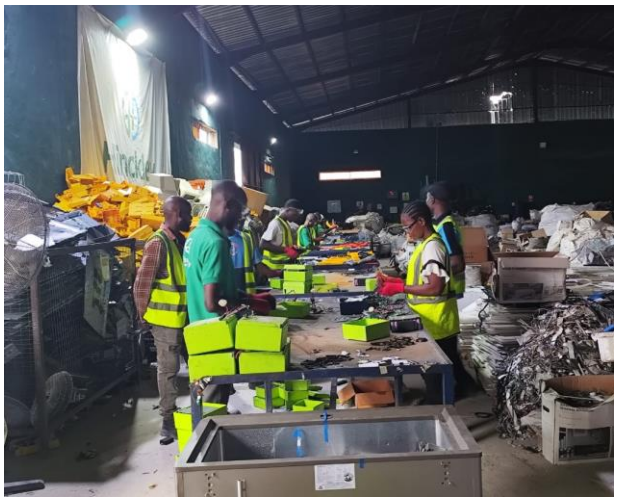
Validated Terminal Review of the UNEP/GEF project "Circular Economy approaches for the electronics sector in Nigeria"

GEF ID 10141

2019 – 2023



UNEP Industry and Economy Division

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Photos Credits:
Front cover: Hinckley Recycling Center (Boussoura Talla)
Page 36, Picture 1: JDP Waste Management and MRI Collection Center in Lagos (Boussoura Talla, July 2024)
Page 37, Picture 2: Hinckley Recycling Center in Lagos (Boussoura Talla, 2024)
Page 37, Picture 3: E-Terra Recycling Center in Lagos (Boussoura Talla, 2024)
Page 42, Picture 4: Women from informal sector (LAWMA) and at Hinckley Recycling Center in Lagos (Hinckley), July 2024

Disclaimer

This report has been prepared by two (2) external consultants as part of a Terminal Review, which is a management-led process to assess performance at the project's operational completion. The UNEP Evaluation Office provides templates and tools to support the review process and provides a formal assessment of the quality of the Review report, which is provided within this report's annexed material. In addition, the Evaluation Office formally validates the report by ensuring that the performance judgments made are consistent with evidence presented in the Review report and in-line with the performance standards set out for independent evaluations. As such the project performance ratings presented in the Review report may be adjusted by the Evaluation Office. The findings and conclusions expressed herein do not necessarily reflect the views of Member States or the UNEP Programme Senior Management.

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Circular Economy approaches for the electronics sector in Nigeria
GEF ID 10141
August 2024

ACKNOWLEDGEMENTS

This Terminal Review was prepared for UNEP by Boussoura Talla and Florian Marchadour.

The reviewer would like to express their gratitude to all persons met and who contributed to this review, as listed at **ANNEX III PEOPLE CONSULTED DURING THE REVIEW**

The review consultant would like to thank the project team and in particular Mrs Eloise Touni (UNEP Task Manager) and Mrs Halima Kolo Mohammed (NESREA Project Manager) for their contribution and collaboration throughout the review process. Sincere appreciation is also expressed to all stakeholders who took time to provide comments to the draft report. The evaluator(s) would also like to thank the National Environmental Standards and Regulations Enforcement Agency (NESREA) for their support during the mission in Abuja and Lagos.

The review consultant(s) hopes that the findings, conclusions and recommendations will contribute to the successful sustainability of the current project, formulation of a next phase and to the continuous improvement of similar projects in other countries and regions.

BRIEF CONSULTANTS' BIOGRAPHY

This review is done by two (2) consultants with a strong track record on waste management and project evaluation in Africa.

Boussoura TALLA – E-Waste Expert, Mission leader

Boussoura is an expert in e-waste management and project evaluation with over a decade of experience. She has played pivotal roles in significant projects, including the 2023 Ex-post WEEECAM project evaluation with FFEM and market assessments for e-waste management in Conakry and Senegal. Her extensive work with international organizations such as UNIDO, GEF, and various development agencies highlights her robust understanding of waste management in Africa.

Florian Marchadour – International Waste Expert, Review support

Florian is an accomplished expert in waste management and project evaluation with over 15 years of experience. His expertise is evidenced by his leadership in the 2023 Ex-post WEEECAM project evaluation with FFEM and roles as Mission Chief for the "SANITA Ville propre" project and other significant waste management projects across Central Africa. His work with international development agencies like FFEM, Enabel, and AFD showcases his deep knowledge and ability to develop strategic action plans tailored to local contexts.

ABOUT THE REVIEW

Joint Review: No

Report Language(s): English.

Review Type: Terminal Review

Brief Description: This report is a Terminal Review of a UNEP/GEF project entitled "Circular Economy approaches for the electronics sector in Nigeria", GEF ID 10141 and implemented between 2019 and 2023. The project's overall development goal was to support Nigeria in adopting a financially self-sustaining circular economy approach for electronics. The review sought to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outputs, outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The review has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP, the GEF and the relevant agencies of the project participating countries.

Source(s) of Funding by Country: *Nigeria, 13,085,098 USD materialized co-finance, in-kind*

Source(s) of Funding by Institution Type:

Foundation/NGO	No
Private Sector	Yes
UN Body	Yes
Multilateral Fund	No
Environment Fund	Yes

Key words: E-waste Recycling, Sustainability, Informal Sector Integration, EPR (Extended Producer Responsibility)

Primary data collection period: June 2024

Field mission dates: July 1st – 9th 2024

ABBREVIATION TABLE

CEO	Chief Executive Officer
CPO	Consumption and Production Department (UNEP)
EPR	E-waste Producer Responsibility
EPRON	E-waste Producer Responsibility Organization Nigeria
ESM	Environmentally Sound Management
GEF	The Global Environment Facility
ILO	The International Labor Organization
LASEPA	The Lagos State Environmental Protection Agency
LAWMA	The Lagos Waste Management Authority
MTS	Medium-Term Strategy
NESREA	The National Environmental Standards and Regulations Enforcement Agency
PACE	Partnership on Accelerating the Circular Economy
PPE	Personal Protective Equipment
PSC	Project Steering Committee
PRO	Producer Responsibility Organization
RMB	Resources Market Brand Department (UNEP)
SAICM	The Strategic Approach to International Chemicals Management
SDG	The Sustainable Development Goals
UNEP	The United Nations Environment Programme
UNITAR	The United Nations Institute for Training and Research
UN	United Nations
UNU	The United Nation University
USD	United State Dollar
WEEE	Waste from Electrical and Electronic Equipment
e-waste	electronic waste
PoW	Program of Work
PIR	Project Implementation Report
EEE	Electrical and Electronic Equipment
IA	Implementing Agency
RMB	Resources and Markets Branch
EA	Executing Agency
M&E	Monitoring and Evaluation
POPs	Persistent Organic Pollutants

TABLE OF CONTENTS

TABLE OF TABLES

PROJECT IDENTIFICATION TABLE

GEF Project ID/SMA ID:	10141	SB-012761	
Implementing Agency (UNEP Division/ Branch/Unit):	Economy Division, GEF Chemicals and Waste, Chemicals and Health Branch / UNEP Resource and Market Branch	**Executing Agency:**	National Environmental Standards and Regulations Enforcement Agency of Nigeria (NESREA)
Sources of Funding (Co-finance):	*Country:* Nigeria	*Institution Name/Type:* *Private Sector* *Yes* *UN Body* *Yes* *Environment Fund* *Yes*	
Relevant SDG(s):	SDG target (1.5.2) & 12 (indicators 12.4.1, 12.4.2, 12.5.1)		
MTS (at approval):		**UNEP approval date:**	
POW Direct Outcome(s) number/reference ***(applicable for projects approved from 2022):***	*POW Direct Outcome:* *Not applicable*	**MTS 2025 Outcome(s) number/reference** ***(applicable for projects approved from 2022):***	*MTS 2025 Outcome:* *Not applicable*
OR **POW Output(s) number/reference** ***(applicable for projects approved pre-2022)***	*POW Output:* *Not applicable*	**OR** **POW Expected Accomplishment(s) number/reference** ***(applicable for projects approved pre-2022):***	*POW Expected Accomplishment:* *Not applicable*
Sub-programme:	Chemicals and pollution action subprogramme *UNEP previous Subprogramme(s):* *Subprogramme 5: Chemicals and Pollution Action*	**Programme Coordination Project:**	
UNEP approval date:	14-Mar-19	**GEF approval date:**	7-Mar-19
GEF Operational Programme #:		**GEF Strategic Priority:**	Chemicals and pollution action
Project type:	Medium Sized Project (MSP)	**Focal Area(s):**	Chemicals and Waste
***Expected* start date:**	20-May-19	**Actual start date:**	20-May-19
***Planned* completion date:**	30-Nov-22	**Actual operational completion date:**	31 May 2023
***Planned* total project budget at approval:**	USD 2.000.000	**Actual total expenditures reported as of May 2023:**	USD 1.940 311
GEF grant allocation:	USD 2,000,000	**GEF grant expenditures reported as of 30 June:**	USD 1,940,312
***Expected* Medium-Size Project/Full-Size Project co-financing:**	*Cash: USD 2,000,000* *In-kind: USD 13,086,582*	**Secured Medium-Size Project/Full-Size Project co-financing:**	*Cash: USD 2,000,000* *In-kind: USD 13,085,098*

No. of formal project revisions:	2	**Date of last approved project revision:**	30-Nov-22
No. of Steering Committee meetings:	6	**Date of Last Steering Committee meeting:**	15-May-23
Mid-term Review/ Evaluation *(planned date):*	1-Jan-21	**Mid-term Review/ Evaluation (actual date):**	15-sept-22
Terminal Evaluation/Review *(planned date):*	31-May-24	**Terminal Evaluation/Review (actual date):**	30-Sept-24
Coverage - Country(ies):	Nigeria	**Coverage - Region(s):**	Africa
Dates of previous project phases:	Not Applicable	**Status of future project phases:**	Not Applicable

EXECUTIVE SUMMARY

1. This terminal review evaluates the "Circular Economy Approaches for the Electronics Sector in Nigeria" project, implemented by the United Nations Environment Programme (UNEP) with support from the Global Environment Facility (GEF). The project aimed to address the growing problem of electronic waste (e-waste) in Nigeria by promoting sustainable e-waste management practices, implementing Extended Producer Responsibility (EPR) legislation, and supporting the establishment of collection and recycling systems. This summary provides an overview of the project's objectives, the scope of the review, key performance ratings, and main findings, as well as lessons learned and recommendations for future initiatives.

Project Overview

2. The project focused on mitigating the environmental and human health risks associated with e-waste in Nigeria. It aimed to establish a financially self-sustaining circular economy approach for e-waste management by implementing EPR legislation, establishing collection centers, and upgrading recycling facilities. The project also aimed to engage stakeholders, including government agencies, private sector participants, and the informal sector collectors, to ensure broad participation in and support for e-waste management activities. The Medium Size Project had a total budget of USD2m, and a duration of 3 years.

Review Objectives and Scope

3. The review aimed to assess the project's effectiveness, efficiency, relevance, sustainability, and impact, providing a comprehensive evaluation of its achievements and challenges. The scope of the review included an analysis of the project's design, implementation, and outcomes, with a focus on its contribution to reducing the release of hazardous substances into the environment and improving the livelihoods of those involved in e-waste management. The Terminal Review was done just over 1 year after the end of the project, in June-August 2024 and therefore can provide insights into the medium-term sustainability of the project.

Overall Project Performance Rating

4. The overall performance of the project is rated as **Satisfactory**. The project achieved significant progress in establishing a legal and institutional framework for e-waste management, particularly with the implementation of EPR legislation and the establishment of collection centers, and in significant increases (30-85%) reported by recyclers of the amount of e-waste they were able to access and responsibly recycle. However, challenges related to the informal sector's collectors lasting behaviour change, and delays in operationalizing the Producer Responsibility Organization (PRO) system, leading to non-operational collection centers at the end of the project (May 2023), limited the full realization of the project's objectives.

    - **Effectiveness:** The project effectively established key components of a circular economy for e-waste, including the implementation of EPR legislation and the upgrade of recycling centers. However, the lack of full operationalization of the PRO system and the reversion of informal sector workers to unsafe practices after the project ended highlight areas where it didn't achieve all its intended outcomes in the medium term.

- **Efficiency:** The project demonstrated efficient use of resources, with 97% of the GEF budget utilized. Despite the economic challenges in Nigeria, including inflation and currency devaluation, the project managed to secure additional co-financing from NESREA, although expected contributions from the private sector and United Nations University (UNU) were not fully realized.
- **Sustainability:** The sustainability of project outcomes is rated as moderately likely, given the strong legal framework established and the ongoing operation of upgraded recycling centers. However, the long-term sustainability of the collection centers and the engagement of the informal sector collectors remain uncertain without continued support and incentives.

The project's performance ratings table can be found at **Table 11: Summary of project findings and ratings**, page **58**

Main Findings

5. **Strengths:**
    - **Legal Framework:** The successful implementation of EPR legislation, and the gazetting of the revised National Environment Regulation for EEE in 2022 provided a robust foundation for sustainable e-waste management in Nigeria. This demonstrates the government's strong commitment to this cause, as the development of a national e-waste management standard and the gazetting of the revised regulation were additional initiatives undertaken by NESREA, beyond the original project deliverables.
    - **Recycling Infrastructure:** The upgrade of recycling centers (Hinckley and E-Terra), combined with implemented legislation led to a significant increase in e-waste processing volumes, demonstrating the project's positive impact on recycling infrastructure.
    - **Capacity Building:** The project effectively built the capacity of stakeholders, including formal and informal recyclers, through training and the provision of Personal Protective Equipment (PPE) and the adoption of a new standard on e-waste management.
    - **Strong support from the government:** the government exceeded its planned co-financing contributions (from 9,025,000 USD to 13,085,098 USD), demonstrating strong support for e-waste management in Nigeria. This helped compensate the lower-than-expected co-financing from the private sector (Hinckley) and the absence of co-financing from the United Nations University. It also highlights dedication of the government to the project's success.

6. **Weaknesses:**
    - **Informal Sector Engagement:** The project struggled to sustain the engagement of the informal sector collectors, with many workers reverting to unsafe dismantling practices due to low incentives and the non-operational status of the PRO system.

- **Financial Sustainability:** The project faced challenges related to financial sustainability, primarily due to the non-operational status of the PRO system, which was expected to fund ongoing e-waste collection and recycling activities. The recycling facilities stated that an incentive will always be necessary for effective e-waste management, given the economic realities of the sector and negative value of some e-waste.
- **Stakeholders Participation:** The International Labour Organization (ILO), initially identified as a key partner for integrating informal workers, was not involved as anticipated, which limited the project's access to international expertise in this area.

Conclusions

7. The project made significant progress in establishing a circular economy approach for e-waste in Nigeria, particularly in terms of legal and institutional frameworks. However, the long-term impact of the project is subjected to the operationalization of the PRO system, sustained engagement with the informal sector collectors, and continued financial and technical support.
8. The review concludes that while the project laid a strong foundation for sustainable e-waste management, further efforts are required to ensure the long-term sustainability and scalability of the achievements.

Lessons Learned

9. The project evaluation provided several important lessons:
    - **Legal Framework:** An effective and enforceable legal framework is crucial for driving compliance and participation from the private sector, especially in contexts where informal practices are deeply entrenched. Amendments to existing EEE regulations are considered more enforceable than the development of voluntary guidelines.
    - **The Extended Producer Responsibility (EPR)** model is an effective approach for managing e-waste in an environmentally sound manner, with increasing corporate subscription via authorized private recyclers
    - **Importance of Data Confidentiality in EPR Systems:** The establishment of an independent organization, separate from government entities, to manage resources generated by the EPR system, such as EPRON, is a valuable approach for ensuring that funds are used effectively for e-waste treatment. However, maintaining the confidentiality of producers' commercial data is crucial for building trust. The involvement of EPRON in managing sensitive import data has created mistrust among producers, hindering the effective operation of the black box system.
    - **Ensuring End-User Involvement in Tool Development:** The development of tools like the Blackbox should engage end users right from the beginning, particularly during the drafting and validation of terms of reference. This approach ensures that important technical details, such as requiring the developer to provide the source code, are included

in the terms of reference, and that the tool is developed to meet the specific needs of the end users

- **Informal Sector Engagement:** A deep assessment of the informal sector collector's economic realities and challenges was essential during the project design phase to ensure that formal systems offer viable and sustainable economic alternatives.
- **Insufficient Timeframe for Transforming Informal Sector Practices**: Completely transforming the informal sector's practices is a long-term goal. The three-year project duration was short to achieve a sustainable behaviour change, particularly given the non-operational PRO system.
- **Impact of Informal E-Waste Brokers on Formalization Efforts:** The presence of informal e-waste brokers who selectively purchase only valuable fractions and offer higher buying prices hindered the project's efforts to shift informal actors away from dismantling practices. Without addressing these brokers, it is challenging to achieve a sustainable transition to formal e-waste management system.

Recommendations

10. Based on the evaluation findings, several recommendations have been formulated to address challenges or opportunities within this project, while others are intended for future projects:
    - It is important to continue to **strengthen the enforcement of the legal framework** to ensure compliance and participation from all sectors, including the informal sector stakeholders
    - **Strengthen PRO System**: It is recommended for the PRO database to be made operational to support the ongoing management of e-waste and to ensure the sustainability of the project's outcomes, particularly in mobilizing producers to pay levy
    - Future EPR systems in Africa should employ an independent **third party** to **manage sensitive commercial data**. This approach will help address concerns over data confidentiality, thereby improving the system's overall operationalization
    - Future tools development of Tools like Blackbox should ensure that the **end user takes the technical lead in the development process**, with the project **funding a private company for the development**. This will ensure that important technical details are considered, and the tool is designed and implemented according to the end user's specific requirements.
    - Future projects should **conduct a comprehensive assessment of the informal sector stakeholders** during the project **design phase,** including economic aspects such as the competitive cost of purchasing materials. This is a high-priority project design recommendation that should be addressed during the initial stages of similar future projects.
    - To ensure lasting transformation in the informal sector's practices, future projects of this nature should be **designed with a minimum duration of five years**, including **provisions for potential extensions** through the same or alternative donors
    - Future projects should also work on **strengthening and enforcing legislation that effectively removes informal brokers from the e-waste management value chain**. This will help ensure that informal actors fully transition to formal systems, reducing the dismantling of e-waste and promoting environmentally sound practices

11. This executive summary provides a snapshot of the project's performance, highlighting the key achievements, challenges, and lessons learned. This main review contains detailed analysis and recommendations for stakeholders and future projects in the e-waste management sector.

Validation

The report has been subject to an independent validation exercise performed by UNEP's Evaluation Office. The performance ratings for the UNEP/GEF project "Circular Economy approaches for the electronics sector in Nigeria" (GEF ID 10141), set out in the Conclusions and Recommendations section, have been adjusted as a result. The overall project performance is validated at the 'Satisfactory' level. Moreover, the Evaluation Office has found the overall quality of the report to be 'Moderately Satisfactory' (see Annex XIII).

I.INTRODUCTION

1. The purpose of this terminal review is to assess the “Circular Economy approaches for the electronics sector in Nigeria” (GEF ID 10141) project’s performance and impact, serving both learning and accountability objectives. The review will cover various aspects, including project Strategic Relevance, Effectiveness, Financial Management, Efficiency, Monitoring and Reporting, Sustainability, Factors Affecting Performance and Cross-Cutting Issues.

2. The project was justified with a deep assessment of e-waste recycling management in Nigeria and Africa at its conception. In fact, e-waste generation is rapidly increasing, with informal recycling practices leading to severe health risks and environmental pollution. Regulation existed in Nigeria, but are inadequately enforced, and the high rate of e-waste generation and importation exacerbates the problem. Private companies existed as well but are dealing with informal sector competition which have higher e-waste buying value due to low labor cost and cherry picking. As a result, there is a critical need to transition towards a circular economy model for electronics, prioritizing resource recovery, reuse, and environmentally sound disposal to mitigate these challenges. The justification for the intervention then lies in the urgent need to manage e-waste effectively due to its environmental and health hazards, coupled with the lack of a comprehensive regulatory framework and infrastructure in Nigeria.

3. The “Circular Economy approaches for the electronics sector in Nigeria” (GEF ID 10141) project aims to address the challenges of electronic waste (e-waste) management in Nigeria, particularly focusing on establishing an Extended Producer Responsibility (EPR) system and promoting circular economy approaches.

4. Initially scheduled to run for 36 months (2019-2022), the project was extended by 6 months following the COV19 pandemic. The project was therefore closed in May 2023. It operates within the framework of UNEP's Medium-Term Strategy (MTS) and Program of Work (PoW), under the Chemicals and Health Branch. It involves collaboration with various stakeholders, including governmental agencies like the National Environmental Standards and Regulations Enforcement Agency (NESREA), United Nations (UN) bodies such as UN Environment, and international Manufacturers, e-waste Recyclers, informal sector, e-waste collectors, etc.

5. The target audience for the review findings includes stakeholders involved in e-waste management in Nigeria, such as policymakers, government agencies, private sector entities, civil society organizations, and international partners: The Global Environment Facility (GEF), UNEP, …, informal sector. The findings aim to inform decision-making, improve project implementation, and contribute to broader knowledge sharing on sustainable e-waste management practices in other similar countries.

II. REVIEW METHODS

6. To comprehensively evaluate the "Circular Economy Approaches for the Electronics Sector in Nigeria" project, a multifaceted review methodology was employed, around the criteria of Relevance, Effectiveness, Efficiency, Results and Sustainability.

   The methodology incorporated several key steps:

7. **Document Review:**

   - Critical project documents review such as the initial project proposal, annual Project Implementation Reports (PIRs), the midterm review report, the final report, different market study studies, trainings documents, regulation documents, …

8. **Stakeholder Interviews:**

   - In-depth interviews during a filed mission in Abuja and Lagos from July 1st to July 9th, 2024, with primary stakeholders, including NESREA, the Federal Ministry of Environment in Abuja, the GEF, E-waste Producer Responsibility Organization Nigeria (EPRON), The Lagos Waste Management Authority (LAWMA), The Lagos State Environmental Protection Agency (LASEPA) and private sector partners like Hinckley and E-terra.
   - A focus group discussion with informal sector collectors to gather diverse perspectives

9. **Online interviews** with other stakeholders including UNEP, The Strategic Approach to International Chemicals Management (SCAIM), the United Nations Institute for Training and Research (UNITAR), EPRON, WEEE Forum and a local importer (SPL).

10. **Field Visits:**

    - Site inspections of 4 collection centers, and the 2 recycling facilities
    - Due to time constraints during the mission, only 4 out of the 30 collection centers were visited

11. **Data Analysis**

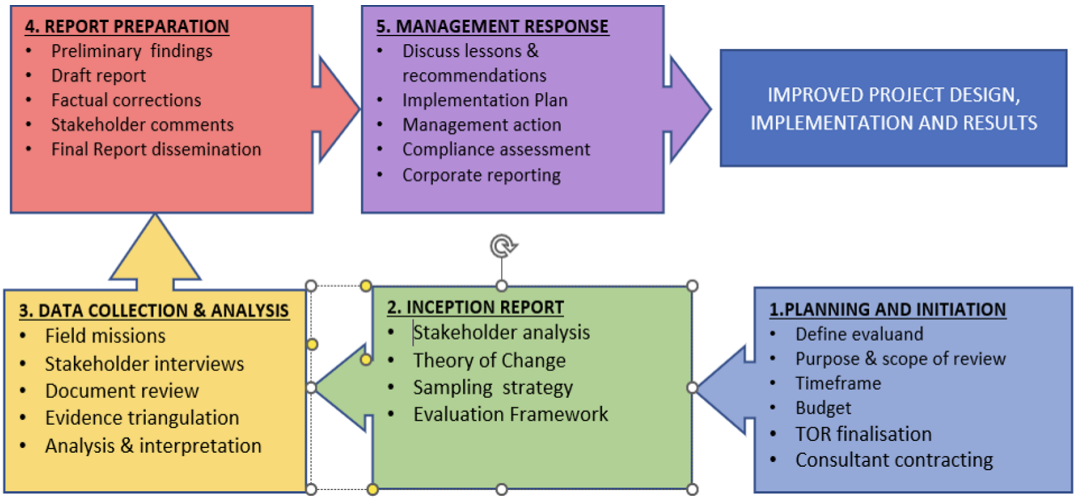
    - Assessed qualitative data from interviews, focus groups, and observational studies to understand stakeholder experiences and the project's impact.

12. **Risk and Mitigation Assessment:**

    - Identified key risks encountered during the project, including market fluctuations, COVID-19 impacts, and challenges within the informal sector.
    - Evaluated the effectiveness of mitigation strategies implemented and suggested improvements for future projects.

13. This comprehensive approach ensured a thorough evaluation of the project's performance, impact, and areas for future enhancement.

Illustration 1: UNEP Review Process



III. THE PROJECT

A. Context

14. The "Circular Economy Approaches for the Electronics Sector in Nigeria" project addresses the pressing issue of e-waste management, which poses severe environmental and public health risks due to improper handling and disposal. As Nigeria experiences rapid urbanization and technological growth, the influx of electrical and electronic equipment (EEE) has led to an increasing generation of e-waste. This waste often contains hazardous substances like lead, mercury, and brominated flame retardants, which, when improperly managed, can cause significant environmental contamination and health problems.

15. **The root causes** of this issue include weak regulatory enforcement, a predominantly informal recycling sector, and the high costs associated with environmentally sound waste treatment. Despite existing regulations such as the EPR legislation and Nigeria's adherence to the Basel Convention, enforcement is inconsistent, and illegal e-waste imports are common. The informal sector, comprising marginalized groups including women, lacks the necessary equipment and facilities, leading to unsafe recycling practices that expose workers to hazardous chemicals and perpetuate environmental pollution.

16. **The consequences of these challenges** are significant. Environmental degradation from improper e-waste disposal contaminates air, water, and soil, while the health impacts on workers include respiratory issues, skin diseases, and long-term exposure to toxic heavy metals. Economically, the loss of recoverable materials and the burden of environmental cleanup and healthcare costs strain government resources and communities.

17. **Institutionally**, Nigeria has frameworks such as the NESREA Act, which established the National Environmental Standards and Regulations Enforcement Agency (NESREA) to oversee environmental laws. However, the effectiveness of these regulations is undermined by resource limitations, insufficient technical capacity, and low public awareness. The Extended Producer Responsibility Organization of Nigeria (EPRON) was created to manage the EPR system but is not yet fully operational, hindering its ability to ensure producers' accountability for their products' entire lifecycle.

18. **External challenges**, including economic instability, fluctuating exchange rates, and the COVID-19 pandemic, further complicated the project's implementation. The informal sector's entrenched practices, driven by economic necessity, also posed a significant barrier to transitioning to formalized and sustainable e-waste management practices.

19. **Geographically**, the project focuses on Lagos, where most e-waste generation and informal recycling occur. Lagos, as Nigeria’s largest city, serves as a hub for both e-waste generation and informal recycling, particularly in areas like Alaba Market and Ikeja Computer Village. These densely populated locations are central to the project's efforts to improve e-waste management by developing formalized recycling infrastructure and promoting sustainable practices.

