H&S and risk management
- ☐ Circular construction practices
- ☐ Green entrepreneurship/business models
- ☐ Otro: _____

SECTION D – Digital Skills (aligned to CDW)

This section explores the digital skills and tools required to support training and operations in Construction and Demolition Waste (CDW) management, as well as the main barriers to integrating digital technologies into teaching and learning processes.

12. 12. Which digital skills/tools would be most useful for CDW training and practice? *

Selecciona todos los que correspondan.

- ☐ Digital data collection (site forms, checklists)
- ☐ Tracking/recording CDW quantities
- ☐ Digital reporting (basic dashboards/spreadsheets)
- ☐ GIS/mapping for sites and flows
- ☐ Photo/video documentation for audits
- ☐ Smart monitoring tools (sensors/basic tech)
- ☐ Drones (if applicable)
- ☐ E-learning tools for training delivery
- ☐ Otro: _____

13. 13. Main barriers for digital learning/training at your institution *

Selecciona todos los que correspondan.

- ☐ Connectivity
- ☐ Lack of devices/equipment
- ☐ Limited digital skills among staff
- ☐ Limited time for training
- ☐ Lack of digital content in local language
- ☐ Otro: _____

SECTION E – Cooperation with Industry and Inclusion (TVET perspective)

This section examines the current level of cooperation between TVET institutions and industry stakeholders, as well as key inclusion aspects related to the participation of youth and women in CDW-related training programmes. It aims to identify opportunities to strengthen partnerships and promote equitable access to skills development.

14. 14. Current cooperation with construction/CDW actors *

Selecciona todos los que correspondan.

- ☐ Regular
- ☐ Occasional
- ☐ Rare
- ☐ None

15. 15. What forms of cooperation are most feasible for your institution? *

Selecciona todos los que correspondan.

- ☐ Guest speakers from industry
- ☐ Company visits/site visits
- ☐ Joint curriculum review
- ☐ Student internships/apprenticeships
- ☐ Teacher placements in companies
- ☐ Joint pilot projects/demonstrations
- ☐ Otro: _____

16. 16. Approximate share of female students in construction-related programmes *

Marca solo un óvalo.

- ☐ <20%
- ☐ 20–40%
- ☐ 41–60%
- ☐ >60%
- ☐ Don't know

17. **17. In your opinion, what are the main barriers for women and youth to participate in construction/CDW training?**

*

Selecciona todos los que correspondan.

- ☐ Cultural norms
- ☐ Cost/transport
- ☐ Lack of information/role models
- ☐ Safety concerns
- ☐ Limited job prospects perception
- ☐ Otro: _____

SECTION F – Suggested Training Modules

This section gathers feedback on the types of training modules that should be developed under the GROW Project to better address skills gaps in Construction and Demolition Waste (CDW) management and support relevant, demand-driven vocational training.

18. **18. Which training modules should GROW consider developing (suggested modules)?**

*

Selecciona todos los que correspondan.

- ☐ Introduction to CDW and regulations
- ☐ On-site sorting & safe handling
- ☐ Collection, transport and logistics
- ☐ Recycling/valorisation and quality control
- ☐ Circular economy & sustainable construction practices
- ☐ Health & safety in CDW operations
- ☐ Digital tools for CDW monitoring and reporting
- ☐ Green entrepreneurship / MSME opportunities
- ☐ Otro: _____

19. 19. Any final comments or recommendations for the GROW training design? *

SECTION G – Future skills and market trends

This section aims to identify emerging trends and future skills needs in the Construction and Demolition Waste (CDW) sector, helping to ensure that the training programmes developed under GROW are aligned with evolving labour market demands.

20. 20. In your opinion, which trends will most affect the construction and demolition waste (CDW) sector in the next 3–5 years? *

Selecciona todos los que correspondan.

- ☐ Stronger environmental regulations and compliance
- ☐ Growth of recycling/valorisation businesses
- ☐ Increased focus on circular construction and reuse of materials
- ☐ Digitalisation (tracking, reporting, monitoring)
- ☐ Increased public/private investment in waste management
- ☐ Otro: _____

21. **21. What new skills do you think will be most important for future jobs in CDW management?** *

Selecciona todos los que correspondan.

