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**TOWARDS SUSTAINABLE ENERGY FOR ALL IN MOZAMBIQUE:
PROVIDING MARKET-BASED DISSEMINATION OF INTEGRATED
RENEWABLE ENERGY SYSTEMS FOR PRODUCTIVE ACTIVITIES IN
RURAL AREAS**

Office of Evaluation and Internal Oversight

**OFFICE OF EVALUATION AND INTERNAL OVERSIGHT
INDEPENDENT EVALUATION UNIT**

**Independent Evaluation of
TOWARDS SUSTAINABLE ENERGY FOR ALL IN MOZAMBIQUE: PROVIDING
MARKET-BASED DISSEMINATION OF INTEGRATED RENEWABLE ENERGY
SYSTEMS FOR PRODUCTIVE ACTIVITIES IN RURAL AREAS**

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Abstract

The TSE4ALLM project in Mozambique aims to enhance the use of renewable energy in small to medium-sized farms and rural agro-food processing industries, focusing on Solar Photovoltaic (PV) pumps and waste-to-energy systems. It seeks to mitigate climate change and provide socio-economic benefits to the rural population of Mozambique.

This project evaluation aimed at independently assessing the project, used mixed methods and covered the period August 2017 to April 2024.

The evaluation found that the project aligns with Mozambique's energy policies and the UN's Sustainable Development Goals, especially in expanding rural energy access, and with UNIDO's strategy for decentralized renewable energy. It is also consistent with the Global Environment Facility's objectives. The project faced significant challenges, such as delays caused by cyclones and the COVID-19 pandemic and insufficient stakeholder engagement, which hindered its success in creating a conducive policy environment and building capacity. However, technology demonstrations of Renewable Energy in agriculture were promising and showed strong potential for sustainability. The project improved the government's capacity to support renewable energy systems and facilitated successful financing for SMEs, enhancing financial accessibility.

Frequent changes in project leadership and a lack of strategic coherence, particularly in capacity-building efforts, affected implementation efficiency. The project had minimal compliance with gender inclusion guidelines but showed positive environmental impacts.

The **evaluation recommendations** include (1) improving communication between project teams, (2) developing plans to scale successful outcomes, (3) enhancing local stakeholder capacity, and (4) providing training on renewable energy equipment and its maintenance. A study on reducing import tariffs for renewable energy technologies is also suggested.

Keywords: Renewable Energy (RE), Sustainable Development Goals (SDGs), Conducive policy and regulatory frameworks, Agriculture and rural development.

Contents

ABBREVIATIONS AND ACRONYMS	6
EXECUTIVE SUMMARY	10
1. INTRODUCTION	15
1.1. EVALUATION PURPOSE AND OBJECTIVE.....	15
1.2. EVALUATION SCOPE.....	15
1.3. THEORY OF CHANGE	15
1.4. METHODOLOGY	16
1.5. LIMITATIONS.....	17
2. PROJECT BACKGROUND AND CONTEXT	18
2.1. PROJECT CONTEXT AT THE TIME OF DESIGN AND IMPLEMENTATION	18
2.2. TSE4ALLM PROJECT OVERVIEW.....	21
3. FINDINGS	24
3.1. RELEVANCE.....	24
3.2. COHERENCE.....	26
3.3. EFFECTIVENESS.....	28
3.4. EFFICIENCY	32
3.5. SUSTAINABILITY OF BENEFITS	37
3.6. PROGRESS TO IMPACT	37
3.7. GENDER MAINSTREAMING	38
3.8. ENVIRONMENTAL IMPACTS.....	39
3.9. HUMAN RIGHTS.....	39
3.10. PERFORMANCE OF PARTNERS	39
3.11. RESULTS-BASED MANAGEMENT.....	41
3.12. MONITORING & REPORTING	41
4. CONCLUSIONS AND RECOMMENDATIONS	43
4.1. CONCLUSIONS	43
4.2. RECOMMENDATIONS AND MANAGEMENT RESPONSE	44
5. LESSONS LEARNED	47
5.1. LESSONS LEARNED IN THE DEMONSTRATION PROJECTS	47
5.2. LESSONS LEARNED FROM STAKEHOLDERS.....	47
5.3. THE PROJECT ADMINISTRATIVE IMPLEMENTATION	48
6. ANNEXES	49
6.1. ANNEX 1: EVALUATION TERMS OF REFERENCE	49
6.2. ANNEX 2: EVALUATION FRAMEWORK / MATRIX.....	89
6.3. ANNEX 3: LIST OF DOCUMENTATION REVIEWED	95
6.4. ANNEX 4: LIST OF STAKEHOLDERS CONSULTED	107
6.5. ANNEX 5 PROJECT THEORY OF CHANGE / LOGFRAME	110
6.6. ANNEX 6: PRIMARY DATA COLLECTION INSTRUMENTS	111