20. **In summary**, the project seeks to mitigate the environmental and health impacts of e-waste in Nigeria by enhancing regulatory enforcement, formalizing the informal sector, and fostering sustainable recycling methods. However, achieving these goals will require overcoming significant socio-economic, institutional, and political barriers.

B. Results Framework

21. The table below outlines the project's results framework as it was established at the project design phase. It remained unchanged throughout both the project execution and the review process.

Table 1: Project Results Framework

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
The electronics sector recovers and reintroduces usable materials into the value chain and disposes of hazardous waste streams in an environmentally sound manner.	Tons of recyclable material which are recovered and re-entering the value chain locally and internationally.	0 tons of recyclable material are recovered by the EPR program	10.8 kg of precious metals (Ag, Au, Pd), 150 tons of common metals (Fe, Al, Cu), 90 tons of plastics re-entering the value chain from 300 tons of collected e-waste	Activity report and auditing report from the contracted recyclers	Assumptions: EPR and PROs are functional Assumption: sufficient e-waste is collected, and contracts are issued with licensed recyclers Licensed recyclers adhere to EHS standards Risk: competition from the informal sector for collection	N/A
	Tons of hazardous fractions from e-waste which are safely disposed of, treated or channeled to appropriate treatment facilities	A small portion of the e-waste is collected and 200 tons recycled in 2017 by 2 recyclers registered by NESREA while the majority is recycled by the informal sector unsustainably and without safeguards	30 tons of CRT lead glass, and 3 tons of other hazardous fractions (CFC contained foams, mercury, batteries, frame retardants and POPs containing plastics) are safely stored or treated by Environmentally Sound Management (ESM) facilities	Basel destruction certificates	Assumption: ESM facilities are not available in Nigeria, and hazardous fractions need to be exported for environmentally sound treatment	N/A
Output 1. The Government of Nigeria and	Number of e-waste producers registered in	Nigeria has EPR legislation but no detailed roadmap.	Year 1 – 20 producers join. Roadmap published & database established.	PRO database	NESREA is committed to enforcing the EPR legislation and integrates the agreed	Chemicals, Waste and Air Quality Expected

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
Producers jointly implement the EPR legislation for the electronics sector	Extended Producer Responsibility (EPR) programs PROs	Currently being implemented by NESREA as a voluntary initiative. PRO is legally established but with no registered members or systems e.g. registration database or staff.	Year 3 – 150 producers have joined the EPR programs. Inspectors trained and actively promoting EPR.		roadmap into its annual work and budget planning. Groups of producers establish PROs and cover costs until levy is established and generating revenue.	Accomplishment 5 (a) 3 Subprogram 6 on Resource Efficiency, EA b, Output 1 (ii)
	Amount of levy (USD) collected by PROs	No levy is collected towards any producers in Nigeria	Year 1 – level of levy calculated Year 3 – 100,000 USD of levy is committed	PRO database	Producers – global and local – are committed and voluntarily pay levy	
Output 2. 300 tons of e-waste are collected through formalized collection channels that minimize environmental and health impacts	Number of collection channels and points created within the EPR program	National estimated collection rate of e-waste is 52%. Lagos has two formal collecting organizations, LAWMA and LASEPA.	Minimum of 30 collection points and channels are established for the EPR program, with communication package in place	Environmental permits	NESREA to support the communication to and education of consumers	Subprogram 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (ii)
	Number of collectors gaining employment in the formal sector or with improved conditions in the informal sector (male/female)	Operational guidelines by NESREA exist ILO program on formalization – Decent Work in e-waste sector Various projects exist on informal sector	Minimum of 50 collectors employed or contracted by collection channels of the EPR program, 30% female	Payment slips	Risk: Inability of the formalized sector to absorb and integrate informal collectors	

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
	Amount of e-waste safely collected and delivered to ESM facilities	540,000 tons e-waste estimated collected in Nigeria in 2010 by the informal sector. 0 tons of e-waste collected by the formal organizations in Lagos.	300 tons of e-waste are collected and delivered to ESM facilities by the EPR program **with all type of e-waste represented**	Records kept by partner organizations	Assumption: Awareness change in and engagement of consumers to ensure delivery of products to formal collection channels	
Output 3 Establish cost-effective recycling and disposal systems for various e-waste categories	Number of recycling centers established for ESM treatment enforcing EHS standards	2 formal recyclers for ESM of limited electronics types operational and licensed by NESREA since 2016 (Hinckley Recycling and E-Terra Technologies Ltd.)	2 pre-treatment and/or recycling centers are set up and fully operational for at least 3 product categories	Environmental permits issued by NESREA	Assumption: Pre-processing facilities are established as in-kind contribution from recycling companies	Subprogram 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (ii)
	Number of formal recycling workers gaining employment (male/ female)	0 formal recycling workers employed by the EPR program	50 formal recycling workers employed in the context of the EPR program, at least 30% female	Contracts	Risk: Recyclers choose to prefer informal sector due to greater revenue and profit.	
	Tons of e-waste collected and hazardous components safely stored pending disposal	No system existing to collect or export hazardous fractions for safe trip treatment	Year 1: 1 technical roadmap on management Year 3: 300 tons of waste collected hazardous components segregated	Storage facility and records	Assumption: strong database is created to track the hazardous wastes and ensure they are securely stored until disposal time.	
Output 4 Regional and global knowledge exchange on	Number of global companies financially supporting	Partnership on Accelerating the Circular Economy (PACE) network and	Year 3: At least 5 global companies including member companies of	Global fund established	Not all global companies choose to participate Local companies freeloading	Subprogramme 5 Chemicals, waste and air quality:

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
Circular economy models for the electronics sector	establishment of PROs in Africa	Alliance members have initiated PRO in Nigeria	PACE supporting PROs in Africa			Expected accomplishment a, indicator (ii)
	Number of users accessing success cases via the KM platform	Technical guidance and briefings exist on circular approaches but limited publications on successful experiences by value chain actors	Year 3: 5 success cases on circular electronics published (e.g. on eco innovation, fund for PROs, phase out of CoC) Year 3: At least 100 downloads of case studies and Reports to SAICM regional meetings and ICCM5 in 2020	Case study publications and website statistics	Limited engagement of global brands in changing upstream chemicals and other sustainability management approaches.	

C. Stakeholders

22. The following table outlines the key stakeholder groups involved in the project, categorized according to their roles, responsibilities, and contributions to the project's objectives. It highlights the interests and influence of each group, identifies key change agents, and considers the inclusion of underrepresented and marginalized groups, such as women.

23. Stakeholder groups include relevant government entities, private sector participants, informal sector collectors, and international partners, all of whom played a critical role in the project's implementation and success.

Table 2: Project's stakeholders

Stakeholder Group	Roles/Responsibilities	Interest/Influence	Contributions/Benefits	Key Change Agents
International Organizations and Donors	Provide financial support, technical assistance, international expertise	Focus on promoting sustainable development and environmental protection	Ensure project aligns with best practices, achieve long-term objectives	UNEP, GEF
Government Agencies	Enforce regulations, provide oversight for e-waste management	High influence in ensuring compliance with environmental standards	Drive policy updates, ensure EPR framework enforcement	NESREA and other regulatory bodies
Extended Producer Responsibility Organization of Nigeria	Manage the EPR system, register producers, oversee compliance	Key role in operationalizing the EPR system	Facilitate producer compliance, manage e-waste flows	EPRON
Municipalities and State Government Waste Management Institutions	Local e-waste collection, supporting informal collectors	Crucial for local implementation, enforcement and informal sector involvement	Improve e-waste collection efficiency, enhance local compliance	LAWMA, LASEPA
Private Sector Participants	Adhere to EPR legislation, establish sustainable recycling practices	Interested in operational efficiency, market access, and compliance	Benefit from improved efficiency, new markets, and competitiveness	E-waste recyclers (Hinckley, E-Terra), importers
Informal Sector Collectors and collection centers	Collect e-waste	Crucial role in e-waste collection	Gain formal employment, training, safer working conditions	Informal waste pickers and collection centers
Underrepresented and Marginalized Groups	Participate in e-waste collection, receive training and PPE	Important for promoting gender equality and inclusion	Access to better income, improved safety, and formal employment	Women in waste picking

Stakeholder Group	Roles/Responsibilities	Interest/Influence	Contributions/Benefits	Key Change Agents
Global Level Partners	Share best practices, provide guidance on global standards	Influence in aligning the project with international standards	Enhance knowledge exchange, provide global insights	SAICM, WEEE Forum

D. Project implementation structure and partners

24. The implementation of the project was structured to ensure effective collaboration between various agencies, stakeholders, and partners, with clear roles and responsibilities outlined for each. The project's implementation was managed by UNEP as the Implementing Agency (IA) and NESREA as the Executing Agency (EA). This structure ensured that the project is aligned with international best practices while being tailored to the local context in Nigeria.

25. UNEP, as the Implementing Agency, provided oversight, strategic guidance, and ensured compliance with the GEF policies and procedures. UNEP was responsible for the overall supervision of the project, including the monitoring of progress, financial management, and reporting to GEF.

26. NESREA, the Executing Agency, played a critical role in the day-to-day management and execution of project activities. NESREA was responsible for coordinating with local stakeholders, implementing the EPR legislation, and ensuring the project's alignment with national policies and regulations. NESREA also managed the project's financial resources, ensuring that funds were appropriately allocated and utilized for the intended purposes.

27. The project also involved several key partners, including EPRON, which was tasked with operationalizing the EPR system, and local government entities such as LAWMA and the LASEPA, which supported the establishment and operation of e-waste collection centers. Private sector participants, such as Hinckley and E-Terra, were involved in the recycling process, ensuring the effective management of e-waste. International partners, including SAICM, UNEP's Resources & Markets Branch and the WEEE Forum, provided technical assistance, knowledge exchange opportunities, and supported the project's global alignment with circular economy principles.

28. The table below provides an overview of the project's implementation structure, key partners, and their roles.

Table 3: Project implementation structure and partners

Partner	Role in Project Delivery and Performance
UNEP (Implementing Agency)	Oversight, strategic guidance, compliance with GEF policies
NESREA (Executing Agency)	Day-to-day management, coordination with stakeholders, implementation of EPR legislation
EPRON	Operationalization of the EPR system
Lagos State Waste Management Authority (LAWMA)	Support for e-waste collection and management in Lagos
Lagos State Environmental Protection Agency (LASEPA)	Oversight of environmental compliance in Lagos
Hinckley	Recycling of collected e-waste
E-Terra	Recycling of collected e-waste
UNEP RMB	Technical assistance, global alignment with circular economy principles
SAICM	Knowledge management and promotion of project results to global community on chemical management
WEEE Forum	Knowledge exchange, international best practices, support for EPR system implementation

E. Changes in design during implementation

29. The project faced significant disruption due to the COVID19 pandemic, which severely slowed down all field activities and impacted the entire WEEE recycling sector, mainly due to the global trade slowdown, in 2020. This situation affected UNEP's ability to monitor the project, as only two on-site missions were conducted by the management team, and most of the monitoring activities were therefore carried out via monthly video-conference meetings. The project duration was also extended by 6 months, with no-cost extension. This was approved on November 30th, 2022, extending the project's end date to May 31, 2023. Despite these challenges, the logical framework, outputs/outcomes and indicators remained unchanged throughout the project execution.

30. The organizations providing co-financing and the amounts contributed were adjusted between the project design and its implementation: Hinckley's co-financing was lower than anticipated, and UNU's contribution was not obtained by the end of the project. However, NESREA's contribution was increased, and EPRON's co-financing was added.

F. Project financing

31. The budget managed by NESREA was increased by USD 75,000, raising it from USD 1,500,000 to USD 1,575,000 during the project execution. This budget adjustment coincided with a 6-month extension of the project's duration, extending the completion date to May 31, 2023.

These changes were formalized in Amendment No. 1, signed by UNEP and NESREA on May 23, 2022.

Table 4: Budget at design and expenditure by Outcome/Output

Component/sub-component/output *All figures as USD*	**Estimated cost at design (USD)**	**Actual Cost/ expenditure (USD)**	**Expenditure ratio (actual/planned)**
Output 1. The Government of Nigeria and Producers jointly implement the EPR legislation for the electronics sector	345.000	340.734	98.8%
Output 2. 300 tons of e-waste are collected through formalized collection channels that minimize environmental and health impacts	455.000	418.215	92%
Output 3 Establish cost-effective recycling and disposal systems for various e-waste categories	525.000	496.124	94,5%
Output 4 Regional and global knowledge exchange on Circular economy models for the electronics sector	355.000	365 311	103%
M&E	130.000	138.927	106,8%
PMC	190.000	181.000	95,2%
Total	**2.000.000**	**1.940 311**	**97%**

IV. THEORY OF CHANGE AT REVIEW

32. The initial TOC provided a strong framework, but the actual implementation revealed several areas where the assumptions did not hold, and the drivers were not fully realized. These gaps, particularly around the informal sector collectors, the PRO system, and global manufacturer engagement, need to be addressed in future projects to achieve the intended long-term impacts.

33. The table provides a justification for suggested reformulation of some elements in the Theory of Change, aligning it with lessons learned and practical considerations for future similar projects.

Table 5: Justification for Reformulation of Results Statements

Formulation in Original Project Document(s)	Formulation for Future Similar Projects	Justification for Reformulation
Assumption: Informal workers perceive benefits of formalizing and are motivated to change practices.	**Driver:** Formalization of e-waste collection provides clear economic benefits to informal workers, supported by awareness campaigns on health risks.	Reformulated as a driver since it requires proactive measures to ensure informal workers see the benefits and are motivated to change.
Output 3: Develop cost-effective recycling and disposal systems for various e-waste categories.	**Output 3:** Establish cost-effective and inclusive recycling and disposal systems that address all e-waste categories, with attention to competitive buy-back prices in the informal sector.	Added specificity about the need to consider competitive buy-back prices to ensure informal sector cooperation.
Intermediate State: Nigeria adopts a financially self-sustaining circular economy approach for electronics.	**Intermediate State:** Nigeria adopts a financially self-sustaining and regulated circular economy for electronics, supported by effective EPR systems, ongoing awareness campaigns, and enforced regulations.	Expanded to include the importance of regulation enforcement, effective EPR systems, and awareness campaigns for achieving long-term impacts.

V. REVIEW FINDINGS

A. Strategic Relevance - Highly Satisfactory (HS)

34. **Nigeria is at risk of becoming a dumping ground for e-waste from developed nations.** Each year, over half a million tons of discarded electronic devices are processed in the country, posing serious health risks to workers in the informal recycling sector and causing significant environmental damage. Supported by the GEF, the Nigerian government, in collaboration with UN Environment and other partners, has launched the Circular Economy Approaches for the Electronics Sector in Nigeria project to tackle this critical issue.

35. The "Circular Economy Approaches for the Electronics Sector in Nigeria" project aligns with global and national environmental priorities, supporting Sustainable Development Goals (SDGs), the Basel Convention, and SAICM, and addressing e-waste risks. It enhances Nigeria's Vision 20:2020 through EPR legislation, promoting sustainable practices.

36. The project complements existing initiatives, aligning with GEF priorities to reduce chemicals of concern and promoting circular economy principles. It supports UNEP's Medium-Term Strategy by improving resource efficiency, pollution prevention, environmental governance, and ecosystem resilience.

Alignment with Global and National Environmental Priorities

37. **The "Circular Economy Approaches for the Electronics Sector in Nigeria" project aligns with both global and national environmental priorities.** Globally, the project supports the United Nations SDGs, specifically **SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action)**. Additionally, it aligns with international agreements such as the Basel Convention, which aims to reduce the movements of hazardous waste between nations, and the SAICM.

38. On a national level, the project is consistent with Nigeria's Vision 20:2020 and the National Environmental (Electrical/Electronics Sector) Regulations 2011, which emphasize sustainable development and environmental protection. The project is being deployed in a country where there is a genuine political will to address the problem of e-waste management. Nigeria has existing legislation, even though in need of updating, and an entity (EPRON) created with the aim of setting up an extended producer responsibility mechanism for e-waste management.

Addressing Key Environmental Issues

39. The project directly addresses critical environmental issues in Nigeria, such as the improper management of e-waste, especially by the informal sector workers, which poses significant health and environmental risks. By implementing a circular economy approach, the project aims to reduce the environmental impact of electronic waste through effective recycling and disposal mechanisms. This approach not only mitigates the negative effects of e-waste but also promotes resource efficiency and job creation.

Contribution to the Development of National Policies

40. The project has significantly contributed to the development and enhancement of national policies related to e-waste management. The implementation of EPR legislation has created a regulatory framework that compels producers to take responsibility for the end-of-life management of their products. This policy framework encourages sustainable practices among producers and consumers, fostering a culture of environmental responsibility.

Alignment with GEF Focal Area Strategies

41. The project is submitted under the Chemicals and Waste Focal Area under GEF-7. **It directly contributes to Indicator 9 on the reduction of chemicals of global concern and addresses all three multilateral instruments for which GEF is the financial mechanism**, namely the Stockholm Convention, Minamata Convention, and SAICM. The reduction of new Persistent Organic Pollutants (POPs) and endocrine disruptors in plastic components of e-waste, including the reduction of dioxins and furans created by burning these plastics, will directly contribute to Nigeria's implementation of both the Stockholm Convention and SAICM. The reduction of mercury in CRT screens is also significant for managing mercury waste. Finally, **the project aims to establish a long-term and sustainable mechanism for continued environmentally sound management of these wastes into the future**, through the application of the country's EPR legislation and associated Producer Responsibility Organizations (PROs), contributing also to the GEF focal area indicator in countries with operational legislative and regulatory systems.

Alignment with UNEP's Medium-Term Strategy (2018-2021)

42. This project aligns with UNEP's Medium-Term Strategy by:

- **Strengthening Environmental Governance:** Implementing EPR legislation to ensure effective e-waste management and compliance with international standards.
- **Enhancing Pollution Prevention:** Reducing the release of harmful pollutants like POPs and mercury through improved e-waste practices in the informal sector.
- **Improving Health and Environment:** Promoting safe recycling processes and providing training and protective equipment to informal recyclers, reducing health risks.

Rating for Strategic Relevance:	**Highly Satisfactory (HS)**

B. Quality of Project Design - Satisfactory (S)

43. Below the assessment of the Project Design Quality at the inception phase.

Project Strengths

- **Stakeholder Engagement:** Involves a wide range of stakeholders, enhancing ownership and collaboration.
- **Gender and Socio-Economic Considerations:** Demonstrates commitment to gender equality and social inclusion, empowering women in the sector.
- **Capacity Building:** Includes training and awareness programs to enhance stakeholder skills and knowledge.
- **Private Sector Engagement:** Engages major electronics manufacturers and recyclers, indicating potential for sustainability and scalability.
- **Risk Management:** Identifies and addresses risks with well-defined mitigation measures.

Weaknesses

- **Financial Dependency:** High reliance on financial contributions from stakeholders, with risks related to securing adequate funding
- **Regulatory Compliance:** Challenges in achieving full regulatory compliance within the project's short timescale
- **Assumptions and Dependencies:** Risks related to assumptions about stakeholder behavior, market dynamics, and regulatory enforcement
- **Informal Sector Behavior Change:** Integration of the informal sector may be difficult without addressing financial motivations
- **Limited Scope, attributable to the project medium scale (Medium Size project):** Focuses on three e-waste categories, not addressing the global e-waste issue comprehensively
- **Cost of Hazardous Chemicals Treatment:** Sustainability risks due to reliance on private sector economies of scale amidst competition from the informal sector.

44. The project review led to an **updated assessment:**

The project's strengths were confirmed; however, not all risks were initially identified. **A major unanticipated risk was the low buying price compared to the market price, which the project did not plan for.**

45. Some weaknesses were mitigated to some extent:

- **Financial Dependency:** Despite delays, the government successfully fulfilled its contribution. However, private sector investment was not initially assessed, and Hinckley's co-financing

was lower than expected. Additionally, there is no evidence confirming that UNU met their co-financing commitments. Despite these challenges, the project successfully executed its activities and delivered outputs effectively.

- **Regulatory Compliance:** Legislation was updated during the project lifecycle, with on-going enforcement actions (EPR legislation was completed in 2020 and the revised National Environment Regulation for EEE was gazetted in 2022) Given the short project timeline, this achievement is a good foundation for future full regulatory compliance.
- **Limited Scope:** Although the project's scope was limited, the existing private sector played a crucial role in managing all types of collected e-waste. As private recyclers were already in business before the project began, we were able to manage all types of e-waste collected, either directly or through partners. While they faced challenges, their prior experience allowed them to successfully navigate and address the issues related to managing the collected e-waste.

46. However, certain issues persisted:

    - **Informal Sector Behaviour Change:** The informal sector collectors reverted to dismantling activities at the project's end because the project stopped paying for collection and the low level of levy. This highlights the fact that there should de deeper consideration of informal collectors' financial aspects at project design. In fact, informal actors are mainly motivated by income increase. **Training them is important, but any behaviour change from their side should consider income increase from their side.** A robust legal framework, coupled with strict enforcement measures from authorities, is essential to compel informal workers to comply with environmental standards and to ban practices such as uncontrolled dismantling.
    - **Assumptions and Dependencies:** Assumptions regarding informal sector behaviour changes without aligning to e-waste market prices resulted in sustainability issues.

      Additionally, some assumptions were optimistic. Key partners, such as ILO, were not engaged during project execution. Additionally, Nigeria's economic situation remained unstable, with the inflation rate increasing from 11.4% per year in 2019 to 24.7% per year in 2023, which has a direct impact on EEE imports and the recycling market. Moreover, the complexity of implementing the regulations further compounded the challenges faced by the project.
    - **Cost of Hazardous Chemicals Treatment:** Private sector companies indicated that they cannot sustain their operations solely through economies of scale and will always require EPR funding for certain types of e-waste. So, the project design shouldn't consider that the high cost of hazardous chemicals will be covered through economies of scale by private sector.

47. The assessment of the project's design quality is included at **ANNEX XIV - ASSESSMENT OF PROJECT DESIGN QUALITY DESIGN**

Rating for Quality of Project Design: Satisfactory (S)

C. Nature of the External Context

48. The external context of the project was generally stable, but the economic conditions and the global pandemic presented moderate challenges that intermittently affected project operations. The security and political contexts remained supportive.

- **Economic Conditions**:

Nigeria's economic situation during the project period was challenging. The exchange rate fluctuated significantly, increasing from N305/$1 in 2019 to N531/$1 in 2023, and inflation rose from 11.4% to 24.7%. This devaluation impacted the cost of imported goods and services, likely causing budgetary constraints and operational challenges. While the project still utilized 97% of its GEF budget, the financial environment undoubtedly affected project efficiency and sustainability.

- **COVID-19 Pandemic**:

The COVID-19 pandemic significantly impacted project operations. Many field activities slowed down, and only two on-site missions were conducted during the project period. This led to a 6-month no-cost extension. However, the pandemic did not seem to have a negative impact on the project's financial statements.

- **Political Context**:

The government of Nigeria showed strong support for the project, exceeding its planned co-financing contributions. This indicates a relatively stable and supportive political environment for project execution

- **Security Situation**:

There were no significant reports of security issues affecting project operations, staff, or partners in the field.

- **Climatic Events**:

There were no references to extreme climatic events disrupting project activities.

Rating for Nature of External Context is: Favourable (S)

D. Effectiveness - Moderately Satisfactory (MS)

49. This assessment of effectiveness spans three key dimensions: delivery of outputs, achievement of project outcomes, and likelihood of impact. The terminal review places equal importance on all three dimensions, with insights into the likelihood of impact being particularly valuable for understanding the long-term sustainability and success of the project's efforts.

a. Delivery of outputs & achievement of project outcomes - Moderately Satisfactory (MS)

EPR Legislation and Enforcement:

50. The project successfully updated the EEE sector regulations, making it mandatory for importers to register and comply with EPR requirements. EPR legislation was completed in 2020, with enforcement actions ongoing. The revised National Environment Regulation for EEE was gazetted in 2022, providing a strong legal framework for e-waste management.

51. NESREA ensures that importers and manufacturers subscribe to the EPR system, while EPRON is responsible for setting the subscription amounts. For each import of EEE, a document issued by NESREA is required by customs to ensure compliance with the EPR framework. **The development and implementation of the PRO database, known as the "*Black Box*", encountered significant delays and challenges, stemming from disagreements and mismanagement between NESREA and EPRON**.

52. Initially, NESREA engaged a consultant in 2021 to develop the *Black Box*. NESREA claimed that part of the delay was due to EPRON's desire for a custom gateway and lack of budget to host the *Black Box*, which extended the implementation timeline. However, EPRON highlighted that the first consultant hired by NESREA completed the *Black Box* development in 2021 but refused to deliver the source code, a crucial deliverable that was not specified in the terms of reference. To address the issue, NESREA hired a second consultant, who completed the new version of the *Black Box* in 2023. EPRON got the documentation for the software released on July 11, 2024, two (2) days before our mission in Nigeria.

53. Additionally, one of the producers involved in EPRON reported that the Black box was not developed according to the specific needs and expectations of EPRON. This resulted in a misalignment between the tool's final design and the operational requirements crucial for its effective integration and function within the EPR system

54. **EPRON has a total of 108 producers registered at the time of the terminal review vs 150 planned by the project,** i.e. 72% of the project indicator**.** However, producers are not paying fees while importing due to the database (black box) not being operational. In fact, **Local producers are reluctant to provide internal and confidential information** needed to define the fees without assurances that their information will be kept confidential. This concern is particularly heightened by the fact that competitors are involved in the EPRON organization, which could compromise the confidentiality of their information if the black box is managed internally by EPRON. **They prefer the black box to be managed by a third party.** This preference was originally built into the EPR plan that was approved. Negotiations with EPRON and the selected third-party were in the final stages at the time of this terminal review.

55. Registered producers currently pay a **flat annual fee: 200,000 naira** for **new registration** and **100,000 naira** for **renewal**. Additional fees based on market share will be applied once the *Black Box* is operational.

56. As a result, **the PRO database is not yet operational, causing delays in full implementation of the EPR system in Nigeria.**

57. The project initially aimed to collect 100,000 USD in taxes by Year 3 (Outcome 1). However, the actual collection is only 16,200 USD, representing just 16.2% of the target. This included 13,900 USD from MTN in 2019, 263 USD in 2020, 1,280 USD in 2021, and 756 USD in 2022.

E-waste collection

305 tons of e-waste collected, but informal actors resumed dismantling activities

58. **The project achieved its collection target by collecting 305 tons of e-waste, surpassing the goal of 300 tones.** This demonstrates the project's effectiveness in establishing a functioning collection system and indicates good operational management and strong stakeholder participation. Despite this success, several challenges remain. **Informal collectors have reverted to dismantling e-waste due to the low level of levy and the non-operational PRO system.** Although the informal sector collectors **appreciated the training and capacity building**, recognizing the project's role in raising awareness about e-waste recycling and associated risks, they face financial realities.