- ☐ On-site waste sorting and safe handling
- ☐ Quality control of recycled materials
- ☐ Environmental monitoring and reporting
- ☐ Operation/maintenance of recycling equipment
- ☐ Digital data collection and basic reporting tools
- ☐ Health & Safety and risk management
- ☐ Entrepreneurship and business development
- ☐ Otro: _____

22. **22. How strong is the current demand for CDW-related skills in your local labour market?** *

Marca solo un óvalo.

- ☐ Very strong
- ☐ Strong
- ☐ Moderate
- ☐ Low
- ☐ Don't know / not sure

SECTION H - Skills to be Up-Skilled for Train-the-Trainers (ToT)

This section aims to identify existing competencies among trainers and the key skills that need to be strengthened in TVET institutions. The results will support the development of the Train-the-Trainers (ToT) curriculum under the GROW Project.

23. **23. Which CDW-related technical skills are currently available among your teaching staff?**

Selecciona todos los que correspondan.

- ☐ Basic understanding of CDW management
- ☐ On-site waste sorting and segregation
- ☐ Recycling and material recovery processes
- ☐ Environmental compliance and reporting
- ☐ Health & Safety (H&S) in construction sites
- ☐ Circular economy concepts
- ☐ Sustainable construction practices
- ☐ I do not have enough information to answer
- ☐ Otro: _____

24. **24. Which of the following skills should be further developed among trainers in your institution?**

Selecciona todos los que correspondan.

- ☐ Practical CDW site management
- ☐ Recycling and valorisation techniques
- ☐ Environmental monitoring and reporting
- ☐ Risk prevention and H&S
- ☐ Circular construction practices
- ☐ Use of digital tools for CDW monitoring
- ☐ Teaching methodology for technical subjects
- ☐ Industry-based training approaches
- ☐ Green entrepreneurship
- ☐ Otro: _____

25. **25. How confident are your trainers in delivering training on CDW-related topics?**

Marca solo un óvalo.

- ☐ Very confident
- ☐ Moderately confident
- ☐ Slightly confident
- ☐ Not confident
- ☐ Don't know

26. **26. What type of upskilling would be most beneficial for your trainers?**

Selecciona todos los que correspondan.

- ☐ Technical refresher courses
- ☐ Digital tools training
- ☐ Pedagogical training
- ☐ Industry placements
- ☐ Updated training materials
- ☐ Exposure to European best practices
- ☐ Otro: _____

27. **27. Which online learning approaches would best support your trainers in delivering CDW-related training under the GROW Project?**

Selecciona todos los que correspondan.

- ☐ Live online sessions (webinars)
- ☐ Self-paced online modules
- ☐ Virtual simulations or case studies
- ☐ Video-based practical demonstrations
- ☐ Interactive assignments or quizzes
- ☐ Online peer learning with other TVET institutions
- ☐ Industry guest lectures (online)
- ☐ Don't know

SECTION I – Final Comments

This section provides an opportunity to share any additional feedback, recommendations, or insights that may support the design and implementation of relevant CDW training programmes under the GROW Project.

28. **28. Main recommendations for the GROW Project**

29. **29. Would your organisation be interested in participating in pilot testing or validation of the online CDW training course developed under the GROW Project?**

30. **30. Additional comments**

31. **Thank you for your time and cooperation!**

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GROW Project – Industry and Companies (Construction & Demolition Waste Management)

This questionnaire supports the GROW Project (WP2). It helps us understand the current capacity of TVET schools and the needs of the construction and demolition waste (CDW) sector, to design relevant training programmes for Nigeria and Mozambique.

Answering the questionnaire will take around 10-15 minutes.

** Indica que la pregunta es obligatoria*

About the GROW Project

The GROW Project is an international initiative supported by the European Union through the Erasmus+ Programme. It aims to improve vocational education and training in Nigeria and Mozambique, with a special focus on sustainable construction and demolition waste management.

The project brings together training centres, companies, and experts from Europe and Africa to develop modern, practical, and inclusive training programmes linked to green jobs and the circular economy. GROW works to identify skills needs, strengthen cooperation with industry, and support young people and professionals in accessing better employment opportunities.