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Abbreviations and Acronyms

Abbreviation	Meaning
ADPP	Development Aid from People to People
AfDB	African Development Bank
AFORAMO	Association of Private water Provider
AIDS	Acquired Immunodeficiency Syndrome
AMER	Associação Moçambicana de Energias Renováveis
ARE	Alliance for Rural Electrification
ARENE	Autoridade Reguladora de Energia
ALER	Associação Lusófona de Energias Renováveis
BCI	Banco Comercial e de Investimentos
BCI- SUPER	BCI Super Credit Line
BMZ	German Federal Ministry for Economic Cooperation and Development
DGIS	The Netherlands Ministry of Foreign Affairs
DRE	Decentralized Renewable Energies
C1	Component 1
C2	Component 2
C3	Component 3
CAMCO	Gestionnaire de fonds à impact spécialisé dans le climat
CCM-1	Climate Change-1
CHARIS	CHARIS MINISTRIES four stories of transformation
CO2	Carbon Dioxide
COMFAR	Computer Model for Feasibility Analysis and Reporting
COP28	Climate Change Conference in Dubai
CSOs	Civil Society Organisations
CTA	Confederation of Business Associations
DRE	Decentralised Renewable Energies
EDM	Electricidade de Mozambique
EnDev	Energising Development

EL4D	Economic Linkages for Diversification
EIO	Office of Evaluation and Internal Oversight (UNIDO)
ESI	Energy Systems and Infrastructure
ETS	Energy Transition Strategy
UEM	Eduardo Mondlane University
FCDO	Commonwealth & Development Office
FUNAE	Energy Fund
FNDS	National Sustainable Development Fund
GESI	Gender Equality and Social Inclusion
GBE	Green People's Energy
GBS	General Budget Support
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GoM	Government of Mozambique
GPS Global	Global Procurement Solutions, Lda
HIV	Human Immunodeficiency virus
IEU	Independent Evaluation Unit
INNOQ	National Institute of Quality and Standards
ITPO	Investments and Technology Promotion Office
IMF	International Monetary Fund
KfW	Kreditanstalt für Wiederaufbau
KPIs	Key Performance Indicators
KW	Kilowatts
LNG	Liquefied Natural Gas
MADER	Ministry of Agriculture and Rural Development
MAKOMANE-ADM	Associação para o Desenvolvimento de Macomane
MASA	Ministry of Agriculture and Food Security
MEC	Ministry of Education and Human Development

MDM	Mozambique Democratic Movement
MIREME	Ministry of Mineral Resources and Energy
MITA	Ministry of Land and Environment
MITADER	Ministry of Land, Environment and Rural Development
MEF	Ministry of Economy and Finance
MTA	Ministry of Land and Environment
MW	Megawatts
NORAD	Norwegian Agency for Development Cooperation
PAPs	Programme Aid Partners
PPPs	Public-Private Partnerships
ProEnergia	Programme's Energy for All
PROSUL	Projetos, supervisão e planejamento de obras de grande porte
PIR FY19	Project Implementation Reports 2019
PIR FY20	Project Implementation Reports 2020
PIR FY21	Project Implementation Reports 2021
PIR FY22	Project Implementation Reports 2022
PIR FY23	Project Implementation Reports 2023
PV	Photovoltaic
RE	Renewable Energy
RISA	Investissement Résilient en Afrique Australe
RFPs	Request for Proposal
SADC	Southern African Development Community
SACREEE	SADC Centre for Renewable Energy and Energy Efficiency
SDC	The Netherlands Ministry of Foreign Affairs
SDG	Sustainable Development Knowledge Platform
SETSAN	Secretariat for Food Security and Nutrition's
Sida	Swedish International Development Cooperation Agency
SHS	Solar Home Systems
SME	Small and medium-sized enterprises