59. During the focus group with informal actors, some reported that the low levy offered during the project's execution led informal collectors to remove valuable components, such as compressors from air conditioners and freezers, which held significantly higher value when sold to informal brokers. The less valuable or non-valuable parts were then taken to the project's collection centers. This practice, confirmed during visits to two collection centers and discussions with Hinckley, highlighted that the economic incentives provided were inadequate to prevent such behaviours. The compensation provided during the project was insufficient compared to the earnings from dismantling. Informal collectors expressed a preference to stop dismantling and sell e-waste "as a whole" to formal recyclers. However, **with the project now closed and no payments being made for e-waste collection, they have resumed dismantling and selling valuable parts.**

60. It's important to note that this was a Medium Size Project, with a total budget of USD 2 million and activities to be executed over a period of 3 years. Given the limited budget and short timeframe, achieving a significant behavior change among informal actors was particularly challenging. The scale and scope of the project were constrained by these factors, making it difficult to fully transform the informal e-waste sector within the available resources and time.

30 collection centers established during the project lifecycle, but not operating at the time of the terminal review

61. **During the project lifecycle, 30 collection centers were established.** The establishment of these centers is a **significant achievement,** providing the necessary infrastructure for e-waste collection. However, **informal collectors stopped bringing e-waste to the collection centers and reverted to dismantling due to the low level of levy and the non-operational PRO system.** Consequently, **the collection centers were not operational at the time of the terminal review.**

Picture 1: JDP Waste Management and MRI Collection Center in Lagos (Boussoura Talla, July 2024)

E-waste recycling

Increasing collection volume for private recyclers through legislative support

62. **The two recycling centers, Hinckley and E-Terra, continue to operate and have increased their volumes, thanks to the new legislation**. **These centers were upgraded** with machinery, building extensions, and improved collection vehicles, indicating a positive and lasting impact on recycling infrastructure. **The legislation has been effective in supporting the recycling process,** demonstrating successful policy implementation with private sector involvement.

63. Both recyclers reported significant growth due to the project. E-Terra increased its collection volume by 50-85%, while Hinckley saw over a 30% increase, especially from B2B sources. The two recyclers were able to manage all types of e-waste collected by the project, thanks to their knowledge and connections with global recyclers. However, they struggled with some e-waste, such as fridges. **They highlighted the need for future projects to provide support to local recyclers in connecting with international recyclers and managing the Basel notification process.**

Picture 2: Hinckley Recycling Center in Lagos (Boussoura Talla, 2024)

Picture 3: E-Terra Recycling Center in Lagos (Boussoura Talla, 2024)

Capacity Building & Standards Development

64. Training programs were conducted for inspectors and producers in 2020. **Over 350 informal collectors received training and PPE.** Specific examples include training provided by E-Terra, leading to increased collection volumes and the use of PPE by informal collectors.

65. To ensure environmentally **sound practices** across the e-waste management chain, collection and recycling standards were developed and adopted by the Standards Organization of Nigeria. **An accreditation process** for collectors, collection centers, and recyclers has also been established.

Regional and global knowledge exchange

Engaging global companies

66. The project engaged global companies to pay the levy for e-waste recycling **through their local channels**. This was partly due to the regulatory definition of a producer as the entity putting products on the market, not the original manufacturer. Although regular engagement meetings were held with global manufacturers and EPRON, the lack of an operational *Black Box* discouraged full participation and direct support. Stakeholders also reported that it's difficult for a country to enforce a company that is not based locally.

67. The target of engaging at least 5 global companies directly supporting PROs in Africa was achieved through local channels.

Success Cases on Circular Electronics

68. **The project made significant strides in regional and global knowledge exchange by participating in international forums** (such as the SAICM regional meetings and ICCM5, StEP webinar, World Resources Forum workshops,…), **mainly during the first years of the project** (StEP webinar in 2019, World Resources Forum in 2019 and 2021) through side events in international conferences and forums (e.g West African Clean Energy & Environment Exhibition & Conference (WACEE) in 2020) and **by publishing success cases, during the last two years of the project:** From July 2022 to May 2023, case studies on EPR policy development, data management, and the collection and recycling pilot were developed and uploaded to the project website. Additionally, the report "Towards a Circular Economy for the Electronics Sector in Africa: Overview, Actions and Recommendations" was released in June 2022, with the publication webpage receiving over 1500 visits by June 2023.

69. **The publication of these case studies and the report represents a significant achievement in disseminating knowledge and promoting circular economy practices.** This milestone was successfully met, contributing to the project's broader goals of knowledge exchange and capacity building.

70. The table below provides level of completion of different outputs.

Table 6: Effectiveness

Outcome / Outputs	Target and Monitoring milestones	Deliverables	Level of achievement (at June 2023)	Comments
The electronics sector recovers and reintroduces usable materials into the value chain and disposes of hazardous waste streams in an environmentally sound manner	10.8 kg of precious metals (Ag, Au, Pd), 150 tons of common metals (Fe, Al, Cu), 90 tons of plastics reentering the value chain from 300tons of collected e-waste	Final Report (NESREA) / PIR 2023	88%	11.7 kg of precious metals, 144.54 tons of common metals (Fe, Al, Cu) has re-entered in the local value chain, and 67.88 tons of plastics entered in the international value chain (used for green concrete by Vanden Global Limited Hong Kong).
	30 tons of CRT lead glass, and 3 tons of other hazardous fractions (CFC contained foams, mercury, batteries, frame retardants and POPs containing plastics) are safely stored or treated by Environmentally Sound Management (ESM) facilities	Final Report (NESREA) / PIR 2023	70%	13.96 tons of CRT lead glass/Barium Glass treated by Environmentally Sound Management (ESM) facilities and 20.32 tons of other hazardous fractions undergoing processing.
Output 1. The Government of Nigeria and Producers jointly implement the EPR legislation for the electronics sector	150 producers have joined the EPR programs. Inspectors trained and actively promoting EPR 100,000 USD of levy is committed	PRO database (EPRON) /Conducted interviews / PIR 2023?	60%	Legislation is updated with enforcement actions ongoing. PRO database was developed twice but is still not operational. 108 local importers (referred as producers) joined the EPR program by June 2023. As the PRO database is not operational, there is no commitment on levy from local importers.
Output 2. 300 tons of e-waste are collected through formalized collection channels that minimize environmental and health impacts	Minimum of 30 collection points and channels are established for the EPR program, with communication package in place	PIR 2023	100%	30 collection centers were established during the project lifecycle, but not operating at the time of the terminal review
	Minimum of 50 collectors employed or contracted by collection channels of the EPR program, 30% female	Final report (NESREA)	100%	253 new and decent jobs, opportunities or alternative livelihoods created by the end of June 2023.

Outcome / Outputs	Target and Monitoring milestones	Deliverables	Level of achievement (at June 2023)	Comments
		(contracts & payment slips not available)		48 women collectors, ie 19% but exceeding the minimum target of 15 (30% of 50 collectors).
	300 tons of e-waste are collected and delivered to ESM facilities by the EPR program	PIR 2023/ Final report (NESREA)	100%	305 tons of e-waste collected,
Output 3 Establish cost-effective recycling and disposal systems for various e-waste categories	2 pre-treatment and/or recycling centers are set up and fully operational for at least 3 product categories	Environmental permits issued by NESREA	100%	The two recycling facilities involved in the project (Hinckley and E-Terra) were able to manage all e-waste categories collected during the project lifecycle. They are still operating an even increased they volume thanks to legislation.
	50 formal recycling workers employed in the context of the EPR program, at least 30% female	PIR 2023/ Final report (NESREA)	100%	52 new and decent jobs in recycling were created by the end of June 2023. out of the 52, 18 were women, so 35%.
	300 tons of waste collected hazardous components segregated	PIR 2023/ Final report (NESREA)	100%	A total of 305 tons of e-waste has been safely collected at ESM facilities with over 98% of that safely disposed.
Output 4 Regional and global knowledge exchange on Circular economy models for the electronics sector	At least 5 global companies including member companies of PACE supporting PROs in Africa	Global fund established	100%	Global companies engaged with the PRO initiative through local channels
	5 success cases on circular electronics published (e.g. on ecoinnovation, fund for PROs, phase out of CoC) At least 100 downloads of case studies and Reports to SAICM regional meetings and ICCM5 in 2020	Case study, publications and website statistics	100%	Reports shared and various case studies and an online training conducted from 2022 to 2023

b. Likelihood of impact – Moderately Likely (ML)

71. Considering the Theory of change defined during the project design, the likelihood of the project achieving its intended long-term impacts is assessed by considering the effectiveness of the implemented outputs, the sustainability of intermediate achievements, and the fulfilment of key assumptions and drivers. The project's progress, challenges, and contributions to the electronics sector and e-waste management in Nigeria are key factors in this assessment.

72. **During the project lifecycle, significant progress was made**. The successful implementation of EPR legislation for e-waste in 2020, with ongoing enforcement actions, provided a robust regulatory framework essential for sustainable e-waste management. This legislative success is supported by evidence of increased volumes handled by recycling centers like Hinckley and E-Terra.

73. The project achieved its collection target by gathering 305 tons of e-waste, surpassing the goal of 300 tons. This demonstrates the project's effectiveness in establishing a functioning collection system and highlights strong operational management and stakeholder participation.

74. Both recycling centers (E-Terra and Hinckley) experienced significant growth in e-waste collection as a result of the project. Upgrades of their facilities, including new machinery and improved collection vehicles, have strengthened the recycling infrastructure. This allowed the centers to manage a wide range of e-waste collected, although challenges with certain types of e-waste remain. Future projects should focus on providing additional support to help local recyclers overcome these specific challenges. **Despite the collection rate growth, both recyclers stated that cost-effective recycling and disposal systems cannot be maintained without an operational PRO system.**

75. **The project also made strides in regional and global knowledge exchange. Multiple case studies were published, online training was conducted, and several international events were organized.** These activities facilitated knowledge exchange and promoted circular economy practices. Stakeholders, including E-Terra and Hinckley, provided positive feedback on the awareness raised among the informal sector collectors and the general population.

76. **Intermediate achievements included the successful recovery and reintroduction of significant amounts of common metals and plastics into the local and international value chain.** E-Terra and Hinckley managed all types of e-waste collected, leveraging their connections with global recyclers to handle even problematic fractions. This supports the recycling industries and reduces the demand for raw materials, although sustaining these achievements without project support remains challenging.

77. **The project's efforts to improve regulatory compliance were successful.** The project helped update and enforce regulations, leading to better compliance among B2B entities and formal recyclers. Awareness campaigns targeting the informal sector collectors led to the adoption of safer practices, including the use of personal protective equipment (PPE). However, **informal collectors reverted to dismantling e-waste due to the low level of levy and the non-operational PRO system, leading to the cessation of operations implemented during the project execution at the 30 established collection centers by the end of the project.**

Gender Considerations

78. **The** project developed a gender action plan by mobilizing a specific consultant on the subject. With the help of the gender consultant, **women right issues** in the workplace ranging from unconscious segregation, work life balance, pay disparity etc were addressed. This plan also allowed to **highlight the potential gender labor risks, as women are strongly involved in the informal waste-picking sector**.
79. The project established 30 formal collection centers, with **48 women actively involved in the collection processes and their labour conditions have improved with the wearing of Personal Protective Equipment (PPE) for the job.**
80. **Centers such as Falcon, Ecoveridis, and Obanijesu are headed by women**. The project also supported the formation of a collectors' cooperative, with the vice president being a woman.
81. These efforts aimed to address gender disparities and improve working conditions for women in the e-waste sector.

Picture 4: Women from informal sector (LAWMA) and at Hinckley Recycling Center in Lagos (Hinckley), July 2024

82. **The project's likelihood of achieving its long-term impacts is promising but faces significant challenges.** The successful implementation of EPR legislation, the collection of e-waste, and the development of recycling systems provide a strong foundation. However, sustaining these outcomes beyond the project lifecycle is crucial. **Key risks include the non-operational PRO database, the need for continuous stakeholder engagement, and the provision of financial incentives.** Addressing these challenges is essential for maintaining the environmental and economic benefits achieved during the project lifecycle. Continuous support, robust monitoring systems, effective stakeholder engagement, and a focus on gender inclusivity are vital to ensuring the project's long-term success and sustainability.
83. Project likelihood of impact rating table is defined at **ANNEX XV - LIKELIHOOD OF IMPACT RATING**, page **135**

Rating for Effectiveness:	**Moderately Satisfactory (MS)**

E. Financial Management - Satisfactory (S)

Adherence to UNEP's Policies and Procedures

84. The financial management of the project was conducted in adherence to UNEP's policies and procedures, as outlined in the midterm review. Financial management responsibilities were assigned to the project execution unit, which operated under the approval of the project manager unit and followed GEF/UNEP protocols. The financial statement was prepared in accordance with International Public Sector Accounting Standards (IPSAS).

85. The project strictly adhered to UNEP's established guidelines for financial transactions, ensuring accountability and transparency. This adherence provided a structured framework for financial planning, expenditure tracking, and reporting, facilitating systematic management of financial resources.

Completeness of Financial Information

Actual Project Costs

86. According to the PIR 2023, USD 1,940,312 was spent from the GEF-provided envelope of USD 2,000,000, indicating that 97% of the budget was utilized. This high level of budget utilization demonstrates effective financial planning and execution.

87. The budget allocated to the GEF has seen an increase of USD 75,000 (from USD 1,500,000 to USD 1,575,00) during the project, at the same time as an increase in the duration of the project (by 6 months, until May 31, 2023), which was the subject of Amendment No. 1 signed by UNEP and NESREA on May 23, 2022.

Co-Financing:

88. The project successfully secured co-financing from the government (NESREA), increasing its contribution from USD 9,025,000 to USD 13,085,098. In-kind co-financing was also received from EPRON and ERION, amounting to USD 342 512 and USD 1,976 respectively, which had not been considered at the project design stage. The cofinancing from Hinckley has been provided but is lower than anticipated during the design phase: USD 290,266.38 compared to the expected USD 1,000,000. Despite the lack of co-financing from the United Nations University (UNU), the additional support from NESREA and the in-kind contributions from EPRON and ERION compensated for this shortfall. Overall, the project achieved its co-financing target, but not all players fulfilled their commitments.

89. The evaluation highlights the strong support from the government, with a high level of co-financing provided, exceed the commitment at the project design. In fact, the Federal Government of Nigeria including the Lagos State Government continued to provide in kind, support for the project throughout the lifecycle. All interviewed stakeholders confirmed support and co-financing from the government.

90. Note that EPRON committed to a co-financing of USD 364,535 in 2018. However, the commitment letter (dated 24 December 2018) was received after the GEF submission in November, so it was not included in the co-financing budget.

Communication between Financial and Project Management Staff

91. Effective communication between financial and project management staff was a cornerstone of the project's financial management strategy. Regular meetings and updates ensured alignment between financial decisions and project goals, allowing for prompt addressing of financial issues. This coordination facilitated budget planning, expenditure tracking, and financial reporting, contributing to the overall success of the project.

92. Key Factors Contributing to Financial Management:

- **Effective Budget Utilization:** The project utilized 97% of the GEF-provided budget, indicating efficient financial planning and execution.
- **Secured Co-Financing:** The project achieved its planned co-financing target, with strong government support compensating for the shortfall from the private sector and United Nations University.
- **Quick Payment Processing:** Payments to informal collectors, collection centres and recyclers were processed quickly (within a week), ensuring smooth financial operations.

93. However, the lack of detailed financial documentation undermined financial management. While a letter of co-financing was provided by NESREA, detailed documentation such as the list of supported people, vehicles provided, and the use of utilities (electricity /water) was not available, limiting the ability to analyze the co-financing in detail.

Economic Context

94. Some economic events occurred during project lifecycle:

- **The exchange rate increased** from N305/$1 in 2019 to N531/$1 in 2023, a growth of 74%. This significant devaluation of the local currency likely impacted the cost of imported goods and services.
- **The inflation rate increased** from 11.4% per year in 2019 to 24.7% per year in 2023. This high inflation rate would have increased the local costs of project activities, impacting budget planning and expenditure.

Fortunately, the COVID-19 pandemic had no negative impact on the financial statement of NESREA and did not require adjustments in the GEF financial statement for 2020

Rating for Financial Management: Satisfactory (S)

Table 7: Financial Management Table

NON-GEF AND GEF PROJECTS			
Financial management components:		**Rating**	**Evidence/ Comments**
1 Adherence to UNEP's/GEF's policies and procedures:		**HS**	
Any evidence that indicates shortcomings in the project's adherence[1] to UNEP or donor policies, procedures or rules		No	
Was first disbursement carried out within 9 months of UNEP's project approval date.		Yes	3 months between approval date (7-Mar-19) and 1st disbursement (1-jun-19)
2 Completeness of project financial information:			
Provision of key documents to the evaluator (based on the responses to A-H below)		**S**	
A.	Co-financing and Project Cost's tables at design (by budget lines)	Yes	-Co-finance letters at design from NESREA, (13.12.2018) Hinckley (2.12.2018) and UN university (29.11.2018). -Complete budget table at design (17.12.2018) -Terminal budget executed by component (16.08.2023)
B.	Revisions to the budget	Yes	- Amendment 1 with GEF additional cost USD 75 000 (23.05.2022) - Budget revision due to COV19 (re-allocation lines)
C.	All relevant project legal agreements (e.g. SSFA, PCA, ICA)	Yes	- PCA & Amendment 1 (23.05.2022)
D.	Proof of fund transfers	Yes	-Co-financing are in-kind and doesn't need fund transfer -Proof for UNEP disbursements (20.06.2019/ 15.05.2020 / 10.02.2022)
E.	Proof of co-financing (cash and in-kind)	Yes	- 2020-2021 confirmed sources of co-financing in the NESREA letter (25.08.21) - 2019-2022 confirmed sources of co-financing in the NESREA letter (19.07.22) - Confirmation letter of materialized co-financing by Hinckley (02.10.24)
F.	A summary report on the project's expenditures during the life of the project (by budget lines, project components and/or annual level)	Yes	A summary report on the project's expenditures is included on the 5 financial statements
G.	Copies of any completed audits and management responses	Yes	5 financial statements prepared by an external auditor for 2019, 2020 and 2021 No management financial responses
H.	Any other financial information that was required for this project (list):	N/A	

NON-GEF AND GEF PROJECTS		
Financial management components:	**Rating**	**Evidence/ Comments**
2. Communication between finance and project management staff	**S**	
Project Manager and/or Task Manager's level of awareness of the project's financial status.	S	Task Manager received all quarterly expenditure reports and cleared them together with the Unit finance team.
Fund Management Officer's knowledge of project progress/status when disbursements are done.	S	Task Manager was always copied when disbursements are made and received confirmation of receipt of funds
Level of addressing and resolving financial management issues among Fund Management Officer and Project Manager/Task Manager.	S	Financial problems or discrepancies were dealt with jointly by our Unit finance team and the Task Manager.
Contact/communication between by Fund Management Officer, Project Manager/Task Manager during the preparation of financial and progress reports.	S	The executing agency prepares financial and progress reports, submits them to the Task Manager, who approves them based on her knowledge of the project activities, then they are recorded in the UNEP financial system (umoja). This is all verified on annual basis by annual audit report, which is reviewed and cleared by both the Task Manager and Unit finance / audit officer.
Project Manager, Task Manager and Fund Management Officer responsiveness to financial requests during the evaluation process	S	All the information and documentation required have been supplied
Overall rating	**S**	

Table 8: Source of funding

Funding (Type/Source)	**UN Environment own Financing (US$1,000)**		**Government (US$1,000)**		**Other*** (All co-financing sources to be identified) **(US$1,000)**		**Total (US$1,000)**		**Total Disbursed (US$1,000)**
	Planned	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	
UNEP	2,000	1,940					2,000	1 ,940	1,920
In-kind (NESREA)			9,025	13,085			9,025	13,085	0
Equity Investment (Hinckley)					2,452	0	2,452	0	0
In-kind (Hinckley)					1,000	0	1,000	290	0
In-kind (UN University)					610	0	610	0	0
Equity Investment (EPRON)					0	100	0	100	0

Funding (Type/Source)	UN Environment own Financing (US$1,000)		Government (US$1,000)		Other* (All co-financing sources to be identified) (US$1,000)		Total (US$1,000)		Total Disbursed (US$1,000)
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
In-kind (EPRON)					0	242	0	242	0
In-kind (ERION)					0	2	0	2	0
Totals							**15, 087**	**15,661**	**1,920**

Table 9: Detail of total NESREA co-financing and means of verification

period	Amount (US$)	Means of verification
2019-2020	4 317 339	19.07.22 NESREA letter
2020-2021	4 317 339	25.08.21 NESREA letter
2021-2022	4 450 419	19.07.22 NESREA letter
Total 2019-2022	**13 085 098**	

Rating for Financial Management: Satisfactory (S)

F. Efficiency – Satisfactory (S)

Implications of delays and extension

95. The project was initially scheduled to last 36 months, but the COVID19 crisis had a major impact on the start-up of the project, and **an extension was approved and formalized in the Amendment No. 1 signed by UNEP and NESREA on May 23, 2022, to extend the project by 6 months, bringing it to 42 months, until 31 May 2023**. This extension has enabled the project to **become more closely integrated into the local ecosystem** through a longer presence, but also to **complete certain activities** (e.g. setting up the *Black Box* and taking a census of producers) that would not have been possible without this extension.

Time-saving measures put in place to maximize results within the secured budget and agreed project timeframe:

96. Throughout the project, team maximized progress through monthly meetings and quarterly progress reports, as well as quarterly updates from UNEP to the PSC members and GEF OFP. During COVID-19 pandemic, when the recycling and collection activities were necessarily delayed, the project continued to make significant progress on output 1, particularly in the development of EPR guidance and WEEE regulation.

97. Despite the COV19 crisis, which had a major impact on the implementation of the project, not only because of the slowdown in the overall economy of collection and recycling in Nigeria, but also because it was impossible for the teams to travel to the field, UNEP RMB organized several online meetings with NESREA and other project partners during this period to ensure the project progress. Having seen that these regular online meetings were proving effective, and that it was not essential to carry out too many missions, these meetings were continued after the COV19 crisis, enabling quality monitoring to be carried out remotely from 2020 to 2023, and **reducing project management costs** (less air travel and mission expenses).

98. Resource efficiency was achieved by having the collection centers collaborate to pool resources and transport the collected e-waste to recycling centers, which **reduced transportation cost.**

Partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects

99. The project collaborated with some key stakeholders during his implementation:

- **The Global Alliance** of international producers (comprising HP, Dell, Microsoft Mobile, and Philips Domestic Appliances) to engage with major electronics manufacturers at the international level to support the operationalization of Extended Producer Responsibility (EPR) system in Nigeria for electronics, but the involvement of producers remained very low, particularly in terms of their contribution to the levy (the only significant contribution was that of MTN in 2019 - 5 million Naira, or US$13,900).
- **The WEEE Forum,** which is the world's largest multi-national center of competence as regards operational know-how concerning the management of waste electrical and electronic equipment. During the project, WEEE Forum provide technical support to Nigeria on their EPR operationalization. NESREA and EPRON expressed their satisfaction with the support provided by this structure (UNEP, 2024).
- Other stakeholders to disseminated best practices and experiences: **StEP** webinar in 2019, **World Resources Forum** in 2019 and 2021, **West African Clean Energy & Environment Exhibition & Conference** (WACEE) in 2020.

100. Some partners were involved during the project's design, but were absent during in its implementation phase:

- **The United Nation University (UNU)** was involved in the project from the outset, and even undertook to provide co-financing for the project (USD 610,000), although in the end this involvement was not effective in terms of implementation.
- **The International Labour Organization (ILO)** was initially considered as a project partner, however, they were not involved during implementation

Method of carrying out activities to minimize UNEP's environmental footprint

101. **There is no indicator within UNEP to measure the environmental footprint of projects**, however, the main source of emissions from development projects generally remains air travel for field missions. Concerning this project, the number of flights related to project management missions was very reduced, due to the COV19 pandemic which affected the project from the start. Thus, during the entire duration of the project, the management team within UNEP (RMB team) only traveled twice to Nigeria, which **significantly reduced the environmental footprint of the project.**

102. Moreover, **the project ensured that e-waste was collected and processed in an environmentally sound manner**, reducing the negative impacts on both the local and global environment. **Training and retraining exercises of environmental and social safeguards** as well as consultative sessions between the regulators and collectors were held during the project, to raise awareness of the environmental impact of the project.

Rating for Efficiency: Satisfactory (S)

G. Monitoring and Reporting – Satisfactory (S)

Monitoring of project implementation

103. The M&E of the Project was prepared with standard template developed by GEF/UNEP and the executing agency. The components consisted of guidelines of the gazetted EPR for EE sector and the requirements in the ToR issued to the recycling facilities and collection centers.

104. The M&E was coordinated by the Project Manager with team members comprising of the project team, representatives of NESREA, LAWMA, LASEPA and EPRON. During the project, several M&E meetings had been carried out. Some of them were carried out along with members of the Project Steering Committee.

105. **Several meetings of the Project Steering Committee (PSC) were** organized to monitor the project, the last one was held on 15th May 2023, two weeks before the end of the project.

106. The UNEP RMB organized several online meetings with NESREA and other project partners during COVID to ensure the project progress and produced high-quality deliverables during the project implementation phase, including but not limited to a report on circular economy for electronics and a 2-day online training event targeting the African region. In most of the monitoring reports, **the data is well disaggregated according to gender and vulnerable groups,** particularly in the informal sector.

Monitoring on the field:

107. The contact persons of the 30 collection centers and the 2 recycling facilities agreed that monitoring officers conducted monitoring field visits on a regular basis for the verification of

the project's physical activities. Detailed monitoring reports contain information on the implemented activities and their photo documentation.

108. **Table 21: Collection and recycling details monitoring**, at **ANNEX XVI**, page **16** highlights the monitoring of e-waste collection and recycling by categories and incentive per kg of e-waste (source: NESREA final report)

Rating for Monitoring and Reporting: Satisfactory (S)

H. Sustainability - Moderately Likely (ML)

109. Evaluating the sustainability of this project involves assessing the key conditions or factors that are likely to undermine or contribute to the persistence of the benefits achieved at the project outcome level. This includes examining institutional sustainability, as well as other dimensions of sustainability such as social, political, and financial aspects.

a. Institutional Sustainability – Moderate Likely (ML)

Partnerships and Collaboration

110. The project fostered strong partnerships between government agencies, private sector entities, and international organizations. These collaborations were essential for the successful implementation of the project. Both E-Terra and Hinckley reported positive relationships with stakeholders, particularly NESREA and EPRON. The involvement of these regulatory bodies provided a solid foundation for enforcing e-waste regulations and supporting recycling initiatives.

Ongoing Support

111. For institutional sustainability, continuous support from these stakeholders is crucial. The project established a framework for Extended Producer Responsibility (EPR), which, if maintained and strengthened, can provide long-term support for e-waste management. The engagement of producers with local channels, particularly through EPRON, needs to be sustained to ensure ongoing compliance and support for the recycling sector.