By promoting green skills, digital innovation, and social inclusion, GROW contributes to sustainable development and long-term employability in the construction and waste management sector.

Your participation in this questionnaire helps us design training programmes that respond to real labour market needs. Thank you for your contribution.

SECTION A – Basic Information

This section collects basic information about your organisation, its size, activities, and experience in the construction and waste management sector. This information helps us understand your institutional context.

1. **1. Institution / Organisation Name ***

2. **2. City and Country ***

3. **3. Respondent role ***

Marca solo un óvalo.

- ☐ Management/Director
- ☐ Technical supervisor
- ☐ HR/Training responsible
- ☐ Public authority
- ☐ Otro:

4. **5. Organisation type ***

Marca solo un óvalo.

- ☐ Construction company
- ☐ Demolition company
- ☐ CDW collection/transport
- ☐ Recycling/valorisation company
- ☐ Public waste authority
- ☐ Industry association
- ☐ Otro:

5. **6. Organisation size ***

Marca solo un óvalo.

- ☐ Micro (1–9)
- ☐ Small (10–49)
- ☐ Medium (50–249)
- ☐ Large (250+)

SECTION B – CDW Activities & Current Practices

This section aims to understand the current involvement of organisations in Construction and Demolition Waste (CDW) management activities and identify existing operational practices and challenges within the sector.

6. **7. Which CDW activities are part of your operations? ***

Selecciona todos los que correspondan.

- ☐ Demolition Waste Management
- ☐ On-site sorting/segregation
- ☐ Collection/transport
- ☐ Recycling/processing
- ☐ Sale/use of recycled materials
- ☐ Compliance/reporting
- ☐ Otro: _____

7. 8. What are your main operational challenges in CDW management? *

Selecciona todos los que correspondan.

- ☐ Lack of skilled staff
- ☐ Limited equipment/technology
- ☐ Weak enforcement/unclear regulations
- ☐ Low market demand for recycled materials
- ☐ Costs/logistics
- ☐ H&S risks
- ☐ I do not have enough information to answer
- ☐ Otro: _____

SECTION C – Skills Needs for Companies and Industry

This section identifies the key skills and competencies required by companies to improve Construction and Demolition Waste (CDW) management practices and highlights current workforce gaps in the sector.

8. 9. Which skills/personnel are most needed in your organisation for better CDW management? *

Selecciona todos los que correspondan.

- ☐ Site supervisors with CDW knowledge
- ☐ Workers trained in sorting and safe handling
- ☐ Technicians for recycling/processing equipment
- ☐ Quality control for recycled materials
- ☐ Environmental compliance/reporting staff
- ☐ Health & Safety officers
- ☐ Data/digital reporting support
- ☐ Otro: _____

9. **10. In your view, what is the level of knowledge of those responsible for CDW management in your organisation/sector?** *

Marca solo un óvalo.

☐ Very strong

☐ Strong

☐ Moderate

☐ Weak

☐ Don't know

10. **11. Which skills are currently most difficult to find in the labour market?** *

Selecciona todos los que correspondan.

☐ CDW sorting & segregation

☐ Recycling/valorisation techniques

☐ Equipment operation/maintenance

☐ Environmental monitoring & reporting

☐ H&S and risk prevention

☐ Digital tracking/reporting

☐ Entrepreneurship/business skills

☐ Otro: _____

SECTION D – Existing Training Awareness (aligned to CDW)

KoiThis section explores the level of awareness of existing training programmes related to Construction and Demolition Waste (CDW) management and assesses how well they respond to industry needs.

11. **12. Are you aware of any TVET programmes or courses in your area that cover CDW management?** *

Marca solo un óvalo.

- ☐ Yes
- ☐ No
- ☐ Not sure

12. **13. If Yes: How adequate are these programmes for industry needs?** *

Marca solo un óvalo.

- ☐ Very adequate
- ☐ Adequate
- ☐ Partially adequate
- ☐ Not adequate
- ☐ I do not have enough information to answer

13. **14. What are the main weaknesses of existing training (if any)?** *

Selecciona todos los que correspondan.