SMEs	Small and Midsize Enterprises
SNV	Synovus Financial Corp
SPC	Steering Project Committee
TEC	Technical commission
ToC	Theory of Change
TSE4ALLM	Towards Sustainable Energy for All
UEM	Eduardo Mondlane University
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International n Development
USD	Unites State Dollar
VET	Vocational Education and Training
WASHFIN	Water, Sanitation and Hygiene Finance

Executive Summary

The TSE4ALLM project in Mozambique aims to promote the use of renewable energy systems in small to medium-sized farms and rural agro-food processing industries. Specifically, the project focuses on encouraging the adoption of integrated renewable energy systems such as Solar Photovoltaic pumps for irrigation and waste-to-energy. These efforts aim to mitigate climate change while delivering environmental and socio-economic benefits to the rural population in Mozambique. However, at the time of the project's design and implementation, Mozambique's legal and policy framework didn't provide sufficient incentives for private sector investment. As a result, the TSE4ALLM project was launched to provide essential support to kick start and maintain a conducive policy environment to attract investments and implement suitable renewable energy systems.

The project evaluation covers the first four years of implementation (08/2017-10/2021) and three extensions granted until April 2024 that is to say the total implemented period from 08/2017 to 04/2024. The extensions were due to the unexpected impact of two cyclones and the COVID-19 pandemic. These extensions were meant to drive learning and innovation, promote accountability, and results-based management for the Mozambique Government, Renewable Energy Stakeholders, and UNIDO.

The evaluation was based on a mixed methods approach, with data collected through both primary and secondary sources. The analysis involved a descriptive analysis (what happened), followed by a diagnostic analysis (why it happened) and concluded with a predictive analysis to identify future potential challenges and trends. However, the evaluation was limited by a lack of key documentation, which was not provided despite several requests.

Key Findings

Relevance: The project is important for Mozambique and aligns with the country's policies, including the Energy Transition Strategy. Expanding energy production is crucial to providing quality energy access, particularly in rural areas. Furthermore, the project promotes the Sustainable Development Goals 7, 9, 12, and 13¹. It is also consistent with the Global Environment Facility's objectives, policies on gender and public involvement, and private sector needs. The clean water produced by the project will benefit the population by providing drinking water and supporting agriculture.

Coherence: The design of the TSE4ALLM project is in line with UNIDO's strategic implementation of decentralized renewable energy for the benefit of rural communities and the private sector, as well as Mozambique's energy generation policies. Additionally, the project complements various international donors' projects, such as Green Peoples Energy, Energising Development, the BRILHO program, PROSUL, Alliance for Rural Electrification, and Power Africa.

The project's design is coherent with UNIDO's strategic implementation of decentralized renewable energies for the benefit of rural communities and the private sector, as well as Mozambique's policies in energy generation.

Effectiveness: The TSE4ALLM project faced significant challenges in its execution, primarily due to systematic payment delays and inadequate mitigation actions, which hampered its overall effectiveness. This lack of proactivity led to a loss of momentum and diminished the project's visibility and impact. Specifically, in the implementation of Component 1 (C1), which aimed at establishing a conducive policy and regulatory environment, UNIDO struggled to effectively engage key stakeholders, resulting in only partial achievement of the component's objectives. Furthermore, Component 2 (C2), focused on capacity building and knowledge management to enhance the skills and knowledge of market players and enablers in the renewable energy (RE)