Operational Challenges

112. However, the non-operational PRO database remains a significant challenge. This database is critical for tracking and managing e-waste flows, and its absence undermines the institutional framework established by the project. Ensuring the database becomes operational is essential for maintaining institutional sustainability.

b. Social Sustainability - Moderately Likely (ML)

Informal sector Engagement

113. The project successfully engaged the informal sector, providing training and personal protective equipment (PPE) to over 350 informal collectors. This engagement improved awareness about e-waste recycling and its associated risks, fostering a community of informed and safer e-waste handlers. However, the cessation of operations at the collection centers has impacted these informal collectors, highlighting the need for continuous engagement and support to maintain social sustainability.

Gender Inclusivity

114. The project made significant efforts to include women in the e-waste management process, with 48 women actively involved in the collection processes. The establishment of collection centers headed by women and the formation of a collectors' cooperative with female leadership are positive steps towards gender inclusivity. Ensuring that these initiatives continue beyond the project lifecycle is crucial for maintaining social sustainability.

c. Political Sustainability –Likely (L)

Regulatory Framework

115. The project contributed to updating and enforcing e-waste regulations in Nigeria. This regulatory framework is a cornerstone for political sustainability, providing the legal basis for ongoing e-waste management efforts. Continuous political support is necessary to maintain and enforce these regulations, ensuring that the progress made during the project is not lost.

Government Support

116. The involvement of government agencies like NESREA and their ongoing support is critical. Political stability and commitment to environmental policies will contribute to the persistence of project benefits. Advocacy and continuous engagement with policymakers are necessary to ensure long-term political support.

d. Financial Sustainability - Moderate Likely (ML)

Funding Mechanisms

117. Financial sustainability remains a significant challenge. The project initially provided funding for upgrading recycling centers, supporting informal collectors and paying for collection as well as recycling of e-waste.

118. The PRO database (Black Box) was not operational at the time of this review, which make it difficult to financially sustain the project impact. However, EPRON is actively working to make it operational. Once functional, this database will be essential for tracking e-waste flows and ensuring that financial contributions from producers are collected and utilized effectively. The establishment of an Extended Producer Responsibility (EPR) fund, managed by EPRON, has the potential to provide ongoing financial support for recyclers and informal collectors.

Cost Recovery

119. Both E-Terra and Hinckley highlighted the need for competitive pricing and financial incentives to sustain their operations. The non-operational PRO system and the low level of levy have undermined financial sustainability. Ensuring that financial mechanisms are in place to support the full cost recovery of recycling operations is essential.

Economic Incentives

120. Creating economic incentives for informal collectors to bring e-waste to formal recycling centers rather than dismantling it for valuable parts is crucial. Without these incentives, the informal sector is likely to revert to previous practices, undermining the project's achievements.

121. Overall, the sustainability of the project is contingent on addressing several key factors:

- **Institutional Sustainability:** Ensuring the operationalization of the PRO database and maintaining strong partnerships and regulatory support.
- **Social Sustainability:** Continuous engagement and support for informal collectors, with a focus on gender inclusivity and community awareness.
- **Political Sustainability:** Ongoing political support and enforcement of e-waste regulations, with continuous advocacy and engagement with policymakers.
- **Financial Sustainability:** Establishing and maintaining financial mechanisms, including an EPR fund, to support recyclers and informal collectors, and ensuring competitive pricing and cost recovery.

122. Addressing these challenges is essential for maintaining the environmental, social, and economic benefits achieved during the project lifecycle.

Rating for Sustainability: Moderately Likely (ML)

Table 10: Sustainability rating

Sustainability	Rating	Strengths	Challenges
Institutional Sustainability	Moderately Likely (ML)	Strong partnerships and collaboration, robust regulatory framework, positive engagement with stakeholders	Non-operational PRO database, need for continuous support from stakeholders
Social Sustainability	Moderately Likely (ML)	Successful community engagement, significant gender inclusivity efforts, improved safety and awareness among e-waste handlers	Cessation of collection centers, need for ongoing financial incentives, sustaining gender benefits
Political Sustainability	Likely (L)	Strong regulatory framework, committed government support, successful policy implementation	Need for continuous political support, integration with broader environmental policies.
Financial Sustainability	Moderately Likely (ML)	Initial funding support, active efforts to operationalize the PRO database (Black Box) and establish an EPR fund	Current non-operational status of the PRO database, low financial incentives for informal collectors, high costs of recycling certain e-waste fractions

I. Factors Affecting Performance – Satisfactory (S)

Several factors influenced the performance of this project.

Quality of Project Management/Supervision:

123. The project was effectively managed by the project execution unit under the oversight of UNEP and NESREA. However, the COVID-19 pandemic posed significant challenges, limiting field activities and necessitating a shift to remote monitoring. Despite these challenges, the project management team managed to adapt and maintain progress through virtual meetings and remote supervision, which helped mitigate some of the delays.

Stakeholders Participation and Cooperation:

124. Stakeholder engagement was a critical factor in the project's success. The involvement of government agencies, private sector participants, and the informal sector was crucial for implementing project activities. However, some key partners, such as the ILO, were not engaged.

Environmental and Social Safeguards:

125. Environmental and social safeguards were adequately addressed during the project. The project ensured that e-waste was collected and processed in an environmentally sound manner, reducing the negative impacts on both the local and global environment. The project also worked to formalize the informal sector collectors, reducing the health risks associated with e-waste handling by providing PPE and training on safe practices.

Country Ownership and Driven-ness:

126. The strong support from the Nigerian government, evidenced by the co-financing provided, was a key factor in the project's success. The government's commitment to e-waste management was further demonstrated by the implementation of updated legislation and the active involvement of regulatory agencies. This high level of country ownership and drivenness helped ensure that the project was aligned with national priorities and had the necessary political support to succeed.

Naira Fluctuation:

127. The fluctuation of the Naira significantly impacted the project's financial management. The exchange rate increased from N305/$1 in 2019 to N531/$1 in 2023, coupled with the rising inflation rate, posed challenges in maintaining budgetary control. These fluctuations increased operational costs and affected the overall financial stability of the project, making it more challenging to achieve cost-effective outcomes.

128. Each of these factors played a critical role in the project's performance, influencing its outcomes, and determining its overall success.

Rating for Factors Affecting Performance: Satisfactory (S)

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

129. This terminal review of the "Circular Economy Approaches for the Electronics Sector in Nigeria" project reveals both significant successes and some critical challenges that impacted the overall performance and sustainability of the project.

Positive Achievements

130. The project made significant strides in establishing a foundational framework for sustainable e-waste management in Nigeria. **A key achievement was the successful implementation of Extended Producer Responsibility (EPR) legislation in 2020.** This legislation was instrumental in driving compliance within the business sector, resulting in **the collection and recycling of 305 tons of WEEE, with 68.5% of this total collected from businesses**. The robust legal framework provided the necessary motivation for businesses to adhere to proper e-waste disposal practices, marking a significant step forward in Nigeria's efforts to manage e-waste sustainably.

131. The project also has **positive impact on recycling centers like Hinckley and E-Terra.** These centers not only increased their operational capacities but also successfully processed all types of e-waste collected during the project.

132. In terms of social impact, **the project successfully engaged the informal sector, providing training and personal protective equipment (PPE) to over 350 informal collectors**. This initiative not only raised awareness about the hazards associated with e-waste but also improved working conditions for those in the informal sector. Additionally, the project's gender-sensitive approach ensured that women, were specifically targeted for support and training. As a result, the project contributed to both improved environmental outcomes and enhanced social equity.

Challenges and Areas for Improvement

133. Despite these achievements, the project encountered several challenges that limited its overall impact, particularly in the informal sector. While the project did engage the informal sector collectors, **the collection of WEEE from this group was less successful compared to the business sector. Only 28.3% of WEEE were collected from the informal sector**, indicating that the project's strategies for integrating informal recyclers into the formal system were not as effective as intended. One key reason for this was **the low levy offered to informal collectors,** which was insufficient compared to the income they could earn by dismantling and selling valuable e-waste components independently. Additionally, **the non-operational status of the PRO database (**Black Box) further discouraged full participation from both informal collectors and producers.

134. Another significant challenge was the sustainability of the project's outcomes. **The cessation of operations implemented during the project execution, at the 30 established collection centers by the end of the project,** coupled with the informal sector collector's reversion to dismantling, highlights a critical weakness in sustaining the project's achievements beyond its lifecycle. **The lack of a fully operational PRO system and the low level of financial incentives for informal collectors compromised the long-term**

sustainability of the project's results. While the project laid a solid foundation, its long-term success will depend on the continued development and enforcement of the EPR system and the operationalization of the PRO database.

135. Also, the limited resources and short timeframe (Medium Size project) made it particularly challenging to achieve significant behavior change among informal actors in the e-waste sector.

Human Rights and Gender Dimensions

136. **The project demonstrated a strong commitment to human rights and gender equity,** particularly in its efforts to formalize the informal sector collectors and improve working conditions for vulnerable groups. **The provision of PPE and training for informal collectors, many of whom are women,** addressed key human rights concerns by reducing exposure to hazardous materials and promoting safer working environments. Additionally, **the project's focus on including women in the e-waste management process and addressing gender disparities** in the sector contributed to the empowerment of marginalized groups.

Overall Assessment

137. In conclusion, **the project successfully achieved several of its intended outcomes, particularly in establishing a regulatory framework and enhancing recycling infrastructure**. However, the challenges related to informal sector collectors engagement, financial sustainability, and the operationalization of the PRO system indicate that there are critical areas that need further attention to ensure the long-term impact and sustainability of the project. The overall performance of the project is commendable, but its success in driving systemic change will depend on the continuation of efforts to address these challenges in the post-project phase.

B. Summary of project findings and ratings

The table below provides a summary of the ratings and finding discussed at **Chapter V - REVIEW FINDINGS**. Overall, the project demonstrates a rating of **4,42.**

UNEP Evaluation Office Validation of Performance Ratings:

The UNEP Evaluation Office formally quality assesses (**ANNEX XIII, QUALITY ASSESSMENT OF THE REVIEW REPORT**) management led Terminal Review reports and validates the performance ratings therein by ensuring that the performance judgments made are consistent with evidence presented in the Review report and in-line with the performance standards set out for independent evaluations.

The Evaluation Office assesses a Terminal Review report in the same way as it assesses the initial draft of a Terminal Evaluation report. It applies the following assumptions in its validation process:

- That what is being assessed is the contents of the report and the extent to which it makes a consistent and justifiable case for the performance ratings it records.
- That the consultant has, within the report, presented all the evidence that was made available to them.
- That the Review has been based on a robust Theory of Change, reconstructed where necessary, which reflects UNEP's definitions at all levels of results.
- That the project team and key stakeholders have already reviewed a draft version of the report and provided substantive comments and made factual corrections to the Review Consultant, who has responded to them. The Evaluation Office assumes, therefore, that it has received the Final (revised) version of the report.

In this instance the Evaluation Office validates the overall project performance rating at the **Satisfactory'** level 'and the quality of the report to be at the Moderately Satisfactory level.

Table 11: Summary of project findings and ratings

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
A. Strategic Relevance		**HS**	Rating Validated	**HS**
A1. Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities	The project aligns closely with the UNEP Medium Term Strategy (MTS), Programme of Work (POW), Strategic Priorities and UNEP's Capacity building (BSP).	HS	Rating Validated	HS
A2. Alignment to Donor/GEF/Partner Strategic Priorities	The project aligns closely with the strategic priorities of NESREA, the private sector, and EPRON. This alignment ensures the project supports national regulatory frameworks and private sector goals for sustainable e-waste management.	HS	Rating Validated	HS

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
A3. Relevance to Global, Regional, Sub-regional and National Environmental Priorities	The project is strongly aligned with global priorities like the SDGs and Agenda 2030, as well as national priorities set by the Ministry of Environment. It contributes directly to environmental outcomes such as tons of e-waste recycled and the number of e-waste producers registered in the PRO system. Additionally, it addresses the needs of diverse beneficiary groups, including the informal sector and women	HS	Rating Validated	HS
A4. Complementarity with relevant existing interventions/coherence	The project complements ongoing initiatives in e-waste management in Nigeria (creation of PRO organization), reinforcing regional and global efforts for sustainable development	HS	Rating Validated	HS

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
B. Quality of Project Design	The project demonstrated a strong stakeholder engagement, gender inclusion and capacity building initiatives. However, financial dependences and challenges in integrating the informal sector were not fully identified at design phase, and while partially mitigated, they remain areas for improvement during implementation	**S**	Rating Validated	**S**
C. Nature of External Context	Despite some economic fluctuations and the challenges posed by the COVID-19 pandemic, the overall political and security environments remained stable, allowing the project to operate effectively with minimal external disruptions.	**F**	Rating Validated	**F**
D. Effectiveness		**MS**	Rating Validated	**MS**
D1. Availability of outputs	The project successfully delivered most planned outputs, including legislative updates and capacity-building activities, but faced challenges with the PRO system	MS	Rating Validated	MS

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
D2. Achievement of outcomes	Some project outcomes were achieved, such as the establishment of collection centers and legislative updates, but challenges remain with informal sector collectors engagement.	MS	Rating Validated	MS
D3. Likelihood of impact	The likelihood of achieving long-term impacts is moderate due to ongoing challenges, including the non-operational PRO system	ML	Rating Validated	ML
E. Financial Management	**Financial management was well-executed, with 97% of the budget utilized. Strong government support compensated for shortfalls from private sector co-financing, though financial reporting had some gaps.**	**S**	Rating adjusted to reflect the correct aggregation of the sub-categories.	**HS**
E1. Adherence to UNEP's Financial Policies and Procedures	The project adhered to UNEP's financial management policies, with 97% of the GEF budget utilized effectively. No major financial management issues were identified that impacted the project's timely delivery or performance quality.	**S**	Rating Validated	S

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
E2. Completeness of Financial Information	Most financial documentation was accurate, complete, and available in a timely manner. However, some details related to in-kind co-financing, such as supported personnel and utility usage, were missing, limiting further analysis.	**S**	Rating Validated	S
E3. Communication Between Finance and Project Management Staff	There was strong communication between the Project Manager and the Fund Management Officer, facilitating effective project delivery. Regular updates and coordination ensured that financial decisions aligned with project goals	**S**	Rating Validated	S
F. Efficiency	**Despite challenges like the COVID-19 pandemic and Naira fluctuations, the project was efficiently managed. Remote monitoring and partnerships helped maintain progress within the extended timeline.**	**S**	Rating Validated	**S**
G. Monitoring and Reporting		**S**	Rating Validated	**S**

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
G1. Monitoring Design and Budgeting	The project designed a monitoring plan with relevant indicators to track progress, including gender group. Adequate resources were allocated for mid-term and terminal evaluations, supporting effective results-based management.	S	Rating Validated	S
G2. Monitoring of project implementation	Monitoring was consistent, with regular updates and field visits ensuring progress, though some data gaps remain	S	Rating Validated (supported by Annex XVI)	S
G3. Project reporting	Reporting was thorough and adhered to UNEP and GEF standards	S	Rating Validated	S
H. Sustainability		**ML**	Rating Validated	**ML**
H1. Socio-political Sustainability	There is a strong ownership and commitment from the government and stakeholders for this project. Mechanisms are in place to adapt to changes, ensuring continued support for sustaining project outcomes.	L	Rating Validated	L

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
H2. Financial Sustainability	Future funding is required to maintain key outcomes, particularly for the e-waste management system and support for informal collectors. While the EPR framework and potential funding mechanisms like the EPR fund offer some mitigation, the non-operational PRO database remains a significant challenge to ensuring long-term financial sustainability.	ML	Rating Validated	ML
H3. Sustainability of the Institutional Framework	This project established strong partnerships and policies to support e-waste management. However, challenges such as the non-operational PRO database and the need for stronger institutional mechanisms may put long term sustainability at risk	ML	Rating Validated	ML
I. Factors Affecting Performance	**Project management adapted well to external challenges, maintaining progress through remote supervision during the COVID19 pandemic.**	**S**	Rating Validated	**S**

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
I1. Preparation and Readiness	At least 80% of these actions were done or updated between project approval (20.05.19) and first disbursement (21.05.20): A comprehensive inception meeting was held and reported on (c.c PIR 2020) /An annual, costed workplan was developed with appropriate detail /A detailed and compliant procurement plan was developed /A Steering Committee was established with full, appropriate representation (05.03.2020) /A good ESE safeguards assessment was carried out, with stakeholder participation (c.c PIR 2020) /All partners' capacity was confirmed, except UNU and ILO /Legal agreements were signed with partners in a timely manner, except UNU and ILO (c.c PIR 2020) /Comprehensive and relevant stakeholder analysis reviewed (c.c PIR 2020).	S	Rating Validated	S

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
I2. Quality of project management and supervision	There was effective communication between the project team, UNEP, and partners. The Steering Committee functioned well. Both NESREA and UNEP provided strong support, contributing to the successful execution of the project.	S	Rating Validated	S
- *UNEP/Implementing Agency:*	UNEP provided effective oversight and support throughout the project, ensuring alignment with strategic objectives	S	Rating Validated	S
- *Partners/Executing Agency:*	NESREA demonstrated strong commitment and leadership throughout the project, particularly in updating and enforcing EPR legislation	S	Rating Validated	S
I3. Stakeholders' participation and cooperation	The project effectively engaged key stakeholders, including EPRON, the WEEE Forum, SAICM and private recyclers. However, some international partners, especially ILO were not engaged as expected	S	Rating Validated	S

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
I4. Responsiveness to human rights and gender equality	The project made strong efforts to include women and vulnerable groups, with noticeable improvements in gender inclusivity within the e-waste sector	S	Rating Validated	S
I5. Environmental and social safeguards	Environmental and social safeguards were well integrated, particularly in training and awareness activities aimed at informal workers	S	Rating Validated	S
I6. Country ownership and driven-ness	The Nigerian government demonstrated strong ownership and commitment, providing significant co-financing and political support through legislation update	HS	Rating Validated	HS
I7. Communication and public awareness	Communication and public awareness efforts were effective, particularly in raising awareness, targeting informal workers	S	Rating Validated	S
Overall Project Performance Rating		**S**		**S**

J. Lessons Learned

138. Below the lessons learned from this project. They provide valuable insights into the successes and challenges encountered during its implementation. These lessons are also intended offer guidance for future projects in similar contexts.

Table 12: Lessons learned

Lesson Learned #	Description
Lesson Learned #1	**An effective and enforceable legal framework is crucial** for a successful e-waste management project. It drives compliance and encourages private sector participation, even in contexts with deeply entrenched informal practices.
Lesson Learned #2	**A deep assessment of the informal sector's behavior and economic realities** should be conducted **during the project design phase**. This ensures that the formal system offers a viable and sustainable economic alternative to informal workers.
Lesson Learned #3	The **PRO database** must be operational to ensure the effectiveness of the e-waste management system. Third party management of commercially confidential data is recommended to ensure producers trust and use of the system.
Lesson Learned #4	**Ensuring end-user involvement in similar black box tool development:** Involving end users from the beginning of similar black box tool development, particularly during drafting and validating terms of reference, ensures that crucial technical details are included, and the tool meets the specific needs of its users
Lesson Learned #5	**Supporting formal recyclers** is essential, especially in connecting them with international recyclers and managing complex processes like Basel notifications.
Lesson Learned #6	**Sensitizing the project team on project evaluation** ensures that project deliverables align with the results framework. This alignment is critical, as many outputs may exist, but the means of verification might not match those defined at the project design phase.
Lesson Learned #7	**Implementing a shared folder for all project deliverables** by output can facilitate easier sharing and communication among relevant stakeholders.
Lesson Learned #8	**The EPR model** is an effective way of managing electronic waste in an environmentally sound way, and companies are increasingly subscribing to it via authorized private recyclers.
Lesson Learned #9	**Global companies** did not participate directly in Nigeria's EPR scheme but rather through local channels. Enforcing legislation, establishing clear communication channels, and protecting commercial data through third-party-managed systems like the Black Box are crucial steps. Additionally, offering incentives, such as recognition for environmental

Lesson Learned #	Description
	contributions, could encourage more direct involvement from global companies.
Lesson Learned #10	**Formalizing informal collectors** ensures better coordination and protection of workers, leading to more efficient and safer e-waste management.
Lesson Learned #11	**Insufficient timeframe for transforming informal sector practices:** Transforming informal sector practices is a long-term goal, and the three-year project duration was too short to achieve sustainable behavior change
Lesson Learned #12	**Impact of informal e-waste brokers on formalization efforts**: Informal e-waste brokers, who selectively purchase valuable fractions at higher prices, hinder efforts to shift informal actors from dismantling practices, making it challenging to transition to a formal e-waste management system
Lesson Learned #13	**Upgrading the facilities** of collection centers improves the adoption of environmentally sound management practices.
Lesson Learned #14	**Women** have shown **a strong potential to excel in the e-waste business**, particularly through strategies like engaging local communities in circular economy approaches.

K. Recommendations

139. The following table presents a set of recommendations developed from the project terminal review. These recommendations aim to address the key challenges identified, enhance the sustainability of project outcomes, and guide future initiatives in similar contexts.

Table 13: Recommendations

Recommendation #	Challenge/Problem to be Addressed by the Recommendation	Priority Level	Type of Recommendation	Responsibility	Proposed Implementation Time-frame
Recommendation #1	Strengthen the enforcement of the legal framework to ensure compliance and participation from all sectors (informal and more actors from the private sector)	High	Regulatory and Policy Recommendation	Government Agencies	Immediate
Recommendation #2	Conduct a comprehensive assessment of the informal sector during the project design phase to understand their challenges and economic realities.	High	Project Design Recommendation	Future Project Designers	Project Design Phase
Recommendation #3	Insufficient time for sustainable behavior changes in the informal sector	High	Project Design Recommendation	Future Project Designers	Project Design Phase
Recommendation #4	Presence of informal brokers hindering formalization efforts	High	Regulatory and Policy Recommendation	Government Agencies/Legislators	Immediate / Future projects execution
Recommendation #5	Ensure that the PRO database is fully operational to support the e-waste management system effectively.	High	Operational Recommendation	EPRON	Short-term
Recommendation #6	Concerns over data confidentiality in EPR systems	High	Regulatory/Policy Recommendation	PRO organization	Future projects execution
Recommendation #7	Lack of direct participation of global companies in country-specific EPR schemes due to concerns over data security and	High	Regulatory and Operational Improvement	Government PRO organization	Future projects execution

Recommendation #	Challenge/Problem to be Addressed by the Recommendation	Priority Level	Type of Recommendation	Responsibility	Proposed Implementation Time-frame
	regulation full enforcement.				
Recommendation #8	Inadequate technical involvement of end-users in tool development	High	Technical/Operational Recommendation	PRO organization / Implementing Agency / Executing Agency	Future projects execution
Recommendation #9	Provide ongoing support to formal recyclers, particularly in connecting them with international recyclers and managing the Basel notification process.	Medium	Capacity Building Recommendation	Government Agencies, International Partners Future projects in similar context	Ongoing
Recommendation #10	Sensitize project teams on the importance of aligning deliverables with the project results framework to ensure consistent monitoring and evaluation.	Medium	Project Management Recommendation	Future projects in similar context	Throughout Project Lifecycle
Recommendation #11	Implement a shared folder system for project deliverables to facilitate better communication and sharing among stakeholders.	Low	Communication Recommendation	Future projects in similar context	Throughout Project Lifecycle
Recommendation #12	Regularly update and upgrade collection centers to maintain high standards of environmentally sound management practices.	High	Operational Recommendation	Government Agencies, Collection centers	Ongoing

ANNEX I.RESPONSE TO STAKEHOLDER COMMENTS

Table 14: Response to stakeholder comments received but not (fully) accepted by the reviewers, where appropriate

Page Ref	Stakeholder comment	Reviewers Response
12	The SCYCLE Team, at the time of the project development with UNU, now with UNITAR, could have co-financed the project, but we were unfortunately never contacted again. ***Ruediger KUEHR, UNITAR***	We acknowledge the comments. Indeed, we were informed during the review process that the UNITAR team was part of UNU during the project's development. While it's true that UNITAR could have potentially co-financed the project, there was no mention of UNITAR's involvement in the project documents. As a result, no baseline was established for UNITAR's co-financing in the terminal review, making it challenging to evaluate the organization's involvement. We will advise the project team to consider involving organizations like UNITAR in future similar projects.
28	**Nigeria is at risk of becoming a dumping ground for e-waste from developed nations.** I do not think there is any evidence for this statement. The substantially bigger problem in Nigeria is the domestic generation of e-waste. ***Ruediger KUEHR, UNITAR***	Some reports have highlighted this trend. For example, the E-waste Country Assessment Nigeria (2012), published by the UNU, confirms that Nigeria receives a substantial amount of e-waste from Europe and North America. The assessment revealed that a large portion of the imported electronics is non-functional and ends up being disposed of in informal recycling centers, contributing to environmental and public health hazards. Additionally, the report noted that Nigeria likely has the largest computer market in Africa, with Lagos's Computer Village dominating most of the market share
46	**UNU and ILO Cofinancing** One should give a reasoning here, because we still do not know why we were not at all involved, though we had substantially to	**UNU:** As the project progressed, there was a need for support from an organization familiar with the PRO system and experienced in working with PRO organizations. The

Page Ref	Stakeholder comment	Reviewers Response
	contribute in many ways. The same applies to ILO to my knowledge. ***Ruediger KUEHR, UNITAR***	project therefore partnered with the WEEE Forum, which has a strong background in collaborating with PROs. During the evaluation process, we were informed that the ILO was no longer participating in the project. Despite our efforts to reach out to the ILO during the review process, no response was received.
52	**The cessation of operations at the 30 established collection centers by the end of the project** The collection centers are still operational, although not under the specific arrangement set by the project. These centers now sell to buyers who are willing to pay the market value. However, three centers have reported cessation of operations due to the relocation of their chief executive officers (owners) outside the country. EPRON is making efforts to ensure that the EPR system functions effectively through the implementation of pro-levy payments. ***NESREA***	By this, we mean that the collection centers have ceased the activities that were specifically implemented during the project. Informal collectors have returned to dismantling. Additionally, the CCNL collection center was closed at the time of the visit, showing no activity, and there was also no activity at the MRI collection center, despite the manager stating that he collected directly from companies. This text has been updated to highlight that these activities refer to those implemented during the project's execution.
49	**The PRO database is not yet live, causing delays in full implementation of the EPR system in Nigeria** The PRO database was live at the time of the terminal interview and remains operational. However, its intended function had not fully commenced. The delay in implementing the PRO database obviously contributed to the slow progress in achieving full operationalization. This includes engaging a third-party manager for the blackbox system and levy payments by PRO ***NESREA***	The report has been updated to clarify that the PRO database was not operational at the time of the terminal review.