- ☐ Too theoretical
- ☐ Outdated content
- ☐ Lack of practical training
- ☐ Limited industry involvement
- ☐ Limited focus on CDW/circular economy
- ☐ Limited digital content
- ☐ Otro: _____

SECTION E – Digital Skills & Innovation (CDW-specific)

This section examines the digital tools and innovation needs that can enhance Construction and Demolition Waste (CDW) management practices, as well as the main barriers to adopting such technologies within organisations.

14. 15. Which digital tools/skills would most improve CDW operations in your organisation? *

Selecciona todos los que correspondan.

- ☐ Digital checklists/site data capture
- ☐ Tracking quantities and flows
- ☐ Basic reporting dashboards/spreadsheets
- ☐ GIS/mapping
- ☐ Photo/video documentation
- ☐ Smart monitoring tools
- ☐ Drones (if applicable)
- ☐ Otro: _____

15. 16. Main barriers to adopting digital tools *

Selecciona todos los que correspondan.

- ☐ Cost
- ☐ Lack of skills
- ☐ Connectivity
- ☐ Lack of awareness
- ☐ Resistance to change
- ☐ Otro: _____

SECTION F – Cooperation with TVET and Inclusion (Industry perspective)

This section assesses opportunities for collaboration between companies and TVET institutions, as well as perspectives on the inclusion of youth and women in CDW-related employment and training pathways.

16. **17. What forms of cooperation would you consider with TVET institutions? ***

Selecciona todos los que correspondan.

- ☐ Hosting interns/trainees
- ☐ Offering site visits
- ☐ Guest lectures
- ☐ Co-designing curricula
- ☐ Providing equipment/materials for practice
- ☐ Joint pilot projects
- ☐ Otro: _____

17. **18. What would motivate you most to cooperate? ***

Selecciona todos los que correspondan.

- ☐ Better skilled graduates/workforce
- ☐ Visibility/CSR benefits
- ☐ Reduced onboarding/training costs
- ☐ Influence on training content
- ☐ Access to innovation and networks
- ☐ Otro: _____

18. **19. What is your perception of the level of employment among women and young people in your sector? ***

Marca solo un óvalo.

- ☐ High
- ☐ Moderate
- ☐ Low
- ☐ Don't know

19. **20. In your opinion, what are the barriers to employment for young people and women?** *

Selecciona todos los que correspondan.

- ☐ Lack of specific skills
- ☐ Cultural barriers
- ☐ Limited experience
- ☐ Safety concerns
- ☐ Working conditions
- ☐ Otro: _____

SECTION G – Future Skills and Market Trends

This section explores anticipated trends in the Construction and Demolition Waste (CDW) sector and identifies future skills that will be needed to support industry development and green job creation.

20. **21. In your opinion, which trends will most affect the construction and demolition waste (CDW) sector in the next 3–5 years?** *

Selecciona todos los que correspondan.

- ☐ Stronger environmental regulations and compliance
- ☐ Growth of recycling/valorisation businesses
- ☐ Increased focus on circular construction and reuse of materials
- ☐ Digitalisation (tracking, reporting, monitoring)
- ☐ Increased public/private investment in waste management
- ☐ Otro: _____

21. **22. What new skills do you think will be most important for future jobs in CDW management?** *

Selecciona todos los que correspondan.

- ☐ On-site waste sorting and safe handling
- ☐ Quality control of recycled materials
- ☐ Environmental monitoring and reporting
- ☐ Operation/maintenance of recycling equipment
- ☐ Digital data collection and basic reporting tools
- ☐ Health & Safety and risk management
- ☐ Entrepreneurship and business development
- ☐ Otro: _____

22. **23. How strong is the current demand for CDW-related skills in your local labour market?** *

Marca solo un óvalo.

- ☐ Very strong
- ☐ Strong
- ☐ Moderate
- ☐ Low
- ☐ Don't know / not sure

SECTION H - Skills Needs for Training of Trainers (ToT)

This section aims to identify the key technical and transversal skills that TVET trainers should develop in order to better prepare learners for employment in the Construction and Demolition Waste (CDW) sector as well as recommendations for the training modules.

23. **24. In your opinion, which technical skills are currently lacking among TVET graduates entering the CDW sector?**

Selecciona todos los que correspondan.