¹ <https://sdgs.un.org/goals>

sector, suffered from a lack of a coherent strategy and alignment with other project components. Efforts such as the Energy Cluster and the adaptation of training materials from a UNIDO project in Cape Verde were initiated but not completed, undermining the potential impact of C2. On a more positive note, Component 3 (C3), which aimed to demonstrate the application of RE technologies in agricultural activities in rural Mozambique, showed promising results and the potential for sustainability. This was achieved through demonstration projects implemented by five organizations (ADPP, AFORAMA, CHARIS, MADER, and MAKOMANE-ADM) and the financing of ten SMEs for RE systems through the BCI Super Credit Line. Despite these successes, the implementation of C3 faced challenges, including delays in the selection of project implementers, disbursements, and payments. Although the technology demonstrations were intended to serve as exemplars for scaling up projects financed by the BCI Super Credit, in practice, these initiatives were executed in parallel, diluting the potential for a cohesive strategy.

Efficiency: the TSE4ALLM implementation demonstrates inertia in adopting alternative routes and achieving project objectives, evident at the individual, team, project, and organizational levels, despite ongoing commitment to questionable strategies. For instance, the project saw the rotation of four different project officers, leading to a lack of coherence and continuity in the activities carried out, in particular the case of the C2 implementation. Moreover, TSE4ALLM failed to offer support or establish conducive policies and best practices for similar initiatives, with the exceptions of a set of standards on PV solar and Biogas digesters. Finally, the project shows mitigated efficient implementation, with some good efficiency instances such as the demonstration projects and other low efficient instances such as the capacity building.

Sustainability: The TSE4ALLM project through its four components has different levels of sustainability. Thus, the evaluation team found that C3 has excellent potential for maintaining sustainable results, particularly in demonstration and BCI Super Credit Line projects, as long as equipment upkeep and proper usage are ensured. UNIDO Mozambique put significant effort into ensuring a sustained impact, even though it was not always achieved.

Progress to impact: Regarding TSE4ALLM's impact on the Government's capacity to support RE Systems, FUNAE and BCI noted decisive training improvements in identifying and appraising bankable projects. Successful implementation of the BCI Super Credit Line for SMEs RE systems acquisition. Furthermore, this project established a trend where UNIDO's Guaranty Bank offered low interest rates, enhancing financial accessibility to SMEs. TSE4ALLM demonstration projects show an outstanding impact on the promotion of solar PV and Biogas systems, together with a real impact on improvement of income by the beneficiaries of the RE systems. The progress to impact is only present on the Component 3.

Gender Mainstreaming: The TSE4ALLM project has only partially complied the UNIDO Gender Compliance and Marker Form (only criteria 4²) and exhibits minimal compliance with the Gender Equality and Social Inclusion (GESI) Framework. The project lacks clear monitoring and communication of gender inclusion, and the number of female participants was only requested in three Outputs, while reported only in one implemented demonstration project by ADPP. Although a set of guidelines to incorporate gender in Renewable Energy was commissioned and an initial consultation was carried out, the evaluation team was not provided with any document on this set of guidelines, except for the consultation report.

Environmental Impacts: The evaluation team identified positive changes in the environmental status from the demonstration projects and BCI-Credit line funded projects, as well as positive income generation on sustainable energy management for communities and businesses.

² The results framework (i.e. logframe, theory of change, Bennett Hierarchy) includes gender-specific indicators, baselines, and targets to track outcomes/impact.

Human Rights: The human rights approach (HRBA) of the TSE4ALLM project is centered on rights and corresponding obligations established by the international law, in particular the African Charter on Human and Peoples' Rights, leveraging established human rights to attain environmental goals such as women's³ and children's⁴ rights, the right to development, the right to access water and sanitation, the right to adequate food, the right to a healthy environment. The TSE4ALL project integrates three of the five key human rights principles—participation, non-discrimination and equality, and empowerment—into its component implementation, particularly in C3.