ANNEX II.REVIEW FRAMEWORK / MATRIX

Table 15: Review framework / matrix

Key Questions	Indicators	Information Sources	Methods of Verification
Strategic Relevance			
Is the project aligned with global, regional, and national environmental priorities (e.g., SDGs, national plans)?	- Alignment with SDGs, national policies (e.g., Ministry of Environment, NESREA).	- *CEO Endorsement Request*, *NESREA reports*, *Nigeria Circular Economy policy documents*	- Document review
How well does the project address the environmental concerns and needs of the target country?	- Extent to which the project responds to national environmental needs.	- *NESREA reports*, *Nigeria e-waste policy documents*, *Terms of reference for Terminal Review*	- Document review, stakeholder interviews
Does the project contribute to UNEP's strategic priorities (e.g., Bali Strategic Plan, South-South Cooperation)?	- Contributions to UNEP's global initiatives.	- *UNEP GEF PIR reports (2020-2023)*, *CEO Endorsement Request*, *Midterm Review Report*	- Document review, interviews
Quality of Project Design			
Were project objectives, outcomes, and outputs clearly defined and realistic?	- Clarity and feasibility of objectives and outcomes.	- *CEO Endorsement Request*, *Budget and Workplan (2018)*	- Document review
Did the design address relevant risks and assumptions effectively?	- Risk management strategy incorporated in the design.	- *CEO Endorsement Request*, *Midterm Review Report*	- Document review, interviews

Key Questions	Indicators	Information Sources	Methods of Verification
How well did the design integrate gender and social inclusion aspects?	- Gender-responsive project objectives.	- *Mainstreaming Gender in the Circular Economy Report*, *Trainings reports*	- Document review
Nature of External Context			
Were there significant external challenges that impacted the project (e.g., economic conditions, climate events)?	- Extent of external challenges and their impact.	- *Midterm Review Report*, *PIR Reports (2020-2023)*, *NESREA financial statements (2019-2023)*	- Document review, interviews
How did the project team respond to external changes or crises (e.g., COVID-19, political shifts)?	- Adaptive management responses.	- *Midterm Review Report*, *PIR Reports (2020-2023)*, *CEO Endorsement Request*, *Budget revision documents*	- Document review, interviews
Effectiveness			
To what extent were the project's objectives and outcomes achieved?	- Achievement of key outcomes (e.g., tons of e-waste recycled, number of e-waste producers registered).	- *PIR Reports (2020-2023)*, *Trainings reports*, *CEO Endorsement Request*	- Data analysis, interviews
Were the expected benefits for target groups, especially the informal sector and women, realized?	- Level of impact on key target groups (e.g., women, informal sector).	- *Mainstreaming Gender Report*, *Formalized e-waste cooperative certificate*, *NESREA collection and recycling reports*	- Data analysis, focus groups, interviews
Were any outputs or outcomes not achieved as planned?	- Outputs or outcomes that were delayed or missed.	- *Midterm Review Report*, *PIR Reports (2020-2023)*, *CEO Endorsement Request*	- Data analysis, document review, interviews
Financial Management			

Key Questions	Indicators	Information Sources	Methods of Verification
Was the project budget utilized efficiently and in accordance with UNEP's financial policies?	- Percentage of budget used, compliance with financial guidelines.	- *CEO Budget and Workplan (2018)*, *PIR Reports*, *Expenditure reports (NESREA) and UNEP financial reports*	- Financial analysis, document review, interviews
Were there any significant financial management challenges?	- Financial discrepancies, unutilized funds.	- *UNEP GEF PIR (2020-2023)*, *NESREA expenditure reports*, *Cash Advance Remittance Advices*	- Financial analysis, document review, interviews
How were funds reallocated to address unforeseen circumstances?	- Timely and strategic reallocation of funds.	- *Budget revision documents*, *UNEP GEF PIR Reports (2020-2023)*	- Financial analysis, interviews
Efficiency			
Were project activities implemented within the planned timeline and budget?	- Adherence to project timelines and budget constraints.	- *Work plans*, *PIR Reports (2020-2023)*, *Budget and Workplan (2018)*	- Document review, financial analysis
Were there any delays or cost overruns, and how were they addressed?	- Delays and corrective actions taken.	- *Midterm Review Report*, *PIR Reports (2020-2023)*, *Budget revision documents*	- Data analysis, interviews
Monitoring and Reporting			
Was an effective monitoring plan in place to track progress toward project objectives?	- Existence and quality of monitoring plan.	- *PIR Reports (2020-2023)*, *Midterm Review Report*, *Terms of Reference of Terminal Review, UNEP reports*	- Document review, interviews
Were monitoring data and reports regularly collected, analyzed, and used to inform decision-making?	- Frequency and quality of M&E reports.	- *PIR Reports (2020-2023)*, *Project Steering Committee Reports (March 2020, May 2023), UNEP reports*	- Document review, interviews

Key Questions	Indicators	Information Sources	Methods of Verification
Sustainability			
Are project outcomes likely to be sustained in the long term (financially, institutionally, socially, politically)?	- Indicators of financial, institutional, social, and political sustainability.	- *Midterm Review Report*, *PIR Reports (2020-2023)*, *NESREA financial reports*	- Sustainability assessments, interviews
What measures were in place to ensure the continuation of key activities post-project?	- Sustainability strategies (e.g., financial mechanisms, capacity building).	- *Midterm Review Report*, *Trainings reports*, *PIR Reports*	- Document review, interviews
Factors Affecting Performance			
How did internal and external factors affect project performance?	- Key factors influencing project performance (positive/negative).	- *Midterm Review Report*, *PIR Reports (2020-2023)*, *Project Steering Committee Reports (2020, 2023)*	- Interviews, document review
Were risks effectively managed during the project lifecycle?	- Risk mitigation measures in place.	- *Midterm Review Report*, *PIR Reports*	- Document review, interviews

ANNEX III. PEOPLE CONSULTED DURING THE REVIEW

Table 16: People consulted during the Review

Organization	Name	Position	Role in the project	Gender
NESREA	M. Isa Abdussalam	Director	Manager/Representative	M
NESREA	Halima Kolo Mohammed	Project Manager	Project Manager	F
NESREA	Ibrahim Ishaku	Engineer	Green Procurement Specialist	M
NESREA	Akhigbe Anastasia	Desk Officer – e-waste	Technical Officer	F
Federal Ministry of Environment	Mrs Adeola Omotunde	Director	PSC Chair	F
Federal Ministry of Environment	Jonah Stanley	GEF Focal point	GEF Focal point	M
EPRON	Ibukun Faluyi	Executive Secretary	PSC Chair	F
LASEPA	Adebayo Adedayo, Olubukola	Director Sustainability Department – Ewaste unit	Project stakeholder	F
LAWMA	Zakinat Ranti Dosunmu	Head of HR	Project stakeholder	F
Focus group with informal sector	Group of informal actors	Collectors	Project stakeholder	M & F
E-terra	Patrick Inoh	Technical Director	Project stakeholder	M
JDP waste management services	Chris Fakoya	Owner / Manager	Project stakeholder	M
Obanijesu logistics	Adeoye Fani	Collection Manager	Project stakeholder	M
Hinckley	Adrian Clews	Managing Director	Project stakeholder	M
Hinckley	Israel Israel Olagunju	Head of Research and Development	Project stakeholder	M
Hinckley	Stella Oriere	Finance Manager	Project stakeholder	F

Organization	Name	Position	Role in the project	Gender
Hinckley	Ikenna Obinna	Business Developement Manager	Project stakeholder	M
MRI (Collection center)	Koyejo Adejoye	Owner	Project stakeholder	M
CCNL (Collection center)	No team member present during visit			
UNITAR	Dr. Ruediger Kuehr	Founding Head	Participated in project design when worked with UNITAR	M
SPL Nigeria	Ayo Akintoye	CEO	EPRON board member	M
UNEP	Eloise TOUNI	UNEP Task Manager	Task Manager	F
UNEP	Ran Xie	UNEP Portfolio Manager	Project Manager	F
WEEE Forum	Lucía Herreras Martínez	Technical Manager	Project stakeholder	F
UN / SCAIM	Eduardo Caldera-Petit	Programme Office	Project stakeholder	M

ANNEX IV. KEY DOCUMENTS CONSULTED

Table 17: List of documents consulted

Project planning and reporting documents

- 10141 - CEO - budget and workplan 17.12.2018
- 10141 - CEO - CEO Endorsement_Request_30.01.2019 revised (Clean)
- 10141 Electronics PSC Report Dec 2021
- 10141 GEF PSC REPORT_March 2020
- 10141_2021_PIR_UNEP_Nigeria
- UNEP GEF PIR Fiscal Year 2020 Reporting from 1 July 2019 to 30 June 2020
- UNEP GEF PIR Fiscal Year 1 July 2021 to 30 June 2022
- UNEP GEF PIR Fiscal Year 2023 1 July 2022 to 30 June 2023
- 10141 -NESREA-Expenditure Report Q2-2023
- 10141 2023 Q1 RMB Expenditure report
- Report of the formal launch and inception meeting of the circular economy approach to electronics sector in Nigeria project
- Draft report of the GEF project steering committee meeting held on 15 th may, 2023 at providence by mantis hotel, Ikeja, Lagos state
- Terms of reference of Terminal Review of the UNEP/GEF project "Circular Economy approaches for the electronics sector in Nigeria" GEF ID 10141
- NESREA materialized co-financing letters – 2021 and 2022
- EPRON materialized co-financing letter – 2022
- ERION materialized co-financing letter – 2022
- HINCKLEY materialized co-financing letter - 2024
- UNU commitment to co-financing letter – 2028
- 1st, 2nd, and 3rd Cash Advance Remittance Advices
- Budget revision documents

1.

Project outputs – Overall

- Trainings reports
- Project communication strategy
- Mainstreaming gender in the circular economy approaches for the electronics sector in Nigeria

Project outputs work package 1:

- Guidance document for the implementation of the extended producer responsibility (EPR) programme for the electrical / electronics sector in line with circular economy
- Case study document (Piloting the Extended Producer Responsibility scheme in Nigeria), 2022
- E-waste levy calculator for EPRON – User manual

Project outputs work package 2:

- Collection and recycling costs per ton (NESREA)

Project outputs work package 3:

- 10141 Report of e-waste fractions from recyclers
- Report of e-waste collection and fractions extracted for recycling and treatment
- Formalized e-waste corporative certificate

Previous reviews/evaluations

- Midterm Review "Circular Economy Approaches for the Electronics Sector in Nigeria" (GEF ID 10141)
- 2019 to 2023 project financial statements (NESREA)

Legislation, studies, tools

- Standard on wastes of Electrical Electronics Equipment Management
- Electrical and Electronic sector regulation, 2022
- Nigeria Circular Electronics_budget and workplan – 2018
- Feasibility study on e-wastes collection and recycling in Lagos
- Circular Economy Approaches to the Electronics Sector in Nigeria
- WEEE Forum levy calculation tool

ANNEX V. REVIEW ITINERARY

The table below outlines the key steps and periods involved in the project review itinerary

Table 18: Review itinerary

Step	Period	Activities
Document Review	June 2024	Review of project proposals, PIRs, midterm review, final reports, and relevant studies.
Field Mission and Interviews	July 1st - July 9th, 2024	Field visits in Abuja and Lagos; In-depth interviews with NESREA, EPRON, Ministry of Environment, LAWMA, LASEPA, and private sector partners
Focus Group Discussion	July 4th, 2024	Focus group with informal sector workers in Lagos
Field Visits to Collection Centers	July 5th - July 8th, 2024	Site inspections of 4 collection centers and 2 recycling facilities visits in Lagos
Online Interviews	July 25th - August 13th, 2024	Online interviews with UNEP, UNITAR, SCAIM, WEEE Forum, and local importer (SPL)
Data Analysis & Draft Report	August 2024	Analysis of data from interviews, focus groups, and document review; Reporting.
Comments from the Project Manager on the Draft Report	August 2024	
Revisions to the Draft Report	August 2024	Incorporate the Project Manager's feedback into the draft. Update report or clarity and formatting
Distribution of the Report to Stakeholders for Review and Feedback	September 2024	
Final Updates to the Report	October 2024	Analyze stakeholder feedback Make final revisions based on inputs received.
Presentation Slides for Project Brief Submission	October 2024	Create slides summarizing key points of the report Prepare project brief

ANNEX VI. PROJECT BUDGET AND EXPENDITURES

I. Project Funding Sources Table

This table is included in within the report:

Table 8: Source of funding**, page 46**

II. Expenditure by Outcome/Output

This table is included in within the report:

Table 4: Budget at design and expenditure by Outcome/Output, page **27**

ANNEX VII. FINANCIAL MANAGEMENT

III. Financial Management Table

This table is included in within the report: **Table 7: Financial Management Table**, page **45**

ANNEX VIII. COMMUNICATION AND OUTREACH TOOLS

- Project website: https://saicmknowledge.org/projects/circular-economy-approaches-electronics-sector-nigeria
    - Press Release (5 Jan 2023): Nigeria acts to fight growing e-waste epidemic
    - Press Release (19 Jun 2019): Nigeria turns the tide on electronic waste
    - Web story: Dark skies, bright future: overcoming Nigeria's e-waste epidemic
    - Good Practice Brief: Finding Solutions for Electronic Waste with the Private Sector and Multi-Stakeholders Engagement
- Online training: "Promoting Circular Economy for electronics through the Extended Producer Responsibility (EPR) approach" (organized by UNEP in partnership with the WEEE Forum and Erion on the 14th and 15th of November 2022)
    - Detailed agenda
    - Recordings (both English and French), presentations, Q&A sheet and additional materials
- Revised EEE regulation (2022): https://www.nesrea.gov.ng/wp-content/uploads/2023/01/EE-sector-regulations-2022.pdf
- Nigeria EPR Guidance (2020): https://www.nesrea.gov.ng/guidance-document-for-the-implementation-of-the-extended-producer-responsibility-epr-programme/
- UNEP (2021) Towards a Circular Economy for the Electronics Sector in Africa: Overview, Actions and Recommendations: 3078 views as of 28 August 2024

2. (https://wedocs.unep.org/handle/20.500.11822/40108/statistics)

- UNEP (2023) Project brief: Initiating Circularity for electronic waste in Nigeria: A promising paradigm for treating e-waste globally
- UNEP (2023) Case study: Gaining legal ground in the Extended Producer Responsibility scheme for electronics in Nigeria
- UNEP (2023) Case study: Data management automation for the Extended Producer Responsibility scheme for electronics in Nigeria
- UNEP (2023) Case study: Piloting the Extended Producer Responsibility scheme in Nigeria

ANNEX IX. BRIEF CV OF THE REVIEWERS

Name: Boussoura TALLA – E-Waste Expert, Mission leader

Profession	Waste management consultant, e-waste expert
Nationality	Senegalese
Country experience	• Europe: France • Africa: Senegal, Cameroon, Guinea
Education	• 2003 – 2008: Master's degree in engineering in Networks and Telecommunications – INSA Toulouse, France • 2015: Mandela Washington Fellowship for Young African Leaders – University of Notre Dame, Indiana, USA • Various professional training courses in waste management, business simulation, and proposal writing.

Short biography

Mrs Boussoura Talla is an expert in e-waste management and project evaluation with over a decade of experience. She has played pivotal roles in significant projects, including the 2023 Ex-post WEEECAM project evaluation with FFEM and market assessments for e-waste management in Conakry and Senegal. Her extensive work with international organizations such as UNIDO, GEF, and various development agencies highlights her robust understanding of waste management in Africa.

Key specialties and capabilities cover:

- Waste management project design and implementation
- Projects reviews
- Stakeholder engagement and capacity building
- Strategy development for municipal and hazardous waste
- Entrepreneurship and business development in waste management
- Training and technical consulting

Selected assignments and experiences

- **WEEECAM Project Evaluation (Cameroon):** Ex-post evaluation with The French Facility for Global Environment and GRET, providing technical expertise on e-waste.
- **Waste Management Programming (Senegal):** Consultant for Peace Corps Senegal, designing strategies and training programs.
- **E-Waste Market Assessment (Guinea):** Developed a strategy to enhance e-waste management systems in Conakry for Enabel.
- **National Solar Waste Strategy (Senegal):** Lead consultant for GIZ on solar e-waste management.
- **Biomedical Waste Management (Senegal):** Developed handbooks and conducted training sessions as part of a GEF/UNIDO project.

Name: Florian Marchadour – International Waste Expert, Review support

Profession	Expert in Waste Management and Recovery
Nationality	French
Country experience	• Europe: France • Africa: Chad, Morocco, Congo, Madagascar, Cameroon
Education	• 2007-2008: Master 2 ISUR "Engineering of Urban Network Services in Developing Countries" – Political Institute of Rennes (IEP) • 2006-2007: Master's in urban Geography (research option) – University of Geography of Rennes • 2003-2006: Bachelor of Geography/Land Use Planning – University of Geography of Rennes • 2001-2003: DUT Electrical Engineering and Industrial Computing (GEII) – Technical Institute of Rennes (IUT)

- **Short biography**

Mr Florian Marchadour is an accomplished expert in waste management and project evaluation with over 15 years of experience. His expertise is evidenced by his leadership in the 2023 Ex-post WEEECAM project evaluation with FFEM and roles as Mission Chief for the "SANITA Ville propre" project and other significant waste management projects across Central Africa. His work with international development agencies like FFEM, Enabel, and AFD showcases his deep knowledge and ability to develop strategic action plans tailored to local contexts.

Key specialties and capabilities cover:

- Waste prevention and recycling: composting, plastic recycling, energy recovery
- Waste management: pre-collection, collection, processing, informal sector integration
- Project setup, management, coordination, and evaluation
- Decentralization and support to local authorities

Selected assignments and experiences

- **WEEECAM Project (Cameroon**): Ex-post evaluation as Mission Chief, providing technical expertise on project evaluation
- **"SANITA Ville propre" Project (Guinea):** Mission Chief, providing technical expertise and coaching on Waste Master Scheme
- **Feasibility Study (Congo):** Mission Chief, coordinating a consortium for a platform for organic waste recovery
- **Integrated Waste Management Project (Congo):** Waste Project Manager, overseeing a complete waste management service for 60,000 inhabitants

ANNEX X. REVIEW TORS (WITHOUT ANNEXES)

TERMS OF REFERENCE
Terminal Review of the UNEP/GEF project
"Circular Economy approaches for the electronics sector in Nigeria" GEF ID 10141
Section 1: PROJECT BACKGROUND AND OVERVIEW

(This section describes what is to be reviewed. Key parameters are: project timeframe, funding envelope, results framework and geographic scope)

Project General Information

Table 1. Project summary

UNEP Sub-programme:		**UNEP Division/Branch:**	**Industry and Economy Division**
Expected Accomplishment(s):	Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination	**Programme of Work Output(s):**	"PoW Outcomes: 3A, 3B and 3C PoW Outcome Indicators: ii, iii, iv, v and vi Direct outcomes to which project contributes: 3.1, 3.5, 3.6, 3.8 and 3.13
SDG(s) and indicator(s)	SDG target (1.5.2) & 12 (indicators 12.4.1, 12.4.2, 12.5.1)		
GEF Core Indicator Targets (identify these for projects approved prior to GEF-7[1])	9.1 Solid and liquid POPs removed or disposed: 3 tonnes PBDE 9.2: Quantity of mercury reduced: 29 tonnes of CRT lead glass 9.4: Number of countries with legislation and policy implemented to control chemicals and waste: 1 9.6: Quantity of POPs/Mercury containing materials and products directly avoided: 300 tonnes 11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment: 100 informal collectors (30% Female)		
Dates of previous project phases:	N/A	**Status of future project phases:**	

FROM THE PROJECT'S PIR REPORT (use latest version) :

Project Title:	Circular Economy approaches for the electronics sector in Nigeria

[1] This does not apply to Enabling Activities

Executing Agency:	National Environmental Standards and Regulations Enforcement Agency of Nigeria (NESREA)

Project partners:	UNEP Resource and Market Branch

Geographical Scope:	Africa

Participating Countries:	Nigeria

GEF project ID:	10141	**IMIS number*[2]:**	01689
Focal Area(s):	Chemicals and Waste	**GEF OP #:**	
GEF Strategic Priority/Objective:	CW-1-1	**GEF approval date*:**	7-Mar-19
UNEP approval date:		**Date of first disbursement*:**	26-Jun-19 (but not received until Sept by the EA)
Actual start date[3]:	4 Sept 2019	**Planned duration:**	30 Months
Intended completion date*:	31-May-22	**Actual or Expected completion date:**	31-May-23
Project Type:	MSP	**GEF Allocation*:**	USD 2,000,000
PPG GEF cost*:		**PPG co-financing*:**	
Expected MSP/FSP Co-financing*:	USD 13,086,582	**Total Cost*:**	
Mid-term Review/eval. (planned date):	N/A	**Terminal Evaluation (planned date):**	
Mid-term Review/eval. (actual date):	N/A	**No. of revisions*:**	1
Date of last Steering Committee meeting:	15 May 2023	**Date of last Revision*:**	23 May 2022
Disbursement as of 30 June 2023*:		**Date of planned financial closure*:**	31 May 2023
Date of planned completion[4]*:	31 May 2023	**Actual expenditures reported as of 30 June 2023[5]:**	
Total co-financing realized as of 31 December [year]:		**Actual expenditures entered in IMIS as of 31 December [year]*:**	

[2] Fields with an * sign (in yellow) should be filled by the Fund Management Officer
[3] Only if different from first disbursement date, e.g., in cases were a long time elapsed between first disbursement and recruitment of project manager.
[4] If there was a "Completion Revision" please use the date of the revision.
[5] Information to be provided by Executing Agency/Task Manager

Leveraged financing:[6]			

Project Rationale[7]

Nigeria has been undergoing rapid transformation in information and communication markets, mainly by importing new and used electrical and electronic equipment, generating an ever-growing amount of e-waste. E-waste recyclers in Nigeria (mainly in Lagos) have reported good recovery rates for base metals such as ferrous metals, aluminium and copper while at the same time producing quite a significant amount of waste under primitive refurbishment and material recovery approaches (such as manual dismantling and hand soldering with lead solders). Many waste fractions with no economic value are usually dumped or burned in an uncontrolled manner. This has caused severe emissions of pollutants such as heavy metals and POPs (including dioxins, furans and flame retardants (PBDEs) often adhered to fine dust particles), being released into the air, the water and soil systems[8]. A large and informal recycling sector disposes of the hazardous and non-valuable fractions of this waste stream - an estimated 52,000 tonnes of brominated plastics, 4,000 tonnes of lead, 80 tonnes of cadmium and 0.3 tonnes of mercury are burned or dumped every year. An estimated additional 80,000 tonnes of plastics are burnt in the open, generating dioxins and furans (see Table 1).

Table 1: Material recovery efficiency by the informal recycling sector in Nigeria[9]

Material fraction	Material content	WEEE going to recycling	Material recovered		Downstream process
	(% in cat 1-4)	(tonnes)	(%)	(tonnes)	
Ferrous metal	37.9%	200,000	95%	190,000	local market / export (?)
Aluminium	8.5%	46,000	85%	40,000	local market / export (?)
Copper	8.7%	47,000	70%	33,000	export
Lead	0.7%	4,000	0%	0	dumped
Cadmium	1.51E-02%	80	0%	0	dumped
Mercury	5.14E-05%	0.3	0%	0	dumped
Gold	1.25E-04%	0.7	30%	0.2	export / burned / dumped
Silver	6.28E-04%	3.4	Na	Na	
Palladium	3.13E-05%	0.2	Na	Na	
Indium	2.60E-04%	1.4	0%	0	dumped
Brominated plastics	9.6%	52,000	0%	0	burnt
Other plastics	18.4%	100,000	20%	20,000	Local market, burnt
CRT glass	10.1%	54,000	0%	0	dumped
Other	7.2%	39,000	0%	0	dumped
Total	100%	540,000		283,000	(52% recovery rate)

[6] See above note on co-financing

[7] Grey =Info to be added

[8] Informal e-waste management in Lagos, Nigeria – socio-economic impacts and feasibility of international recycling co-operations. Öko-Institut e.V. 2011. http://www.basel.int/Portals/4/Basel%20Convention/docs/eWaste/E-waste_Africa_Project_Nigeria.pdf

[9] e-Waste Country Assessment Nigeria. EMPA, Switzerland. 2012.

The following are key causes and barriers that need to be addressed to overcome the current existing problems (See also the Theory of Change in Annex A).

- **Weak regulatory control capacity over e-waste imports, collection and recycling**: In Nigeria regulations and legislation do exist to manage e-waste risks including: import legislation, Extended Producer Responsibility (EPR) legislation, and a ban on importing Cathode Ray Tube (CRT) devices. All of these support the requirements of the Basel Convention. However, these requirements, and in the case of exports from the EU the shipment regulations of the EU WEEE Directive, are infringed daily mostly without consequences. Application of the EPR legislation is hampered by the complexity of the local market; by the lack (until recently) of a Producer Responsibility Organization (PRO) being established to register producers; and by insufficient awareness and training among government regulators and inspectors on the impacts of e-waste and the mechanisms available to bring forward improvements.

- **Informality of collection and recycling actors**: E-waste is collected by a vast and unregulated informal sector representing the most marginalized groups, including women and children. While they do manage to achieve high levels of collection efficiency the conditions for workers result in direct exposures to hazardous substances with no job security or occupational protection. Furthermore, existing collection routes largely culminate in informal recycling facilities and unlicensed waste dumps, rather than environmentally sound recycling facilities and facilities deigned for the environmentally sound disposal of hazardous waste. As well as directly creating environmental and social damage, this also undermines the profitability and ability to operate of the registered recyclers who are not able to meet certain minimum quantities of wastes to treat.

- **The cost of treatment of hazardous chemicals in products:** Some materials ("fractions") are not recyclable in principle and need to be disposed of as hazardous waste. It requires substantial investment in treatment infrastructure and operational supervision to ensure environmentally sound management in line with the requirements of the Stockholm and Minamata conventions (for POPs and mercury) and the Basel Convention for other wastes, compared to the current system of informal and highly polluting ultimate disposal practices (dumping, burning, acid leaching etc.). The cost of environmentally sound management (ESM) is currently higher than the revenues generated from selling the recycled materials. There are opportunities for higher recovery of certain streams (e.g. precious metals in circuit boards) however ultimately there is a need for recyclers to supplement revenue via working on additional revenue streams. This higher cost would also be covered through economies of scale with bulking of the hazardous waste fractions across the sector allowing for a critical mass of wastes for treatment to be centralised.

- **High and unsustainable rate of generation of e-waste:** The continued presence of hazardous substances in manufacturing of both branded and non-branded electronics; and, the high and rapidly increasing rates of generation and import of e-waste (e.g. Nigeria generated almost 300,000 tonnes (te) in 2017) are a barrier to sound management. Even if measures and facilities are developed, they will not be able to address the growing amounts of waste. Major challenges include overconsumption of electronic devices by consumers in developed regions of the world; the continued import of e-waste and near-end-of-life equipment; lack of incentives for manufacturers (both domestically and internationally) to stop including CoC (Chemicals of Concern) and inadequate efficiency of component reuse and material recycling of the concerned products.