- ☐ Waste sorting and safe handling
- ☐ Recycling and material recovery
- ☐ Equipment operation
- ☐ Environmental compliance
- ☐ Health & Safety procedures
- ☐ Quality control of recycled materials
- ☐ Digital data collection and reporting
- ☐ Otro: _____

24. **25. Which skills should TVET trainers strengthen to better prepare students for employment?**

Selecciona todos los que correspondan.

- ☐ Practical on-site CDW management
- ☐ Recycling processes
- ☐ Environmental monitoring
- ☐ H&S and risk management
- ☐ Circular economy practices
- ☐ Digital monitoring/reporting tools
- ☐ Work-based learning approaches
- ☐ Entrepreneurship skills
- ☐ Otro: _____

25. **26. How important is it for TVET trainers to receive industry-oriented training? (Multiple choice)**

Marca solo un óvalo.

- ☐ Very important
- ☐ Important
- ☐ Moderately important
- ☐ Not important

26. **27. Would your organisation be willing to support trainer upskilling through site visits or knowledge exchange?**

Marca solo un óvalo.

- ☐ Yes
- ☐ Maybe
- ☐ No

27. **28. What type of practical competencies should GROW-trained students demonstrate to be considered job-ready in your organisation?**

Selecciona todos los que correspondan.

- ☐ Ability to sort and handle CDW safely on-site
- ☐ Basic knowledge of recycling and recovery processes
- ☐ Compliance with environmental standards
- ☐ Application of Health & Safety procedures
- ☐ Basic use of digital tools for waste monitoring
- ☐ Understanding of circular construction practices
- ☐ Teamwork and problem-solving skills
- ☐ Otro: _____

28. 29. Which training modules should GROW consider developing?

Selecciona todos los que correspondan.

- ☐ Introduction to CDW and regulations
- ☐ On-site sorting & safe handling
- ☐ Collection, transport and logistics
- ☐ Recycling/valorisation and quality control
- ☐ Circular economy & sustainable construction practices
- ☐ Health & Safety in CDW operations
- ☐ Digital tools for CDW monitoring and reporting
- ☐ Green entrepreneurship / MSME opportunities
- ☐ Otro: _____

SECTION I - Final Comments

This section provides space for any final comments or recommendations to support the design of relevant CDW training programmes.

29. 30. Do you think the GROW project can help boost competitiveness and employability in the sector?

30. Do you have any additional comments?

31. **Thank you for your time and cooperation!**

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ANNEX 3. SUMMARY TABLES OF FINDINGS

Task 2.1 – Training Needs Report

Annex 3.1. Summary table – Nigeria

Dimension	Key findings	Implications for training
1. Sector context	Existing actors and rules, especially LAWMA, but CDW remains weakly formalised; recycling is limited and much learning is on the job.	Training should strengthen formalisation, technical skills and cooperation between public actors, TVET and companies.
2. TVET situation	Centres have construction experience but no structured CDW training; gaps include equipment, awareness, industry links and trainer preparation.	The course should include trainer upskilling, practical materials and stronger company links.
3. Main skills gaps	Key gaps: sorting, safe handling, compliance, health and safety, reporting, decision-making, recycling knowledge and digital monitoring.	Prioritise practical, job-relevant competences with direct operational value.
4. Training needs identified	Priority topics: waste identification, sorting, reuse and recycling, compliance, H&S, digital reporting and green entrepreneurship.	The Nigerian strand should be practical, market-oriented and linked to real work situations.
5. Labour market perspective	Employers struggle to find motivated workers with practical skills, but show interest in internships, visits and guest lectures.	The course should strengthen employability through practice-based learning and stakeholder engagement.
Overall conclusion – Nigeria: CDW exists in practice, but the sector still needs stronger practical skills, more formalised training pathways and better public-private-TVET cooperation.		