Performance of Partners: Overall, the partners such as BCI, ADPP, ADORAMO, MADER, MAKORAMA, CHARIS and UEM showed an excellent performance. In particular ADPP and UEM. UEM played a key role as an academic partner and providing technical support. On the contrary, FUNAE rather seemed to have passive role as chair of the guaranty funds and misinterpreting its use.

Results Based Management: The project shows a limited use of a results-based approach in work planning, decision-making, and project management. Additionally, there's no evident strategic plan for achieving TSE4ALLM's objectives; instead, the implementation is influenced by the prevailing political and economic context.

Monitoring & Reporting: There was not a continuous monitoring process of the project, but rather a weak one driven to complete the reports. Moreover, there was a very limited use of the information provided in the reports to effectively geared monitoring information to improve the performance of the project implementation.

Key Conclusions

In terms of project design, TSE4ALLM was highly relevant in the design of its components, outcomes and outputs. The interrelation among the components intended to build support on each other to operate effectively and achieve the project's goal. The project implementation varies with each component, due to the lack of an appropriated guiding strategy. UNIDO's position as a key stakeholder in the Biogas energy sector, did not secure the organization a place as an advisor to the GoM in its update process for the new electricity law of Mozambique, unlike others. The contracts were constantly delayed because of UNIDO's internal restructuring, sometimes generating the closure of activities other times losing opportunities. Finally, regarding the project results, TS4ALLM gave support to key energy stakeholders for identifying bankable RE projects and the relevance of renewable and sustainable energy. The projects flagships are the BCI super credit line and the demonstration Projects.

Key Recommendations

The following recommendations address the primary challenges encountered during the implementation of the TSE4ALLM project.

Recommendation 1: Strengthen the communication between project management at HQ, project team in the field, and UNIDO field office.

Recommendation 2: It is recommended to develop a clear plan to leverage and expand upon the successful outcomes of the project by, e.g.:

³ Convention on the elimination of All Forms of Discrimination against Women (CEDAW).

⁴ Convention on the Rights of the Child (CRC).

- Actively pursuing opportunities for replication and scaling-up through formalizing initiatives to engage the private sector.
- Promoting Calls for Proposals on the implementation of sustainable and renewable energy in agrifood and agri-value chain projects, in drinkable water suppliers in peri urban and rural areas; on developing a training programme for first despondence energy technicians on PV Solar panels and Biomass maintenance and repairs.
- Increasing the awareness among Mozambique's enterprises about the benefits of training, forming new partnerships, and optimizing their utilization of renewable energy (RE) systems in small businesses.

Recommendation 3: Further enhance the capacity of the FUNAE team and make use of partnerships with experienced key experts/organizations to support FUNAE technically.

Recommendation 4: Renewable Energy is a priority for the GoM. Therefore, it is recommended that a study is done on the benefits of having a reduction of import duties/tariff for SMEs, Cooperatives, and Associations.

Recommendation 5: It is recommended to design and conduct training(s) of beneficiaries in the proper use of RE equipment and its maintenance

Recommendation 6: Develop a technical energy educational programme to build the technical capacity at VET level.

Recommendation 7: It is highly recommended that local implementers (demonstration projects) carefully listen to the beneficiaries' requests and understand their needs and constraints, to be able to assess their real energetic needs and provide an adequate technical solution with RE systems, taking also into consideration available processing machinery and lightning.

Table 1: Rating against UNIDO project evaluation criteria

	Evaluation criteria	Rating
A	Progress to Impact	Satisfactory
B	Project design	Satisfactory
B.1	Overall design	Highly satisfactory
B.2	Project results framework /logframe	Satisfactory
C	Project performance and progress towards results	Moderately satisfactory
C.1	Relevance	Satisfactory
C.2	Coherence	Satisfactory
C.3	Effectiveness	Moderately satisfactory
C.4	Efficiency	Moderately unsatisfactory
C.5	Sustainability of benefits	Moderately satisfactory