Project Results Framework

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
The electronics sector recovers and reintroduces usable materials into the value chain and disposes of hazardous waste streams in an environmentally sound manner.	1. Tonnes of recyclable material which are recovered and re-entering the value chain locally and internationally.	0 tons of recyclable material are recovered by the EPR program	10.8 kg of precious metals (Ag, Au, Pd), 150 tonnes of common metals (Fe, Al, Cu), 90 tonnes of plastics re-entering the value chain from 300 tonnes of collected e-waste	Activity report and auditing report from the contracted recyclers	Assumptions: EPR and PROs are functional Assumption: sufficient e-waste is collected, and contracts are issued with licensed recyclers Licensed recyclers adhere to EHS standards Risk: competition from the informal sector for collection	N/A
	2. Tonnes of hazardous fractions from e-waste which are safely disposed of, treated or channelled to appropriate treatment facilities	A small portion of the e-waste is collected and 200 tonnes recycled in 2017 by 2 recyclers registered by NESREA while the majority is recycled by the informal sector unsustainably and without safeguards	30 tonnes of CRT lead glass, and 3 tonnes of other hazardous fractions (CFC contained foams, mercury, batteries, frame retardants and POPs containing plastics) are safely stored or treated by Environmentally Sound Management (ESM) facilities	Basel destruction certificates	Assumption: ESM facilities are not available in Nigeria, and hazardous fractions need to be exported for environmentally sound treatment	N/A
Output 1. The Government of Nigeria and Producers jointly implement the EPR	3. Number of e-waste producers registered in Extended Producer Responsibility	Nigeria has EPR legislation but no detailed roadmap. Currently being implemented by	Year 1 – 20 producers join. Roadmap published & database established. Year 3 – 150 producers have joined the EPR programs.	PRO database	NESREA is committed to enforcing the EPR legislation and integrates the agreed roadmap into its annual	Chemicals, Waste and Air Quality Expected Accomplishment 5 (a) 3[10]

[10] Technical guidance and support services for the establishment and enforcement of laws, regulations and fiscal policies for sound chemicals management

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
legislation for the electronics sector	(EPR) programs PROs	NESREA as a voluntary initiative. PRO is legally established but with no registered members or systems e.g. registration database or staff.	Inspectors trained and actively promoting EPR.		work and budget planning. Groups of producers establish PROs and cover costs until levy is established and generating revenue.	Subprogramme 6 on Resource Efficiency, EA b, Output 1 (ii)[11]
	4. Amount of levy (USD) collected by PROs	No levy is collected towards any producers in Nigeria	Year 1 – level of levy calculated Year 3 – 100,000 USD of levy is committed	PRO database	Producers – global and local – are committed and voluntarily pay levy	
Output 2. 300 tonnes of e-waste are collected through formalized collection channels that minimize environmental and health impacts	5. Number of collection channels and points created within the EPR program	National estimated collection rate of e-waste is 52%. Lagos has two formal collecting organizations, LAWMA and LASEPA.	Minimum of 30 collection points and channels are established for the EPR program, with communication package in place	Environmental permits	NESREA to support the communication to and education of consumers	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (ii)
	6. Number of collectors gaining employment in the formal sector or with improved conditions in the informal sector (male/female)	Operational guidelines by NESREA exist ILO programme on formalization – Decent Work in e-waste sector Various projects exist on informal sector	Minimum of 50 collectors employed or contracted by collection channels of the EPR program, 30% female	Payment slips	Risk: Inability of the formalised sector to absorb and integrate informal collectors	
	7. Amount of e-waste safely collected and delivered to ESM facilities	540,000 tonnes e-waste estimated collected in Nigeria in 2010 by the informal sector.	300 tonnes of e-waste are collected and delivered to ESM facilities by the EPR program	Records kept by partner organizations	Assumption: Awareness change in and engagement of consumers to ensure delivery of products to	

[11] Increase in the number of public and private finance stakeholders that adopt sustainable finance principles, processes and frameworks

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
		0 tons of e-waste collected by the formal organizations in Lagos.			formal collection channels	
Output 3 Establish cost-effective recycling and disposal systems for various e-waste categories	8. Number of recycling centres established for ESM treatment enforcing EHS standards	2 formal recyclers for ESM of limited electronics types operational and licensed by NESREA since 2016 (Hinckley Recycling and E-Terra Technologies Ltd.)	2 pre-treatment and/or recycling centers are set up and fully operational for at least 3 product categories	Environmental permits issued by NESREA	Assumption: Pre-processing facilities are established as in-kind contribution from recycling companies	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (ii)[12]
	9. Number of formal recycling workers gaining employment (male/ female)	0 formal recycling workers employed by the EPR program	50 formal recycling workers employed in the context of the EPR program, at least 30% female	Contracts	Risk: Recyclers choose to prefer informal sector due to greater revenue and profit.	
	10. Tonnes of e-waste collected and hazardous components safely stored pending disposal	No system existing to collect or export hazardous fractions for safe trip treatment	Year 1: 1 technical roadmap on management Year 3: 300 tonnes of waste collected hazardous components segregated	Storage facility and records	Assumption: strong database is created to track the hazardous wastes and ensure they are securely stored until disposal time.	
Output 4 Regional and global knowledge exchange on Circular economy models for the electronics sector	11. Number of global companies financially supporting establishment of PROs in Africa	Partnership on Accelerating the Circular Economy (PACE) network and Alliance members have initiated PRO in Nigeria	Year 3: At least 5 global companies including member companies of PACE supporting PROs in Africa	Global fund established	Not all global companies choose to participate Local companies freeloading	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (ii)[13]

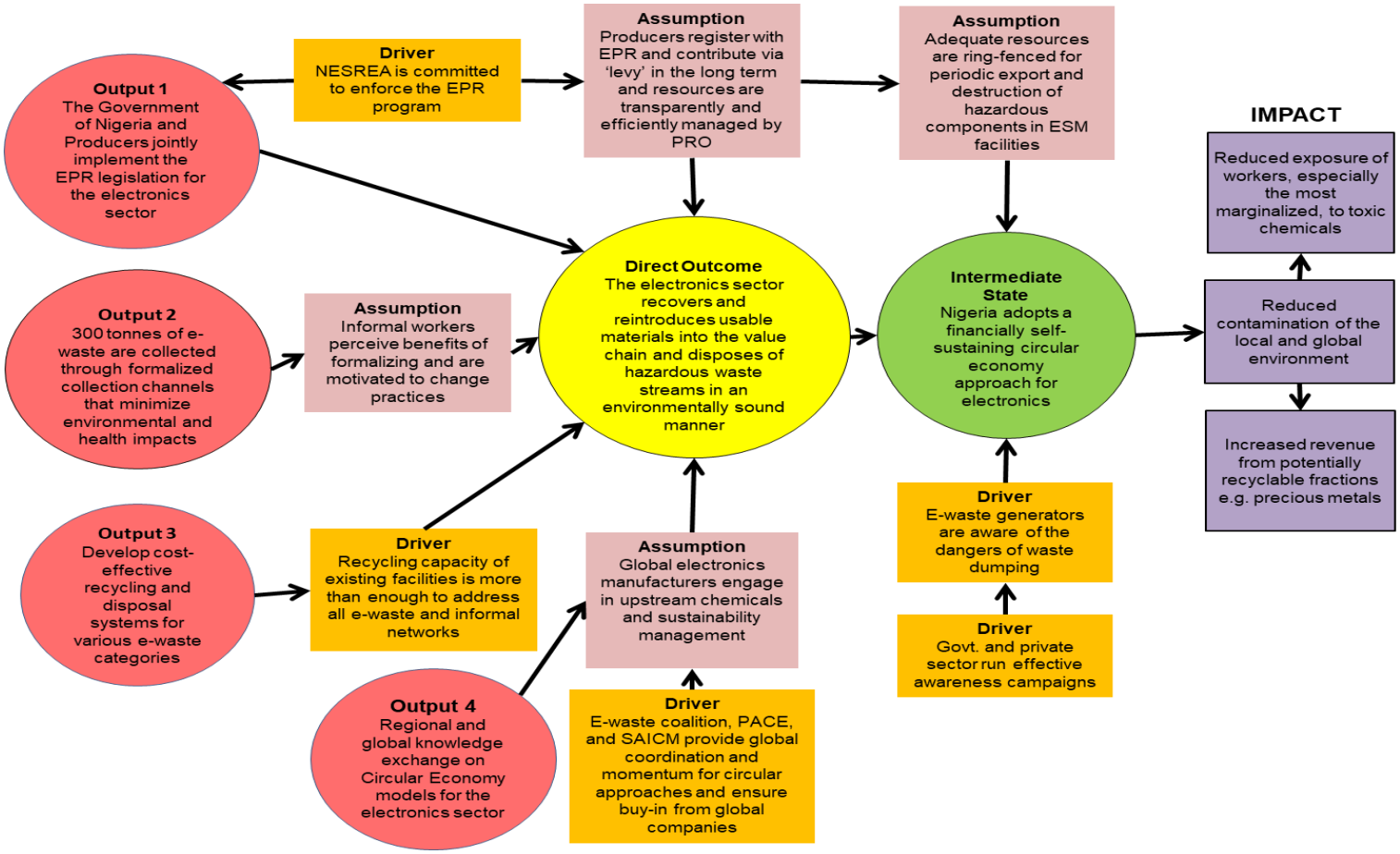
[12] Increase in the number of private companies/industries that have developed or implemented a strategy or specific actions on sound chemicals management using UNEP analysis or guidance
[13] Increase in the number of private companies/industries that have developed or implemented a strategy or specific actions on sound chemicals management using UNEP analysis or guidance

Outcome/ Output	Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS/ PoW reference
	12. Number of users accessing success cases via the KM platform	Tehnical guidance and briefings exist on circular approaches but limited publications on successful experiences by value chain actors	Year 3: 5 success cases on circular electronics published (e.g. on ecoinnovation, fund for PROs, phase out of CoC) Year 3: At least 100 downloads of case studies and Reports to SAICM regional meetings and ICCM5 in 2020	Case study publications and website statistics	Limited engagement of global brands in changing upstream chemicals and other sustainability management approaches.	

Theory of Change

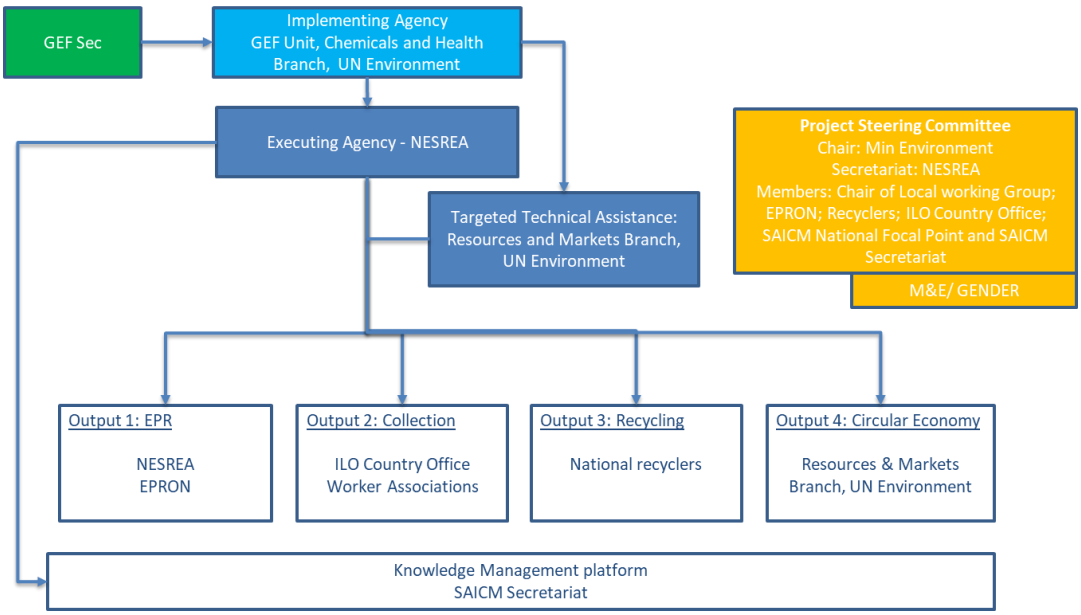
The Theory of Change is based on the above problem tree, and presents the anticipated pathway from the project outputs, via intermediate acheivements, to the final impact (red, yellow, green circles, and purple boxes). The conditions and assumptions that support or may threaten the delivery of outputs, and progression to higher level changes (outcome, impact) are presented in orange for drivers or supporting conditions; and in pink for assumptions or potential risks that will be managed as part of the M&E plan.

Key: **Red** = Outputs. **Pink** = Assumptions. **Orange** = Drivers or facilitating conditions. **Yellow**, **Green** **and** **Purple** = intended outcomes and intermediate states toward the final environmental and social impacts of the project.


Output 1
The Government of Nigeria and Producers jointly implement the EPR legislation for the electronics sector
Driver
NESREA is committed to enforce the EPR program
Assumption
Producers register with EPR and contribute via 'levy' in the long term and resources are transparently and efficiently managed by PRO
Assumption
Adequate resources are ring-fenced for periodic export and destruction of hazardous components in ESM facilities
IMPACT
Reduced exposure of workers, especially the most marginalized, to toxic chemicals
Output 2
300 tonnes of e-waste are collected through formalized collection channels that minimize environmental and health impacts
Assumption
Informal workers perceive benefits of formalizing and are motivated to change practices
Direct Outcome
The electronics sector recovers and reintroduces usable materials into the value chain and disposes of hazardous waste streams in an environmentally sound manner
Intermediate State
Nigeria adopts a financially self-sustaining circular economy approach for electronics
Reduced contamination of the local and global environment
Increased revenue from potentially recyclable fractions e.g. precious metals
Output 3
Develop cost-effective recycling and disposal systems for various e-waste categories
Driver
Recycling capacity of existing facilities is more than enough to address all e-waste and informal networks
Assumption
Global electronics manufacturers engage in upstream chemicals and sustainability management
Driver
E-waste generators are aware of the dangers of waste dumping
Driver
Govt. and private sector run effective awareness campaigns
Output 4
Regional and global knowledge exchange on Circular Economy models for the electronics sector
Driver
E-waste coalition, PACE, and SAICM provide global coordination and momentum for circular approaches and ensure buy-in from global companies

Executing Arrangements

Implementing Agency (IA): This project will be implemented by the GEF Unit of the Chemicals and Health Branch of UN Environment. The Task Manager assigned at the Implementing Agency will be responsible for the overall project supervision, overseeing the project progress through the monitoring and evaluation of project activities and progress reports. It will report the project implementing progress to GEF and will take part in the Project Steering Committee (PSC). The Chemicals and Health Branch GEF Unit Task Manager will provide guidance and oversight of project execution by the Executing Agency with review and approval of work plans, budget allocations and budget revisions proposed by the Executing Agency in accordance with UN Secretariat rules for procurement and financial management.



Executing Agency (EA): The National Environmental Standards and Regulations Enforcement Agency (NESREA), Nigeria will be the Executing Agency (EA), as it is the sole government agency empowered by Nigerian law to regulate the environment outside of the oil and gas sector. The NESREA Act empowers the Agency to engage in projects like this and partner with organizations within and outside Nigeria. It also conceptualised the Extended Producer Responsibility (EPR) programme with a view to achieving circular economy in the country and which is already in its advanced stages preparatory to full implementation for various waste streams, including electronic waste. Eleven (11) regulations had been developed by the Agency all with specific programme on EPR. NESREA has already developed operational guidelines to producers, manufacturers and large-scale distributors for the EPR and successfully guided operators in the food and beverage, as well as the electrical/electronics sectors to establish Producer Responsibility Organisations (PROs). NESREA, therefore, has the requisite organisational capacity and legal backing to carry out the functions of the EA. The EA's key roles include:

- Establishing, housing and supervising the project execution unit (PEU).
- Acting as Secretariat for the Project Steering Committee (PSC).

- Overseeing that the project runs according to the agreed work plan, budget and reporting tasks
- Providing the required project reports, including quarterly progress and expenditure reports and annual Project Implementation Review and Cofinance reports
- Communicating with, and disseminating information to project stakeholders.
- Coordinating project activities with those of the SAICM project for knowledge management platform.

The EA will be contracted through a Project Cooperation Agreement either to the executing agency or another party in accordance with project document and budget.

Project Execution Unit (PEU): The PEU will be staffed by a project manager with support from an administration, procurement and finance officer. The role of the PEU is to:

- Ensure Project execution (all technical aspects of project implementation).
- Ensure project governance and oversight of the financial resources from GEF investment.
- Provide staff time and expertise in guiding and advancing the project.
- Sharing all achievements and project products/outputs with project stakeholders.
- Monitoring the execution of project components by the executing partners.
- Organize the PSC meetings and serve as its Secretariat.
- Management and implement the project results and output level M&E framework, to evaluate project performance.
- Manage the flow of information from the field, producing periodic monitoring reports. These include as a minimum, the annual Project Implementation Review (PIR) submitted to GEF in July each year; annual planning documents including detailed workplan, financial forecast, and procurement plan; and quarterly expenditure and progress reports.

Targeted technical assistance: The Resources and Markets Branch of UN Environment will contribute staff time and expertise in guiding and advancing the outputs of the project through UN Environment's in-kind support; and via internal cooperation agreements directly with the Implementing Agency, with a clearly defined set of activities and resources which have been agreed during the project preparation (refer to Proposed Alternative Scenario). While funds will flow directly from the Implementing Agency to the Resources and Markets Branch, financial and technical reporting on these funds will be to the Executing Agency which will compile reports to provide complete technical and financial reporting to the Implementing Agency. Co-finance from these partners covers the staff time and costs for coordination of the project activities with the ongoing programmes of work.

PSC: The PSC's membership includes IA, EA (as Secretariat) and other relevant institutions as needed and to be further defined during the project iinception. The role of the PSC is to:

- Oversee the GEF Project.
- Provide overall guidance and ensure coordination between all parties.
- Provide overall supervision for project implementation.
- Review and endorse the annual work plan and budget.
- Oversee the implementation of corrective actions.
- Enhance synergy between the GEF project and other ongoing initiatives related to chemicals and waste.

The PSC will be chaired by a representative of the Ministry for Environment as the lead policymaker on the environment in the country with the mandate for managing chemicals and waste. The PSC will include members from the SAICM Secretariat and the Nigerian National Focal Point, and other members of the PSC with a mandate or contributing activity.

Project Cost and Financing

Project Budget and Co-Finance Budget attached as Annex A

Implementation Issues

There was an initial long delay in the EA receiving the first disbursement, which was only confirmed in September 2019, despite the PCA being signed much earlier, in May that year. The start date of the project should therefore be September 2019. The project faced delays caused by the COVIC pandemic which started six months into project implementation. These delays eventually led to an extension by 1 year (processed in May 2022).

Other issues that arose are mainly the difficulties in engaging ILO which was initially anticipated as a delivery partner but who did not end up participating fully. The reasons for this should be examined by the reviewer, as well as any impact that this may have had on achievement of the socio-economic and gender plan particularly for the most informal parts of the value chain.

Furthermore the project was significantly affected by economic factors namely that the price offered to the collectors and recyclers was lower than the prices available to collectors in the informal sector. This is partly driven by organized 'brokers' often from aboard, who engage informal collectors to provide valuable fractions, presumably accompanied by dumping/ burning of un-economic fractions in the informal sector. The reviewer should aim to investigate these informal channels to understand the likelihood of the project influencing them going forward, and strategies that may be effective for EPRON and NESREA to overcome the price differential in a sustainable manner.

Section 2. OBJECTIVE AND SCOPE OF THE REVIEW

Objective of the Review

In line with the UNEP Evaluation Policy[14] and the UNEP Programme Manual[15], the Terminal Review (TR) is undertaken at operational completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The Review has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and NESREA. Therefore, the Review will identify lessons of operational relevance for future project formulation and implementation, especially for future phases of the project, where applicable.

Key Review principles

[14] https://www.unenvironment.org/about-un-environment/evaluation-office/policies-and-strategies
[15] https://wecollaborate.unep.org

Review findings and judgements will be based on **sound evidence and analysis**, clearly documented in the Review Report. Information will be triangulated (i.e. verified from different sources) as far as possible, and when verification is not possible, the single source will be mentioned (whilst anonymity is still protected). Analysis leading to evaluative judgements should always be clearly spelled out.

The "Why?" Question. As this is a Terminal Review and similar interventions are envisaged for the future, particular attention will be given to learning from the experience. Therefore, the "why?" question should be at the front of the consultant(s)' minds all through the review exercise and is supported by the use of a theory of change approach. This means that the consultant(s) need to go beyond the assessment of "what" the project performance was and make a serious effort to provide a deeper understanding of "why" the performance was as it was (i.e. what contributed to the achievement of the project's results). This should provide the basis for the lessons that can be drawn from the project.

Attribution, Contribution and Credible Association: In order to *attribute* any outcomes and impacts to a project intervention, one needs to consider the difference between what has happened with, and what would have happened without, the project (i.e. take account of changes over time and between contexts in order to isolate the effects of an intervention). This requires appropriate baseline data and the identification of a relevant counterfactual, both of which are frequently not available for reviews. Establishing the *contribution* made by a project in a complex change process relies heavily on prior intentionality (e.g. approved project design documentation, logical framework) and the articulation of causality (e.g. narrative and/or illustration of the Theory of Change). Robust evidence that a project was delivered as designed and that the expected causal pathways developed supports claims of contribution and this is strengthened where an alternative theory of change can be excluded. A *credible association* between the implementation of a project and observed positive effects can be made where a strong causal narrative, although not explicitly articulated, can be inferred by the chronological sequence of events, active involvement of key actors and engagement in critical processes.

Communicating Review Results. A key aim of the Review is to encourage reflection and learning by UNEP staff and key project stakeholders. The consultant should consider how reflection and learning can be promoted, both through the review process and in the communication of review findings and key lessons. Clear and concise writing is required on all review deliverables. Draft and final versions of the main Review Report will be shared with key stakeholders by the Task Manager. There may, however, be several intended audiences, each with different interests and needs regarding the report. The consultant will plan with the Task Manager which audiences to target and the easiest and clearest way to communicate the key review findings and lessons to them. This may include some, or all, of the following; a webinar, conference calls with relevant stakeholders, the preparation of a review brief or interactive presentation.

Key Strategic Questions

In addition to the review criteria outlined in Section 10 below, the Review will address the **strategic questions**[16] listed below(no more than 3 questions are recommended). These are questions of interest to UNEP and to which the project is believed to be able to make a substantive contribution. Also included are five questions that are required when reporting in the GEF Portal and these must be addressed in the TR:

1. What lessons and recommendations can be drawn from the project in relation to socio-economic safeguards and engagement of the informal sector? In particular on engagement with ILO

2. How effective was private sector engagement including of the PRO both in Nigeria and globally? How could international investments in PROs be more effectively leveraged?

[16] The strategic questions should not duplicate questions that will be addressed under the standard review criteria described in section 10.

3. What changes were made to adapt to the effects of COVID-19 and how might any changes affect the project's performance?

Address the questions required for the GEF Portal in the appropriate parts of the report and provide a **summary of the findings in the Conclusions section of the report**:

a) Under Monitoring and Reporting/Monitoring of Project Implementation:

What was the performance at the project's–completion against Core Indicator Targets? (For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided[17]).

b) Under Factors Affecting Performance/Stakeholder Participation and Cooperation:

What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

c) Under Factors Affecting Performance/Responsiveness to Human Rights and Gender Equality:

3. What were the completed gender-responsive measures and, if applicable, actual gender result areas? *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)*

d) Under Factors Affecting Performance/Environmental and Social Safeguards:

4. What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this Review should be shared with the Task Manager for uploading in the GEF Portal)*

e) Under Factors Affecting Performance/Communication and Public Awareness:

5. What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval)*

Review Criteria

All review criteria will be rated on a six-point scale. Sections A-I below, outline the scope of the review criteria. The set of review criteria are grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the availability of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance.

[17] This does not apply to Enabling Activities

Annex 1 of these Terms of Reference provides a table with a list of various tools, templates and guidelines that can help Review Consultant(s) to follow a thorough review process that meets all of UNEP's needs.

A. Strategic Relevance

The Review will assess the extent to which the activity is suited to the priorities and policies of the donors, implementing regions/countries and the target beneficiaries. The Review will include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. Under strategic relevance an assessment of the complementarity of the project with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:

i. *Alignment to the UNEP's Medium-Term Strategy[18] (MTS), Programme of Work (POW) and Strategic Priorities*

The Review should assess the project's alignment with the MTS and POW under which the project was approved and include, in its narrative, reflections on the scale and scope of any contributions made to the planned results reflected in the relevant MTS and POW. UNEP strategic priorities include the Bali Strategic Plan for Technology Support and Capacity Building[19] (BSP) and South-South Cooperation (S-SC). The BSP relates to the capacity of governments to: comply with international agreements and obligations at the national level; promote, facilitate and finance environmentally sound technologies and to strengthen frameworks for developing coherent international environmental policies. S-SC is regarded as the exchange of resources, technology and knowledge between developing countries.

ii. Alignment to Donor/GEF/Partner Strategic Priorities

Donor strategic priorities will vary across interventions. The Review will assess the extent to which the project is suited to, or responding to, donor priorities. In some cases, alignment with donor priorities may be a fundamental part of project design and grant approval processes while in others, for example, instances of 'softly-earmarked' funding, such alignment may be more of an assumption that should be assessed.

iii. Relevance to Global, Regional, Sub-regional and National Environmental Priorities

The Review will assess the alignment of the project with global priorities such as the SDGs and Agenda 2030. The extent to which the intervention is suited, or responding to, the stated environmental concerns and needs of the countries, sub-regions or regions where it is being implemented will also be considered. Examples may include: UN Development Assistance Frameworks (UNDAF) or, national or sub-national development plans, poverty reduction strategies or Nationally Appropriate Mitigation Action (NAMA) plans or regional agreements etc. Within this section consideration will be given to whether the needs of all beneficiary groups are being met and reflects the current policy priority to leave no-one behind.

iv. *Complementarity with Relevant Existing Interventions/Coherence[20]*

[18] UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents

[19] http://www.unep.fr/ozonaction/about/bsp.htm

[20] This sub-category is consistent with the new criterion of 'Coherence' introduced by the OECD-DAC in 2019.

An assessment will be made of how well the project, either at design stage or during the project inception or mobilization[21], took account of ongoing and planned initiatives (under the same sub-programme, other UNEP sub-programmes, or being implemented by other agencies within the same country, sector or institution) that address similar needs of the same target groups. The Review will consider if the project team, in collaboration with Regional Offices and Sub-Programme Coordinators, made efforts to ensure their own intervention was complementary to other interventions, optimized any synergies and avoided duplication of effort. Examples may include work within UNDAFs or One UN programming. Linkages with other interventions should be described and instances where UNEP's comparative advantage has been particularly well applied should be highlighted.

Factors affecting this criterion may include:

- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equity
- Country ownership and driven-ness

B. Quality of Project Design

The quality of project design is assessed using an agreed template during the review inception phase. Ratings are attributed to identified criteria and an overall Project Design Quality rating is established. The complete Project Design Quality template should be annexed in the Review Inception Report. Later, the overall Project Design Quality rating[22] should be entered in the final review ratings table (as item B) in the Main Review Report and a summary of the project's strengths and weaknesses at design stage should be included within the body of the Main Review Report.