Annex 3.2. Summary table – Mozambique

Dimension	Key findings	Implications for training
1. Sector context	CDW management is still emerging; awareness exists, but specific training is very limited and the field is shaped by weak infrastructure and value chains.	Training should begin with a solid introductory base before moving to more specialised content.
2. Institutional situation	ISDB has an environmental dimension but no CDW course; UNIZAM sees the topic as relevant and strategic. Both institutions are open to future course development.	The course should be progressive and adapted to the realities of Maputo and Beira.
3. Stakeholder perspective	COSTE and Representative highlight informality, limited infrastructure and a gap between training and practice; they call for practical, localised training.	The course should be practice-based, company-linked and grounded in local realities.
4. Main skills gaps	Gaps include waste identification, separation, reuse, destination of materials, and wider technical, operational and regulatory dimensions.	Training should reinforce technical foundations and the employability dimension.
5. Training needs identified	Priority topics: basic waste management, CDW introduction, legal framework, classification, safe handling, reuse, valorisation and local case-based practice.	The Mozambican strand should be foundational, practical and highly contextualised.
6. Labour market perspective	A broader profile linked to environmental management on construction sites coexists and environmental awareness.	The course should combine CDW, compliance, H&S, reporting, digital skills and environmental awareness.
Overall conclusion – Mozambique: A stronger foundation is needed, combining basic concepts, contextualised examples, practical learning and closer cooperation with companies and sector actors.		

Annex 3.3. Cross-country summary table

Dimension	Common findings across both countries	Country-specific nuance
1 Relevance of CDW management	In both countries, CDW is a relevant and growing field with environmental, economic and employability potential.	Nigeria is more operational but weakly formalised; Mozambique is more emerging and needs a stronger foundation.
2 Training provision	Current provision is limited, fragmented or insufficiently specialised in both countries.	Nigeria needs sector-specific upskilling; Mozambique needs introductory and foundational training.
3 Main technical skills needed	Shared needs include identification, classification, sorting, safe handling, reuse, recycling and valorisation.	Nigeria emphasises site operations, compliance and reporting; Mozambique emphasises foundational knowledge and local adaptation.
4 Digital and transversal skills	Both countries need stronger digital reporting, monitoring, H&S, environmental responsibility, problem-solving and green entrepreneurship.	Digital tools are more developed in Nigeria; in Mozambique they are important for future-proofing the course.
5 Trainer needs	Trainers in both countries need technical upskilling and support in practice-based methods.	This is especially important in Mozambique, where the topic is newer and less established.
6 Stakeholder cooperation	Stronger cooperation with companies, public authorities and sector actors is needed in both countries.	Opportunities appear more concrete in Nigeria, while in Mozambique links still need to be built.
7 Inclusion needs	Both countries face barriers for women and youth linked to perceptions, safety concerns and social norms.	Inclusion measures should be built in from the start, with country-sensitive approaches.

✓ **Cross-country conclusion:** The future GROW course should combine a common core curriculum with flexibility for contextual adaptation.

Annex 3.4. Priority skills and training needs summary

Category	Priority areas identified
Technical skills	Identification and classification; sorting and segregation; safe handling; reuse, recycling and valorisation; compliance; quality control; logistics.
Digital skills	Data collection; waste flow monitoring; reporting tools; spreadsheets; mobile apps; GPS/GPRS monitoring; digital traceability.
Transversal skills	H&S awareness; environmental responsibility; problem-solving; work discipline; communication; documentation; adaptation; entrepreneurial mindset.
Trainer upskilling needs	Active teaching; content; practice-based methods; lesson plans and case studies; digital readiness; industry exposure; site-based examples.
Institutional needs	Equipment for practical training; stronger company engagement; closer public-private-TVET cooperation; labour-market validation; support for piloting.
Inclusion-related needs	Greater participation of women and youth; safer pathways; accessible delivery; stronger visibility of green jobs.

Annex 3.5. Implications for WP3 and WP4

Work Package	Main implications from the needs assessment
WP3 – Curriculum development	Develop a practical, modular and demand-driven curriculum with a common core and space for contextual adaptation. Ensure strong coverage of technical, digital and transversal competences, country examples and inclusion.
WP4 – Pilot implementation	Pilot the course through demonstrations, case studies, applied exercises and, where possible, company-linked learning. Use the pilot to validate relevance, difficulty level and feasibility, with stakeholder feedback.

Overall synthesis: The needs assessment supports a practical, modular and context-sensitive GROW course. It should combine shared core modules with flexibility for Nigeria and Mozambique. Priority areas include employability, trainer upskilling, stakeholder cooperation, and green and digital competences. Successful implementation will depend on practice-based learning and strong public-private-TVET collaboration.