D	Gender mainstreaming	Moderately unsatisfactory
E	Project implementation management	Moderately satisfactory
E.1	Results-based management (RBM)	Moderately satisfactory
E.2	Monitoring and Evaluation, Reporting	Moderately unsatisfactory
F	Performance of partner	Satisfactory
F.1	UNIDO	Moderately satisfactory
F.2	National counterparts	Moderately satisfactory
F.3	Implementing partners	Satisfactory
F.4	Donor (GEF)	Satisfactory
G	Environmental and Social Safeguards (ESS), Disability and Human Rights	Satisfactory
G.1	Environmental Safeguards	Highly satisfactory
G.2	Social Safeguard, Disability and Human Rights	Satisfactory
H	Overall Assessment	Satisfactory

1. Introduction

1.1. Evaluation Purpose and Objective

The purpose of the TSE4ALLM independent terminal evaluation is set according to the 2021 UNIDO Evaluation Policy to i) promote accountability, ii) support results-based management and iii) drive learning and innovation. It is led under the responsibility of the independent Evaluation Unit (EIO/IEU).

This evaluation as all UNIDO evaluations, is intended to contribute not only to organizational learning, but to sharing the lessons learned with national and other relevant stakeholders.

The intended users of this evaluation are the government of Mozambique through its relevant ministries and agencies, as well as Renewable Energy players (public and private), including financial organizations and SMEs in rural areas, and UNIDO as implementing agency.

Following the UNIDO Evaluation Policy, this evaluation will use the evaluation criteria and related evaluation questions as presented in the UNIDO Evaluation manual.

1.2. Evaluation Scope

The scope of the TSE4ALLM project evaluation covers the initial 4 years of implementation, from 1st August 2017 to 31st July 2020, as well as the three extensions with the first being caused by the unexpected impacts of Cyclone Idai (March 14th, 2019), Cyclone Kenneth (April 25th, 2019), and the COVID-19 pandemic, the second still being due to the unexpected, prolonged effects of the pandemic on the national operations of the project, and the last one to enable of completion of ongoing activities and monitoring of pilot projects and BCI-SUPER credit line funding initiatives, transfer of the institutional knowledge on the BCI-SUPER credit line to the national counterpart FUNAE, finalization of communication material and a final project closure workshop.

The TSE4ALLM project has three non-costs extensions:

- i. the 1st extension signed on 15 February 2021 extending the project from October 2021 to October 2022.
- ii. The 2nd extension signed on 10th June 2022 extending implementation from October 2022 to October 2023.
- iii. The 3rd extension signed on 30th October 2023 extending implementation from October 2023 to April 2024.

1.3. Theory of Change

During the reconstruction of the TSE4ALLM Theory of Change (ToC), it was identified as long-term goal: the integration and adoption of clean technologies (RE Systems solar PV and biomass), the development of favorable policies and regulatory environment to implement RE Systems, and capacity building supporting the creation of a RE market in rural areas, together with pilot demonstrations and expansion of RE use.

These complex objectives are supported by 4 Outcomes reflecting the specific objectives of the TSE4ALLM project:

Component 1: Establishment of a conducive policy and regulatory environment,

Component 2: Capacity building and knowledge management aiming to improving and developing the capabilities and knowledge of market players and enablers in the RE sector.

Component 3: Technology demonstration and scaling up aiming to demonstrate the application of RE technologies in agricultural activities located in rural areas of Mozambique.

Component 4: Monitoring and Evaluation.

The TSE4ALLM project provides 3 outputs for each outcome 1, 2 & 3, while outcome 4 has only 2 outputs. Each output is supported by 35 different and interrelated activities.

Nevertheless, the logic and interrelation of several activities lacked a chronological sequence and due to implementation delays on activities that were designed to be sequential, they ended up being implemented in parallel instead, and, as such, missing the impact of awareness raising intended by the first phase: The demonstration projects in integrated renewable energy systems (250KW) (pilots) were foreseen in a first phase, with the second phase then followed by the SUPER-Credit line (BCI) supporting the installations of solar-powered water pumping systems for irrigation and waste-to-energy projects for agrifood processing (1.2MW). The first phase should have created the visibility and interest of private sector actors to apply for the SUPER-credit line and adapt these new RE technologies. However, due to parallel implementation, the intended momentum and visibility were lost, not creating also desired impacts.