Factors affecting this criterion may include (at the design stage):

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity

6. C. Nature of External Context

At review inception stage a rating is established for the project's external operating context (considering the prevalence of conflict, natural disasters and political upheaval[23]). This rating is entered in the final review ratings table as item C. Where a project has been rated as facing either an *Unfavourable* or *Highly Unfavourable* external operating context, and/or a negative external event has occurred during project implementation, the ratings for Effectiveness, Efficiency and/or Sustainability may be increased at the discretion of the Review Consultant and Task Manager together. A justification for such an increase must be given.

[21] A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.
[22] In some instances, based on data collected during the review process, the assessment of the project's design quality may change from Inception Report to Main Review Report.
[23] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team. From March 2020 this should include the effects of COVID-19.

7. D. Effectiveness

i. Availability of Outputs[24]

The Review will assess the project's success in producing the programmed outputs and making them available to the intended beneficiaries as well as its success in achieving milestones as per the project design document (ProDoc). Any formal modifications/revisions made during project implementation will be considered part of the project design. Where the project outputs are inappropriately or inaccurately stated in the ProDoc, reformulations may be necessary in the reconstruction of the Theory of Change (TOC). In such cases a table should be provided showing the original and the reformulation of the outputs for transparency. The availability of outputs will be assessed in terms of both quantity and quality, and the assessment will consider their ownership by, and usefulness to, intended beneficiaries and the timeliness of their provision. It is noted that emphasis is placed on the performance of those outputs that are most important to achieve outcomes. The Review will briefly explain the reasons behind the success or shortcomings of the project in delivering its programmed outputs available and meeting expected quality standards.

Factors affecting this criterion may include:

- Preparation and readiness
- Quality of project management and supervision[25]

ii. Achievement of Project Outcomes[26]

The achievement of project outcomes is assessed as performance against the outcomes as defined in the reconstructed[27] Theory of Change. These are outcomes that are intended to be achieved by the end of the project timeframe and within the project's resource envelope. Emphasis is placed on the achievement of project outcomes that are most important for attaining intermediate states. As with outputs, a table can be used to show where substantive amendments to the formulation of project outcomes is necessary to allow for an assessment of performance. The Review should report evidence of attribution between UNEP's intervention and the project outcomes. In cases of normative work or where several actors are collaborating to achieve common outcomes, evidence of the nature and magnitude of UNEP's 'substantive contribution' should be included and/or 'credible association' established between project efforts and the project outcomes realised.

Factors affecting this criterion may include:

- Quality of project management and supervision
- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equity

[24] Outputs are the availability (for intended beneficiaries/users) of new products and services and/or gains in knowledge, abilities and awareness of individuals or within institutions (UNEP, 2019).
[25] For GEF funded projects 'project management and supervision' will refer to the project management performance of the Executing Agency and the technical backstopping provided by UNEP, as Implementing Agency.
[26] Outcomes are the use (i.e. uptake, adoption, application) of an output by intended beneficiaries, observed as changes in institutions or behavior, attitude or condition (UNEP, 2019)
[27] UNEP staff are currently required to submit a Theory of Change with all submitted project designs. The level of 'reconstruction' needed during a review will depend on the quality of this initial TOC, the time that has lapsed between project design and implementation (which may be related to securing and disbursing funds) and the level of any changes made to the project design. In the case of projects pre-dating 2013 the intervention logic is often represented in a logical framework and a TOC will need to be constructed in the inception stage of the review.

- Communication and public awareness

iii. Likelihood of Impact

Based on the articulation of long-lasting effects in the reconstructed TOC *(i.e. from project outcomes, via intermediate states, to impact)*, the Review will assess the likelihood of the intended, positive impacts becoming a reality. Project objectives or goals should be incorporated in the TOC, possibly as intermediate states or long-lasting impacts. The Evaluation Office's approach to the use of TOC in project reviews is outlined in a guidance note and is supported by an excel-based flow chart, 'Likelihood of Impact Assessment Decision Tree'. Essentially the approach follows a 'likelihood tree' from project outcomes to impacts, taking account of whether the assumptions and drivers identified in the reconstructed TOC held. Any unintended positive effects should also be identified and their causal linkages to the intended impact described.

The Review will also consider the likelihood that the intervention may lead, or contribute to, unintended negative effects (e.g. will vulnerable groups such as those living with disabilities and/or women and children, be disproportionally affected by the project?). Some of these potential negative effects may have been identified in the project design as risks or as part of the analysis of Environmental and Social Safeguards.

The Review will consider the extent to which the project has played a catalytic role[28] or has promoted scaling up and/or replication as part of its Theory of Change (either explicitly as in a project with a demonstration component or implicitly as expressed in the drivers required to move to outcome levels) and as factors that are likely to contribute to greater or long lasting impact.

Ultimately UNEP and all its partners aim to bring about benefits to the environment and human well-being. Few projects are likely to have impact statements that reflect such long-lasting or broad-based changes. However, the Review will assess the likelihood of the project to make a substantive contribution to the long-lasting changes represented by the Sustainable Development Goals, and/or the intermediate-level results reflected in UNEP's Expected Accomplishments and the strategic priorities of funding partner(s).

Factors affecting this criterion may include:

- Quality of Project Management and Supervision (including adaptive management)
- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity
- Country ownership and driven-ness
- Communication and public awareness

8. E. Financial Management

[28] The terms catalytic effect, scaling up and replication are inter-related and generally refer to extending the coverage or magnitude of the effects of a project. Catalytic effect is associated with triggering additional actions that are not directly funded by the project – these effects can be both concrete or less tangible, can be intentionally caused by the project or implied in the design and reflected in the TOC drivers, or can be unintentional and can rely on funding from another source or have no financial requirements. Scaling up and Replication require more intentionality for projects, or individual components and approaches, to be reproduced in other similar contexts. Scaling up suggests a substantive increase in the number of new beneficiaries reached/involved and may require adapted delivery mechanisms while Replication suggests the repetition of an approach or component at a similar scale but among different beneficiaries. Even with highly technical work, where scaling up or replication involves working with a new community, some consideration of the new context should take place and adjustments made as necessary.

Financial management will be assessed under three themes: *adherence* to UNEP's financial policies and procedures, *completeness* of financial information and *communication* between financial and project management staff. The Review will establish the actual spend across the life of the project of funds secured from all donors. This expenditure will be reported, where possible, at output/component level and will be compared with the approved budget. The Review will verify the application of proper financial management standards and adherence to UNEP's financial management policies. Any financial management issues that have affected the timely delivery of the project or the quality of its performance will be highlighted. The Review will record where standard financial documentation is missing, inaccurate, incomplete or unavailable in a timely manner. The Review will assess the level of communication between the Project Manager and the Fund Management Officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach.

Factors affecting this criterion may include:

- Preparation and readiness
- Quality of project management and supervision

9. F. Efficiency

Under the efficiency criterion the Review will assess the extent to which the project delivered maximum results from the given resources. This will include an assessment of the cost-effectiveness and timeliness of project execution.

Focusing on the translation of inputs into outputs, *cost-effectiveness* is the extent to which an intervention has achieved, or is expected to achieve, its results at the lowest possible cost. *Timeliness* refers to whether planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently. The Review will also assess to what extent any project extension could have been avoided through stronger project management and identify any negative impacts caused by project delays or extensions. The Review will describe any cost or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe and consider whether the project was implemented in the most efficient way compared to alternative interventions or approaches.

The Review will give special attention to efforts made by the project teams during project implementation to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities[29] with other initiatives, programmes and projects etc. to increase project efficiency.

The factors underpinning the need for any project extensions will also be explored and discussed. Consultants should note that as management or project support costs cannot be increased in cases of 'no cost extensions', such extensions represent an increase in unstated costs to UNEP and Executing Agencies.

Factors affecting this criterion may include:

- Preparation and readiness (e.g. timeliness)
- Quality of project management and supervision
- Stakeholders participation and cooperation

[29] Complementarity with other interventions during project design, inception or mobilization is considered under Strategic Relevance above.

10. G. Monitoring and Reporting

The Review will assess monitoring and reporting across three sub-categories: monitoring design and budgeting, monitoring implementation and project reporting.

i. Monitoring Design and Budgeting

Each project should be supported by a sound monitoring plan that is designed to track progress against SMART[30] results towards the achievement of the project's outputs and outcomes, including at a level disaggregated by gender, marginalisation or vulnerability, including those living with disabilities. In particular, the Review will assess the relevance and appropriateness of the project indicators as well as the methods used for tracking progress against them as part of conscious results-based management. The Review will assess the quality of the design of the monitoring plan as well as the funds allocated for its implementation. The adequacy of resources for Mid-Term and Terminal Evaluation/Review should be discussed, where applicable.

ii. Monitoring of Project Implementation

The Review will assess whether the monitoring system was operational and facilitated the timely tracking of results and progress towards project objectives throughout the project implementation period. This assessment will include consideration of whether the project gathered relevant and good quality baseline data that is accurately and appropriately documented. This should include monitoring the representation and participation of disaggregated groups, including gendered, marginalised or vulnerable groups, such as those living with disabilities, in project activities. It will also consider the quality of the information generated by the monitoring system during project implementation and how it was used to adapt and improve project execution, achievement of outcomes and ensure sustainability. The Review should confirm that funds allocated for monitoring were used to support this activity.

The performance at project completion against Core Indicator Targets should be reviewed. For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided.

iii. Project Reporting

UNEP has a centralised project information management system (Anubis) in which project managers upload six-monthly progress reports against agreed project milestones. This information will be provided to the Review Consultant(s) by the Task Manager. Some projects have additional requirements to report regularly to funding partners, which will be supplied by the project team (e.g. the Project Implementation Reviews and Tracking Tool for GEF-funded projects). The Review will assess the extent to which both UNEP and GEF reporting commitments have been fulfilled. Consideration will be given as to whether reporting has been carried out with respect to the effects of the initiative on disaggregated groups.

Factors affecting this criterion may include:

- Quality of project management and supervision
- Responsiveness to human rights and gender equity (e.g disaggregated indicators and data)

[30] SMART refers to results that are specific, measurable, achievable, relevant and time-oriented. Indicators help to make results measurable.

11. H. Sustainability

Sustainability[31] is understood as the probability of the benefits derived from the achievement of project outcomes being maintained and developed after the close of the intervention. The Review will identify and assess the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (i.e. 'assumptions' and 'drivers'). Some factors of sustainability may be embedded in the project design and implementation approaches while others may be contextual circumstances or conditions that evolve over the life of the intervention. Where applicable an assessment of bio-physical factors that may affect the sustainability of direct outcomes may also be included.

i. Socio-political Sustainability

The Review will assess the extent to which social or political factors support the continuation and further development of the benefits derived from project outcomes. It will consider the level of ownership, interest and commitment among government and other stakeholders to take the project achievements forwards. In particular the Review will consider whether individual capacity development efforts are likely to be sustained.

ii. Financial Sustainability

Some project outcomes, once achieved, do not require further financial inputs, e.g. the adoption of a revised policy. However, in order to derive a benefit from this outcome further management action may still be needed e.g. to undertake actions to enforce the policy. Other project outcomes may be dependent on a continuous flow of action that needs to be resourced for them to be maintained, e.g. continuation of a new natural resource management approach. The Review will assess the extent to which project outcomes are dependent on future funding for the benefits they bring to be sustained. Secured future funding is only relevant to financial sustainability where the project outcomes have been extended into a future project phase. Even where future funding has been secured, the question still remains as to whether the project outcomes are financially sustainable.

iii. Institutional Sustainability

The Review will assess the extent to which the sustainability of project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance. It will consider whether institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. are robust enough to continue delivering the benefits associated with the project outcomes after project closure. In particular, the Review will consider whether institutional capacity development efforts are likely to be sustained.

Factors affecting this criterion may include:

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equity (e.g. where interventions are not inclusive, their sustainability may be undermined)
- Communication and public awareness
- Country ownership and driven-ness

[31] As used here, 'sustainability' means the long-term maintenance of outcomes and consequent impacts, whether environmental or not. This is distinct from the concept of sustainability in the terms 'environmental sustainability' or 'sustainable development', which imply 'not living beyond our means' or 'not diminishing global environmental benefits' (GEF STAP Paper, 2019, Achieving More Enduring Outcomes from GEF Investment)

I. Factors Affecting Project Performance and Cross-Cutting Issues

(These factors are rated in the ratings table but are discussed within the Main Review Report as cross-cutting themes as appropriate under the other review criteria, above. If these issues have not been addressed under the Review Criteria above, then independent summaries of their status within the reviewed project should be given in this section)

i. Preparation and Readiness

This criterion focuses on the inception or mobilisation stage of the project (i.e. the time between project approval and first disbursement). The Review will assess whether appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular the Review will consider the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements. *(Project preparation is included in the template for the assessment of Project Design Quality).*

ii. Quality of Project Management and Supervision

For GEF funded projects 'project management and supervision' may refer to the project management performance of the Executing Agency and the technical backstopping and supervision provided by UNEP as Implementing Agency. The performance of parties playing different roles should be discussed and a rating provided for both types of supervision (UNEP/Implementing Agency; Partner/Executing Agency) and the overall rating for this sub-category established as a simple average of the two.

The Review will assess the effectiveness of project management with regard to: providing leadership towards achieving the planned outcomes; managing team structures; maintaining productive partner relationships (including Steering Groups etc.); maintaining project relevance within changing external and strategic contexts; communication and collaboration with UNEP colleagues; risk management; use of problem-solving; project adaptation and overall project execution. Evidence of adaptive management should be highlighted.

iii. Stakeholder Participation and Cooperation

Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs, target users of project outputs and any other collaborating agents external to UNEP and the executing partner(s). The assessment will consider the quality and effectiveness of all forms of communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise. The inclusion and participation of all differentiated groups, including gender groups should be considered.

The progress, challenges and outcomes regarding engagement of stakeholders in the project/program occurring since the MTR should be reviewed. This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval.

iv. Responsiveness to Human Rights and Gender Equality

The Review will ascertain to what extent the project has applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within this human rights context the Review will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment[32].

The report should present the extent to which the intervention, following an adequate gender analysis at design stage, has implemented the identified actions and/or applied adaptive management to ensure that Gender Equality and Human Rights are adequately taken into account. In particular the Review will consider to what extent project, implementation and monitoring have taken into consideration: (i) possible inequalities (especially those related to gender) in access to, and the control over, natural resources; (ii) specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and (iii) the role of disadvantaged groups (especially women, youth and children and those living with disabilities) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation.

The completed gender-responsive measures and, if applicable, actual gender result areas should be reviewed. This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent.

v. Environmental and Social Safeguards

UNEP projects address environmental and social safeguards primarily through the process of environmental and social screening at the project approval stage, risk assessment and management (avoidance, minimization, mitigation or, in exceptional cases, offsetting) of potential environmental and social risks and impacts associated with project and programme activities. The Review will confirm whether UNEP requirements[33] were met to: *review* risk ratings on a regular basis; *monitor* project implementation for possible safeguard issues; *respond* (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and r*eport* on the implementation of safeguard management measures taken. UNEP requirements for proposed projects to be screened for any safeguarding issues; for sound environmental and social risk assessments to be conducted and initial risk ratings to be assigned are reviewed above under Quality of Project Design).

The Review will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

Implementation of the management measures against the Safeguards Plan submitted at CEO Approval should be reviewed, the risk classifications verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. Any supporting documents gathered by the Consultant should be shared with the Task Manager.

vi. Country Ownership and Driven-ness

[32]The Evaluation Office notes that Gender Equality was first introduced in the UNEP Project Review Committee Checklist in 2010 and, therefore, provides a criterion rating on gender for projects approved from 2010 onwards. Equally, it is noted that policy documents, operational guidelines and other capacity building efforts have only been developed since then and have evolved over time. https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/-Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y

[33] For the review of project concepts and proposals, the Safeguard Risk Identification Form (SRIF) was introduced in 2019 and replaced the Environmental, Social and Economic Review note (ESERN), which had been in place since 2016. In GEF projects safeguards have been considered in project designs since 2011.

The Review will assess the quality and degree of engagement of government / public sector agencies in the project. While there is some overlap between Country Ownership and Institutional Sustainability, this criterion focuses primarily on the forward momentum of the intended projects results, i.e. either: a) moving forwards from outputs to project outcomes or b) moving forward from project outcomes towards intermediate states. The Review will consider the involvement not only of those directly involved in project execution and those participating in technical or leadership groups, but also those official representatives whose cooperation is needed for change to be embedded in their respective institutions and offices (e.g. representatives from multiple sectors or relevant ministries beyond Ministry of Environment). This factor is concerned with the level of ownership generated by the project over outputs and outcomes and that is necessary for long term impact to be realised. Ownership should extend to all gender and marginalised groups.

vii. Communication and Public Awareness

The Review will assess the effectiveness of: a) communication of learning and experience sharing between project partners and interested groups arising from the project during its life and b) public awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large. The Review should consider whether existing communication channels and networks were used effectively, including meeting the differentiated needs of gendered or marginalised groups, and whether any feedback channels were established. Where knowledge sharing platforms have been established under a project the Review will comment on the sustainability of the communication channel under either socio-political, institutional or financial sustainability, as appropriate

The project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions should be reviewed. This should be based on the documentation approved at CEO Endorsement/Approval.

Section 3. REVIEW APPROACH, METHODS AND DELIVERABLES

The Terminal Review will be an in-depth review using a participatory approach whereby key stakeholders are kept informed and consulted throughout the review process. Both quantitative and qualitative review methods will be used as appropriate to determine project achievements against the expected outputs, outcomes and impacts. It is highly recommended that the consultant(s) maintains close communication with the project team and promotes information exchange throughout the review implementation phase in order to increase their (and other stakeholder) ownership of the review findings. Where applicable, the consultant(s) should provide a geo-referenced map that demarcates the area covered by the project and, where possible, provide geo-reference photographs of key intervention sites (e.g. sites of habitat rehabilitation and protection, pollution treatment infrastructure, etc.)

The findings of the Review will be based on the following: A **desk review** of:

- Relevant background documentation, inter alia:
- Project design documents (including minutes of the project design review meeting at approval); Annual Work Plans and Budgets or equivalent, revisions to the project (Project Document Supplement), the logical framework and its budget;

- Project reports such as six-monthly progress and financial reports, progress reports from collaborating partners, meeting minutes, relevant correspondence and including the Project Implementation Reviews and Tracking Tool etc.;
- Project deliverables (e.g. publications, assessments etc): [list];
- Mid-Term Review or Mid-Term Evaluation of the project;
- Evaluations/Reviews of similar projects.

(a) **Interviews** (individual or in group) with:

- UNEP Task Manager (TM);
- Project Manager (PM)
- Project management team;
- UNEP Fund Management Officer (FMO);
- Portfolio Manager and Sub-Programme Coordinator, where appropriate;
- Project partners, including EPRON, NESREA, Ministry of Environment, LAWMA and LASEPA, ILO country office, other PSC members, informal collectors and collectors and recyclers, registered producers members and non-members of EPRON, Standards Organization of Nigeria and Customs.
- Relevant resource persons;
- Representatives from civil society and specialist groups (such as women's, farmers and trade associations etc).
-

(b) **Field visits:** visits to the recyclers & a sample of collection centres established by the project.

(c) **Other data collection tools:** If needed, to be decided by the Review Consultant at the inception phase

Review Deliverables and Review Procedures

The Review Consultant will prepare:

- **Inception Report:** (see Annex 1 for a list of all templates, tables and guidance notes) containing an assessment of project design quality, a draft reconstructed Theory of Change of the project, project stakeholder analysis, review framework and a tentative review schedule.

- **Preliminary Findings Note:** typically in the form of a PowerPoint presentation, the sharing of preliminary findings is intended to support the participation of the project team, act as a means to ensure all information sources have been accessed and provide an opportunity to verify emerging findings.

- **Draft and Final Review Report:** containing an executive summary that can act as a stand-alone document; detailed analysis of the review findings organised by review criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table.

A **Review Brief** (a 2-page overview of the evaluand and review findings) for wider dissemination through the UNEP website may be required. This will be discussed with the Task Manager no later than during the finalization of the Inception Report.

Review of the Draft Review Report. The Review Consultant will submit a draft report to the Task Manager and revise the draft in response to their comments and suggestions. The Task Manager will then forward the revised draft report to other project stakeholders, for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions

as well as providing feedback on the proposed recommendations and lessons. Any comments or responses to draft reports will be sent to the Task Manager for consolidation. The Task Manager will provide all comments to the Review Consultant for consideration in preparing the final report, along with guidance on areas of contradiction or issues requiring an institutional response.

The final version of the Terminal Review report will be assessed for its quality by the UNEP Evaluation Office using a standard template and this assessment will be annexed to the final Terminal Review report.

At the end of the review process, the Task Manager will prepare a **Recommendations Implementation Plan** in the format of a table, to be completed and updated at regular intervals, and circulate the **Lessons Learned**.

The Review Consultant

The Review Consultant will liaise with the Task Manager on any procedural and methodological matters related to the Review. It is, however, the consultant's individual responsibility (where applicable) to arrange for their visas and immunizations as well as to plan meetings with stakeholders, organize online surveys, obtain documentary evidence and any other logistical matters related to the assignment. The UNEP Task Manager and project team will, where possible, provide logistical support (introductions, meetings etc.) allowing the consultants to conduct the Review as efficiently and independently as possible.

The Review Consultant will be hired over a period of 3 months and should have the following: a university degree in environmental sciences, international development or other relevant political or social sciences area is required and an advanced degree in the same areas is desirable; a minimum of 7 years of technical / evaluation experience is required, preferably including evaluating large, regional or global programmes and using a Theory of Change approach; and a good/broad understanding of ewaste, mercury and POPs is desired. English and French are the working languages of the United Nations Secretariat. For this consultancy, fluency in oral and written English is a requirement. Working knowledge of the UN system and specifically the work of UNEP is an added advantage. The work will be home-based with possible field visits.

The Review Consultant will be responsible, in close consultation with the Task Manager, for overall quality of the review and timely delivery of its outputs, described above in Section 11 Review Deliverables, above. The Review Consultant will ensure that all review criteria and questions are adequately covered.

Schedule of the Review

The table below presents the tentative schedule for the Review.

Table 3. Tentative schedule for the Review

Milestone	Tentative Dates
Inception Report	31 March 2024
Review Mission, E-based interviews, surveys etc.	May-June 2024
PowerPoint/presentation on preliminary findings and recommendations	15 June 2024
Draft Review Report to Task Manager (and Project Manager)	15 June 2024
Draft Review Report shared with wider group of stakeholders	July 2024
Final Review Report	August 2024
Final Review Report shared with all respondents	September 2024

Contractual Arrangements

The Review Consultant(s) will be selected and recruited by the Task Manager under an individual Special Service Agreement (SSA) on a "fees only" basis (see below). By signing the service contract with UNEP/UNON, the consultant certifies that they have not been associated with the design and implementation of the project in any way which may jeopardize their independence and impartiality towards project achievements and project partner performance. In addition, they will not have any future interests (within six months after completion of the contract) with the project's executing or implementing units. All consultants are required to sigh the Code of Conduct Agreement Form.

Fees will be paid on an instalment basis, paid on acceptance and approval by the Task Manager of expected key deliverables. The schedule of payment is as follows:

Schedule of Payment:

Deliverable	Percentage Payment
Approved Inception Report (*as per Annex I document #9)*	25%
Approved Draft Main Review Report *(as per Annex I document #10)*	40%
Approved Final Main Review Report	35%

Fees only contracts: Where applicable, air tickets will be purchased by UNEP and 75% of the Daily Subsistence Allowance for each authorised travel mission will be paid up front. Local in-country travel will only be reimbursed where agreed in advance with the Task Manager and on the production of acceptable receipts. Terminal expenses and residual DSA entitlements (25%) will be paid after mission completion.

The consultant may be provided with access to UNEP's information management systems (e.g. PIMS, Anubis, SharePoint, etc.) and, if such access is granted, the consultants agree not to disclose information from that system to third parties beyond information required for, and included in, the Review Report.

In case the consultant is not able to provide the deliverables in accordance with these guidelines, and in line with the expected quality standards by UNEP, payment may be withheld at the discretion of the Head of Branch or Portfolio Manager until the consultants have improved the deliverables to meet UNEP's quality standards.

If the consultant fails to submit a satisfactory final product to the Project Manager in a timely manner, i.e. before the end date of their contract, UNEP reserves the right to employ additional human resources to finalize the report, and to reduce the consultant's fees by an amount equal to the additional costs borne by the project team to bring the report up to standard or completion.

ANNEX XI. GEF PORTAL INPUTS

Table 19: GEF portal inputs

Question: What was the performance at the project's completion against Core Indicator Targets? (For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided).
Response: The project's performance against Core Indicator Targets demonstrates significant achievements, particularly in the implementation of e-waste legislation, the collection and processing of hazardous materials, and the creation of new jobs, with some areas exceeding initial expectations while others slightly underperformed. • **Solid and Liquid POPs Removed or Disposed (9.1):** The project aimed to remove 3 tons of PBDE but combined with CRT lead glass, processed 34.28 tons, though specific achievement for PBDE alone is not detailed. • **Quantity of Mercury Reduced (9.2):** Targeted 29 tons of CRT lead glass. The project reported processing a total of 34.28 tons for CRT lead glass and PBDE, with specific mercury reduction not detailed. • **Countries with Legislation and Policy Implementation (9.4**): Successfully implemented e-waste legislation in Nigeria, meeting the target. • **POPs/Mercury Containing Materials Avoided (9.6):** The target of 300 tons was met, with 305 tons of e-waste collected and processed. • **Number of Direct Beneficiaries (11):** Targeted 100 informal collectors with 30% female participation. Achieved 253 jobs with 19% female participation, exceeding total beneficiaries but slightly underperforming on the percentage of female participation.
Question: What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*
Response: The project demonstrated significant progress in stakeholder engagement by effectively involving key groups like government agencies (NESREA, LAWMA, LASEPA,…), private recycling centers (Hinckley and E-terra), producers / importers through EPRON and the informal sector collectors. However, challenges included difficulties in sustaining informal sector collectors engagement and delays in implementing the Producer Responsibility Organization (PRO) system. Although the International Labour Organization (ILO) was not engaged, other international stakeholders such as the WEEE Forum, SAICM, and the Global Alliance of Producers contributed positively to the project's goals. Ongoing stakeholder involvement is essential for the project's long-term success and sustainability.
Question: What were the completed gender-responsive measures and, if applicable, actual gender result areas? *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)*
Response: The project implemented several gender-responsive measures, including the development of a gender action plan and targeted support for women in the informal e-waste sector. This plan

addressed potential gender labor risks, provided Personal Protective Equipment (PPE) and training for women, and ensured that 19% of the new jobs created in the collection and recycling sectors were held by women. Additionally, the project supported female leadership in collection centers and cooperatives, contributing to gender equity and empowerment in the e-waste management process.

Question: What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*

Response:

The project was initially rated as a moderate risk at CEO approval, with many risks successfully mitigated according to the latest PIR report. This includes addressing hazardous waste management and formalizing the informal sector collectors. However, the PIR underrated risks related to producers contributing to the levy, as they do not pay while importing due to the non-operational black box. Additionally, the integration of informal actors was also underrated, as they reverted to dismantling practices after the project ended because the PRO database was not operational.

Question: What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval)*

Response:

The project successfully produced and disseminated knowledge products, such as case studies, reports, and webinars. The Communication Strategy improved over time, with significant contributions from international partners like the WEEE Forum and SAICM. Lessons learned were documented and shared, emphasizing the importance of stakeholder engagement and adaptive management.

Question: What are the main findings of the evaluation?

Response:

The findings from this evaluation reflect the project's successes and ongoing challenges in achieving sustainable e-waste management in Nigeria.

- **Legislative Success and Infrastructure Improvement:** The project successfully implemented EPR legislation, resulting in the collection of 305 tons of e-waste, surpassing the target of 300 tons. The private recycling centers like Hinckley and E-Terra increased their processing volumes by 30-85% due to infrastructure upgrades and legislation that encourages companies to recycle e-waste
- **Challenges with Informal Sector Engagement:** Despite training 350 informal collectors, many reverted to unsafe practices post-project due to insufficient financial incentives and the non-operational PRO system.
- **Financial Sustainability Issues:** The non-operational PRO system led to financial challenges, as only 16.2% of the targeted levy was collected (16,200 USD out of 100,000 USD), impacting long-term sustainability
- **Social Impact and Gender Inclusion:** The project created 253 new jobs, with 19% female participation, exceeding the minimum target of 15% female participation (48

	women out of 253 jobs). However, sustaining these social improvements requires ongoing support and incentives

ANNEX XII.IMPLEMENTATION PLAN OF RECOMMENDATIONS

Project Title and Reference No.:	**GEF ID 10141 - "Circular Economy approaches for the electronics sector in Nigeria"**
Contact Person (Task Manager):	**Eloise TOUNI**

	PLANS			
RECOMMENDATIONS	**ACCEPTED (YES/NO/PARTIALLY)**	**WHAT WILL BE DONE?**	**EXPECTED COMPLETION DATE**	**REPONSIBLE OFFICER/ UNIT/ DIVISION/ AGENCY**
Recommendation #1 Strengthen the enforcement of the legal framework to ensure compliance and participation from all sectors (informal and more actors from the private sector)	Yes	During development of the POPs plastics project on electronics sector in Nigeria, continue to promote and strengthen the legal framework including EPR	Dec 2025	NESREA & UNEP GEF C&W Unit
Recommendation #2 Conduct a comprehensive assessment of the informal sector during the project design phase to understand their challenges and economic realities.	Yes	Presentation to GEF TMs arranged, with discussion to develop an outline consultant TOR to develop an informal sector assessment during PPG baseline data collection. This will be linked to SRIF for future projects working on waste and other sectors with important informal sector. Share recommendation with Safeguards Unit.	Oct 2024	UNEP GEF C&W Task Managers
Recommendation #3 Insufficient time for sustainable behavior changes in the informal sector	Yes	Presentation to GEF TMs arranged, providing recommendation that for future projects involving the informal sector, a three or four year project duration will not be considered. (see also above action)	Oct 2024	UNEP GEF C&W all project developers.
Recommendation #4 Presence of informal brokers hindering formalization efforts	Yes	UNEP will advocate for future electronics value chain projects (GEM, led by UNIDO, and the UNEP internal electronics programme), to	By Jan 2025	UNEP GEF C&W Task Manager on electronics

Project Title and Reference No.:	GEF ID 10141 - "Circular Economy approaches for the electronics sector in Nigeria"
Contact Person (Task Manager):	Eloise TOUNI

	PLANS			
RECOMMENDATIONS	**ACCEPTED (YES/NO/PARTIALLY)**	**WHAT WILL BE DONE?**	**EXPECTED COMPLETION DATE**	**REPONSIBLE OFFICER/ UNIT/ DIVISION/ AGENCY**
		explicitly list informal brokers in stakeholder mapping.		
Recommendation #5 Ensure that the PRO database is fully operational to support the e-waste management system effectively.	Partially	EPRON is already in negotiations with a third party to manage the database. Once these are completed and in combination with continued availability of levy (see Recommendation 1), this will ensure the database is operational.	By June 2025	EPRON
Recommendation #6 Concerns over data confidentiality in EPR systems	Yes	Share terminal evaluation with ITU and future project partners (GEM/UNIDO; GEF plastics project in Nigeria) Finalise the negotiations with EPRON and the selected independent third-party who will manage the database to ensure data confidentiality and hand over the data management to the third-party.	Oct 2024	UNEP GEF C&W TM EPRON
Recommendation #7 To enhance global companies' direct participation in EPR schemes, enforce clear regulations, establish secure systems for commercial data, and introduce incentives recognizing environmental contributions.		NESREA to strengthen the enforcement of the regulations to minimize free riders. (also see actions identified under recommendation 1) Share the recommendation with the UNEP internal electronics programme to get their support on the engagement with global companies' for their participation in the EPR schemes, EPRON and the independent third-party to ensure data confidentiality. If the PRO		NESREA Feng/ Ran EPRON and the independent third-party

Project Title and Reference No.:	GEF ID 10141 - "Circular Economy approaches for the electronics sector in Nigeria"
Contact Person (Task Manager):	Eloise TOUNI

	PLANS			
RECOMMENDATIONS	**ACCEPTED (YES/NO/PARTIALLY)**	**WHAT WILL BE DONE?**	**EXPECTED COMPLETION DATE**	**REPONSIBLE OFFICER/ UNIT/ DIVISION/ AGENCY**
		and levy are successful and sustainable, further incentives will be generated.		
Recommendation #8 Inadequate technical involvement of end-users in tool development	Yes	Presentation to GEF TMs arranged, including the recommendation for future GEF projects to ensure that stakeholder mapping and engagement plans include end users of planned tools systematically in tool development.	Oct 2024	GEF C&W All TMs
Recommendation #9 Provide ongoing support to formal recyclers, particularly in connecting them with international recyclers and managing the Basel notification process.	No	Formal recyclers are already connected with both international recyclers and the national authorities for managing the Basel notification process.		NESREA
Recommendation #10 Sensitize project teams on the importance of aligning deliverables with the project results framework to ensure consistent monitoring and evaluation.	Partially	Update IA standard presentation for inception meetings to include this point as a best practice in annual work plans & monitoring plans. This is not a new practice but can always benefit from reinforcing.	Dec 2024	UNEP GEF Senior Task Manager
Recommendation #11 Implement a shared folder system for project deliverables	Partially	UNEP C&W already has a shared folder system in Sharepoint for project documents, as well as in the internal project management system (IPMR). IA will strengthen the		UNEP GEF

Project Title and Reference No.:	GEF ID 10141 - "Circular Economy approaches for the electronics sector in Nigeria"
Contact Person (Task Manager):	Eloise TOUNI

	PLANS			
RECOMMENDATIONS	**ACCEPTED (YES/NO/PARTIALLY)**	**WHAT WILL BE DONE?**	**EXPECTED COMPLETION DATE**	**REPONSIBLE OFFICER/ UNIT/ DIVISION/ AGENCY**
to facilitate better communication and sharing among stakeholders.		structure of the project technical deliverables to be readily shared with external stakeholders.		
Recommendation #12 Regularly update and upgrade collection centers to maintain high standards of environmentally sound management practices.	Partially	This is beyond the scope of the GEF project team and relies on the availability of resources for this work. If the PRO and levy are successful and sustainable, this will be more feasible by the collection centres.		EPRON

Lessons table from this project experience is included in within the report: **Table 12: Lessons learned**, page **68**

ANNEX XIII.QUALITY ASSESSMENT OF THE REVIEW REPORT

Review Title: "Circular Economy approaches for the electronics sector in Nigeria" (GEF ID 10141)

Consultant: Boussoura Talla and Florian Marchadour

	UNEP Evaluation Office Comments	Final Review Report Rating
Substantive Report Quality Criteria		
Quality of the Executive Summary Purpose: acts as a stand alone and accurate summary of the main review product, especially for senior management. To include: • concise overview of the review object • clear summary of the review objectives and scope • overall review rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria • reference to where the review ratings table can be found within the report • summary response to key strategic review questions • summary of the main findings of the exercise/synthesis of main conclusions summary of lessons learned and recommendations.	Final report: The evaluation summary is well-structured and easy to understand. The responses to key strategic review questions are not directly addressed, though they are implied in the findings and conclusions.	4
Quality of the 'Introduction' Section Purpose: introduces/situates the evaluand in its institutional context, establishes its main parameters (time, value, results, geography) and the purpose of the review itself. To include: • institutional context of the project (sub-programme, Division, Branch etc) • date of PRC approval, project duration and start/end dates • number of project phases (where appropriate) • results frameworks to which it contributes (e.g. POW Direct Outcome)	Final report: The evaluation report lacks critical information such as the project's institutional context, PRC approval dates, and total budget. The reader can find this information in the Project Identification Table.	4

• coverage of the review (regions/countries where implemented) • implementing and funding partners • total secured budget • whether the project has been evaluated in the past (e.g. mid-term, external agency etc.) concise statement of the purpose of the review and the key intended audience for the findings.		
Quality of the 'Review Methods' Section Purpose: provides reader with clear and comprehensive description of review methods, demonstrates the credibility of the findings and performance ratings. To include: • description of review data collection methods and information sources • justification for methods used (e.g. qualitative/ quantitative; electronic/face-to-face) • number and type of respondents *(see table template)* • selection criteria used to identify respondents, case studies or sites/countries visited • strategies used to increase stakeholder engagement and consultation • methods to include the voices/experiences of different and potentially excluded groups (e.g. vulnerable, gender, marginalised etc) • details of how data were verified (e.g. triangulation, review by stakeholders etc.) • methods used to analyse data (scoring, coding, thematic analysis etc) • review limitations (e.g. low/ imbalanced response rates across different groups; gaps in documentation; language barriers etc) ethics and human rights issues should be highlighted including: how anonymity and confidentiality were protected. Is there an ethics statement? E.g. *'Throughout the* review *process and in the compilation of the Final Review Report efforts have been made to represent the views of both mainstream and more marginalised groups. All efforts to provide respondents with anonymity have been made.*	Final report: This section provides an overview of data collection methods, data sources, and data analysis techniques – more detail could have been included. The report also fails to provide information on respondent selection criteria, data verification methods, and ethical considerations. Informal sector collectors are included, but methods for ensuring the inclusion of marginalized or vulnerable groups (e.g., women, informal workers) are not explicitly described. Additionally, the absence of a discussion on the limitations of the study hinders the generalizability of the findings.	3

Quality of the 'Project' Section Purpose: describes and verifies key dimensions of the evaluand relevant to assessing its performance. To include: • *Context:* overview of the main issue that the project is trying to address, its root causes and consequences on the environment and human well-being (i.e. synopsis of the problem and situational analyses) • *Results framework*: summary of the project's results hierarchy as stated in the ProDoc (or as officially revised) • *Stakeholders:* description of groups of targeted stakeholders organised according to relevant common characteristics • *Project implementation structure and partners:* description of the implementation structure with diagram and a list of key project partners • *Changes in design during implementation:* any key events that affected the project's scope or parameters should be described in brief in chronological order *Project financing:* completed tables of: (a) budget at design and expenditure by components (b) planned and actual sources of funding/co-financing	Final report: The section provides a clear and comprehensive overview of the project	6
Quality of the Theory of Change Purpose: to set out the TOC at Review in diagrammatic and narrative forms to support consistent project performance; to articulate the causal pathways with drivers and assumptions and justify any reconstruction necessary to assess the project's performance. To include: • description of how the *TOC at Review*[34] was designed (who was involved etc)	Final report *(coverage/omissions):* The TOC was not reconstructed for this Review. A table provides a clear comparison of the original and *potential/ future* reformulation of results statements. A visual representation of the TOC was only provided within the TOR, which are annexed. This should have been brought into the main body of the report, and discussed from a causal perspective.	3

[34] During the Inception Phase of the review process a *TOC at Review Inception* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions), formal revisions and annual reports etc. During the review process this TOC is revised based on changes made during project intervention and becomes the *TOC at Evaluation*.

• confirmation/reconstruction of results in accordance with UNEP definitions • articulation of causal pathways • identification of drivers and assumptions • identification of key actors in the change process summary of the reconstruction/results re-formulation in tabular form. *The two results hierarchies (original/formal revision and reconstructed) should be presented as a two-column table to show clearly that, although wording and placement may have changed, the results 'goal posts' have not been 'moved'*. This table may have initially been presented in the Inception Report and should appear somewhere in the Main Review report.		
Quality of Key Findings within the Report Presentation of evidence: nature of evidence should be clear (interview, document, survey, observation, online resources etc) and evidence should be explicitly triangulated unless noted as having a single source. Consistency within the report: all parts of the report should form consistent support for findings and performance ratings, which should be in line with UNEP's Criteria Ratings Matrix. Findings Statements (where applicable): The frame of reference for a finding should be an individual review criterion or a strategic question from the TOR. **A finding should go beyond description and uses analysis to provide insights that aid learning specific to the evaluand.** In some cases a findings statement may articulate a key element that has determined the performance rating of a criterion. Findings will frequently provide insight into 'how' and/or 'why' questions.	Final report: The report presents detailed information on the project's performance, supported by some photos.	3
Quality of 'Strategic Relevance' Section Purpose: to present evidence and analysis of project strategic relevance with respect to UNEP, partner and geographic policies and strategies at the time of project approval. To include: Assessment of the evaluand's relevance vis-à-vis:	Final report: This section demonstrates the project's strong alignment with UNEP's Medium-Term Strategy, GEF focal areas, and national priorities. It effectively highlights the project's contribution to broader policy objectives and its coherence with other existing interventions.	5

• Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities • Alignment to Donor/GEF/Partners Strategic Priorities • Relevance to Regional, Sub-regional and National Environmental Priorities Complementarity with Existing Interventions: complementarity of the project at design (or during inception/mobilisation[35]), with other interventions addressing the needs of the same target groups.		
Quality of the 'Quality of Project Design' Section Purpose: to present a summary of the strengths and weaknesses of the project design, on the basis that the detailed assessment was presented in the Inception Report.	Final report: The evaluation report provides a comprehensive and balanced assessment of the project's strengths and weaknesses, including evidence-based updates on mitigation efforts.	4
Quality of the 'Nature of the External Context' Section Purpose: to describe and recognise, when appropriate, key external features of the project's implementing context that limited the project's performance (e.g. conflict, natural disaster, political upheaval[36]), and how they affected performance. While additional details of the implementing context may be informative, this section should clearly record whether or not a major and unexpected disrupting event took place during the project's life in the implementing sites.	Final report: This section adequately outlines the external factors influencing the project's performance.	5
Quality of 'Effectiveness' Section **(i) Availability of Outputs:** Purpose: to present a well-reasoned, complete and evidence-based assessment of the outputs made available to the intended beneficiaries. To include: • a convincing, evidence-supported and clear presentation of the outputs	Final report: This section presents a mix of narrative and tabular formats to compare target outputs with actual achievements. While this approach provides a clear overview, a more detailed narrative discussion for each output would offer deeper insights into the achievements. Additionally, the narrative could provide a more focused analysis of specific outputs and their corresponding targets.	4

[35] A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.

[36] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team.

made available by the project compared to its approved plans and budget • assessment of the nature and scale of outputs versus the project indicators and targets • assessment of the timeliness, quality and utility of outputs to intended beneficiaries identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).		
ii) Achievement of Project Outcomes: Purpose: to present a well-reasoned, complete and evidence-based assessment of the uptake, adoption and/or implementation of outputs by the intended beneficiaries. This may include behaviour changes at an individual or collective level. To include: • a convincing and evidence-supported analysis of the uptake of outputs by intended beneficiaries • assessment of the nature, depth and scale of outcomes versus the project indicators and targets • discussion of the contribution, credible association and/or attribution of outcome level changes to the work of the project itself • any constraints to attributing effects to the projects' work identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).	Final report: Outputs and outcomes are discussed together in the report, which limits the insights gained in terms of uptake of the project's outputs.	2
(iii) Likelihood of Impact: Purpose: to present an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to likelihood of impact, including an assessment of the extent to which drivers and assumptions necessary for change to happen, were seen to be holding. To include: • an explanation of how causal pathways emerged and change processes can be shown	Final report: This section has adequately described the causal pathway logical and effective link to some of the desired results e.g. the policy enforcement which led to increased e-waste handling, surpassing of the target tons through the establishment of a functional collection system. It identifies the long-term constraints to the effects of the project.	5

• an explanation of the roles played by key actors and change agents • explicit discussion of how drivers and assumptions played out identification of any unintended negative effects of the project, especially on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).		
Quality of 'Financial Management' Section Purpose: to present an integrated analysis of all dimensions evaluated under financial management and include a completed 'financial management' table (may be annexed). Consider how well the report addresses the following: • *adherence* to UNEP's financial policies and procedures • *completeness* of financial information, including the actual project costs (total and per activity) and actual co-financing used *communication* between financial and project management staff	Final report: This section provides a good overview of all the sub-categories, including a discussion of secured co-finance.	5
Quality of 'Efficiency' Section Purpose: to present an integrated analysis of all dimensions evaluated under efficiency (i.e. the primary categories of cost-effectiveness and timeliness). To include: - time-saving measures put in place to maximise results within the secured budget and agreed project timeframe - discussion of making use, during project implementation, of/building on pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. - implications of any delays and no cost extensions the extent to which the management of the project minimised UNEP's environmental footprint.	Final report: The section offers a good analysis of the project's efficiency providing a clear description of the time-saving measures such as adaptive management that were implemented to optimize results and how the project leveraged pre-existing partnerships showcasing strong management practices and resource optimization.	6

Quality of 'Monitoring and Reporting' Section Purpose: to present well-reasoned, complete and evidence-based assessment of the evaluand's monitoring and reporting. Consider how well the report addresses the following: • quality of the monitoring design and budgeting *(including SMART results with measurable indicators, resources for MTE/R etc.)* • quality of monitoring of project implementation *(including use of monitoring data for adaptive management)* • quality of project reporting *(e.g. PIMS and donor reports)* \	Final report: The report does not discuss the quality of monitoring design/budgeting nor of project reporting. It focuses on monitoring of implementation and is supported by the monitoring data shown in Annex XVI.	4
Quality of 'Sustainability' Section Purpose: to present an integrated analysis of all dimensions evaluated under sustainability (i.e. the endurance of benefits achieved at outcome level). Consider how well the report addresses the following: • socio-political sustainability • financial sustainability institutional sustainability	Final report: This is a well-written section that discusses a range of relevant aspects of sustainability.	5
Quality of Factors Affecting Performance Section Purpose: These factors are not always discussed in stand-alone sections and may be integrated in the other performance criteria as appropriate. However, if not addressed substantively in this section, a cross reference must be given to where the topic is addressed and that entry must be sufficient to justify the performance rating for these factors. Consider how well the review report, either in this section or in cross-referenced sections, covers the following cross-cutting themes: • preparation and readiness • quality of project management and supervision[37]	Final report: The section provides a solid analysis of key factors such as stakeholder engagement, project management, and country ownership. Other factors are covered in passing within the report.	4

1. [37] In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP. This includes providing the answers to the

• stakeholder participation and co-operation • responsiveness to human rights and gender equality • environmental and social safeguards • country ownership and driven-ness communication and public awareness		
Quality of the Conclusions Section **(i) Conclusions Narrative:** Purpose: to present summative statements reflecting on prominent aspects of the performance of the evaluand as a whole, they should be derived from the synthesized analysis of evidence gathered during the review process. To include: • compelling narrative providing an integrated summary of the strengths and weakness in overall performance (achievements and limitations) of the project • clear and succinct response to the key strategic questions human rights and gender dimensions of the intervention should be discussed explicitly (e.g. how these dimensions were considered, addressed or impacted on)	Final report *(coverage/omissions):* The report offers well-summarized conclusion. However, the strategic questions set out in the TOR are not addressed.	4
ii) Utility of the Lessons: Purpose: to present both positive and negative lessons that have potential for wider application and use (replication and generalization) Consider how well the lessons achieve the following: • are rooted in real project experiences (i.e. derived from explicit review findings or from problems encountered and mistakes made that should be avoided in the future) • briefly describe the context from which they are derived and those contexts in which they may be useful do not duplicate recommendations	Final report *(coverage/omissions):* Some of the lessons learned are wide-ranging, mostly specific to the e-waste sector.	4

questions on Core Indicator Targets, stakeholder engagement, gender responsiveness, safeguards and knowledge management, required for the GEF portal.

(iii) Utility and Actionability of the Recommendations: Purpose: to present proposals for specific action to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results. Consider how well the lessons achieve the following: • are feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when • include at least one recommendation relating to strengthening the human rights and gender dimensions of UNEP interventions • represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations. NOTES: **(i)** In cases where the recommendation is addressed to a third party, compliance can only be monitored and assessed where a contractual/legal agreement remains in place. Without such an agreement, the recommendation should be formulated to say that UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner. The effective transmission by UNEP of the recommendation will then be monitored for compliance. **(ii)** Where a new project phase is already under discussion or in preparation with the same third party, a recommendation can be made to address the issue in the next phase.	Final report *(coverage/omissions):* Not all the recommendations appear to be actionable, either because the project is ending or because they are not offering a prescription to be acted upon.	3
Quality of Report Structure and Presentation **(i) Structure and completeness of the report:** To what extent does the report follow the Evaluation Office structure and formatting guidelines? Are all requested Annexes included and complete?	Final report*:* The report follows a logical flow and generally adheres to the EO's structure and formatting guidelines.	5
(ii) Writing and formatting: Consider whether the report is well written (clear English language and grammar) with language that is adequate in quality and tone for an official document?	Final report*:* The report is clearly written using language that is straightforward and easy to comprehend.	6

Do visual aids, such as maps and graphs convey key information?		
OVERALL REPORT QUALITY RATING		4.3

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the review report is calculated by taking the mean score of all rated quality criteria.

ANNEX XIV.ASSESSMENT OF PROJECT DESIGN QUALITY DESIGN

Below the overall project design quality score based on provided calculation tool

	SECTION	**SELECT RATING**	**SCORE** (1-6)	**WEIGHTING**	**TOTAL** (Rating x Weighting/10)
A	Operating Context	Unsatisfactory	2	**0,4**	**0,08**
B	Project Preparation	Satisfactory	5	**1,2**	**0,6**
C	Strategic Relevance	Highly Satisfactory	6	**0,8**	**0,48**
D	Intended Results and Causality	Satisfactory	5	**1,6**	**0,8**
E	Logical Framework and Monitoring	Moderately Satisfactory	4	**0,8**	**0,32**
F	Governance and Supervision Arrangements	Highly Satisfactory	6	**0,4**	**0,24**
G	Partnerships	Moderately Satisfactory	4	**0,8**	**0,32**
H	Learning, Communication and Outreach	Highly Satisfactory	6	**0,4**	**0,24**
I	Financial Planning / Budgeting	Moderately Satisfactory	4	**0,4**	**0,16**
J	Efficiency	Satisfactory	5	**0,8**	**0,4**
K	Risk identification and Social Safeguards	Satisfactory	5	**0,8**	**0,4**
L	Sustainability / Replication and Catalytic Effects	Satisfactory	5	**1,2**	**0,6**
M	Identified Project Design Weaknesses/Gaps	Not rated	0	**0,4**	**0**
				TOTAL SCORE (Sum Totals)	**4,64**

Project quality design score is **Satisfactory**

ANNEX XV.LIKELIHOOD OF IMPACT RATING

Table 20:Project likelihood of impact rating

	Drivers to support transition from Outputs to Project Outcomes are ...	Partially in place	
	Assumptions for the change process from Outputs to Project Outcomes ...	Hold	
	Proportion of Project Outcomes fully or partially achieved?	Some	
	Which Project Outcomes? (the most important to attain intermediate states / impact or others)	Others	
OVERALL RATING	Level of Project Outcome achievement?	Partial	
	Drivers to support transition from Project Outcome(s) to Intermediate States are ...	Partially in place	
MODERATELY LIKELY	Assumptions for the change process from Project Outcomes to Intermediate States ...	Hold	
	Proportion of Intermediate States achieved?	None	
	Level of Intermediate State achievement?		Skip this question
	Drivers to support transition from Intermediate States to Impact are ...	Partially in place	
	Assumptions for the change process from Intermediate States to Impact ...	Hold	

ANNEX XVI.COLLECTION AND RECYCLING DETAILS MONITORING

Table 21: Collection and recycling details monitoring

SECTION D: ACTUAL COLLECTION DETAILS AND WEIGHT

CATEGORY	PRODUCT TYPES	WEIGHT (TONNES)
Category 1: Cooling and freezing equipment	Refrigerators	34.39
	Freezers	26.26
	Air conditioners	16.81
	Central Cooling	0.00
		0.00
Category 2: Screens and monitors.	Televisions	16.92
	Monitors	25.11
	Laptops	4.27
	Notebooks	0.63
	Tablets	0.83
Category 3: Lamps	Fluorescent Lamps	2.29
	High Intensity Discharge Lamps	0.12
	LED Lamps	0.48
Category 4: Large equipment	Large Printing Machines	13.04
	Copying Equipment	0.93
	Desktops	33.31
	Washing Machine	23.40
	Telecommunication Equipment	8.92
	Central Heating	0.00
	PV Panels	0.00
	Servers	24.82
	Medical Equipment	7.05

	Tools	0.22
	Stabilizer	0.46
	UPS	1.01
	Routers	12.95
	equipment parts	16.92
	Professional luminaries	0.00
Category 5: Small equipment	Microwave Ovens	0.66
	Electrical and Electronic toys	0.23
	Small electrical and Electronic tools	3.95
	Irons	0.24
	Fan	0.97
	Kitchen Appliances	6.97
	Electric Tooth Brushes	0.00
	Hair Removal devices	0.00
Category 6: Small IT and Telecommunication Equipment	Mobile Phones	3.39
	Keyboard	0.29
	Pocket Calculators	0.36
	Personal Computers	3.55
	Printers	7.97
	Scanner	0.08
	Telephones	1.69
	TOTAL	**301.50 TONS**

FRACTIONS			TARGET WEIGHT (TONNES)	ACTUAL WEIGHT EXTRACTED (TONNES)
10.8 kg of precious metals (Ag, Au, Pd)	Ag	1.285175kg	0.0108	0.0117
	Au	5.563173 kg		
	Pd	1.25991 kg		
	total	11.70826 kg		
150 tonnes of common metals (Fe, Al, Cu)			150	144.54
90 tonnes of plastics re-entering the value chain			90	67.88
30 tonnes of CRT lead glass/Barium Glass (CRT)			30	13.96
3 tonnes of other hazardous fractions (CFC contained foams, mercury, batteries, flame retardants and POPs containing plastics)			3	20.32
3 tonnes of plastics contaminated with HexaHeptabromodiphenyl ether			3	8.59
TOTAL			**276.0108**	**255.3017 tons**