1.4. Methodology

The evaluation was based on a mixed methods approach, collecting information contained in the available documentation (progress reports, annual reports and other relevant documents provided by the project manager), as well as the views and experiences of key stakeholders and key beneficiaries. In addition, the evaluation reviewed the financial data both to address the cost-benefit (input-to-output) ratios, but also the allocative efficiency and how the GEF funding agreement fits in the larger financing picture.

The data collection was based on:

- i. Desk and literature review (secondary data collection) of documents related to the project received such as original project document, monitoring reports (such as progress and financial reports, mid-term review report, output reports, end-of-contract report(s), and field progress reports, from UNIDO, government agencies and ministries, other organizations involved in the implementation of the TSE4ALLM project (please see Annex 3 with the list of received documents) and internet.
- ii. Stakeholder consultations (primary data collection) carried out during the field mission and video conferences through structured and semi-structured interviews across all relevant stakeholders, (see complete list of interviewed stakeholders in Annex 4).

Given the number of implementations (pilot/demonstration projects) carried out in different rural areas, and in order to gather as much feedback as possible from different direct beneficiaries besides the one-to-one interviews (face-to-face/virtual), 2 focus groups (AFORAMO & CHARIS) with a maximum of 6 people were organized allowing to provide feedback, satisfaction and information on how stakeholders are applying/using the capacity building provided by the TSE4ALLM project and acquired equipment/ technologies.

The data analysis:

This evaluation used a descriptive analysis (What happened) to interpret the raw data from various sources and transform the information into valuable insight into project performance and impact. This analysis allowed to understand what happened and facilitate further analysis. A diagnostic analysis (why it happened) was the next step which helped to gain a firm contextual understanding of why some things happened and helped to pinpoint the ways issues were tackled, and challenges faced. This was followed by a predicted analysis to uncover future potential challenges and trends, allowing to unfold and develop initiatives that will enhance the operational processes and gain momentum in the promotion of gender-sensitive climate and renewable energy policies and a more effective political dialogue, through renewable energy and green grids, rural access to renewable energy through PV solar and waste energy generators.

The data analysis consisted of cross analyzing information reported in the documents and reviewed with information provided by the interviewed stakeholders and beneficiaries, as well as field verifications. This way information provided by the interviewees was corroborated by the reports and documentation. The findings were interpreted, and the evaluation provides a course of action in the recommendations.

1.5. Limitations

This independent terminal evaluation has faced several limitations regarding the access to specific documentation such as the annual report 2017-2018 & 2018-2019, the PIR for the period 1st August 2017 to 31 July 2018, and the different progress reports of the pilot projects implemented by AFORAMO, CHARIS, and MAKOMANE-ADM. Also there has been limited information on the work carried out on the component 2, in the last year of implementation.

During the implementation of the evaluation, particularly during the field mission, the evaluation team asked for the missing documentation and the latest reports. Nevertheless, these pieces of information were not facilitated.

2. Project Background and Context

2.1. Project Context at the time of design and implementation

Project Title	Towards Sustainable Energy for All in Mozambique: Towards Sustainable Energy for all in Mozambique: Promoting market-based dissemination of integrated renewable energy systems for productive activities in rural areas
Implementing Agency	UNIDO
SAP Project ID:	150263
Approval date:	31/07/2017
GEF Project ID:	9225
GEF Period:	GEF 6
Initial Project Duration:	48 months (August 2017 to October
Final Project Duration:	81 months (August 2017 to April 2024)
GEF Project Financing:	USD 2,851,384
Co-Financing:	USD 11,284,997
Agency fee	USD 270,881
Initial total project cost:	USD 14,136,381
Final total project cost:	USD 2,782,521 ⁵
Project Objectives:	Promote the market-based adoption of integrated renewable energy systems (solar PV for irrigation and waste-to-energy) in small to medium-scale farms and rural agro-food processing industries in Mozambique. The GEF financing will provide the necessary catalytic support to create and sustain an environment that is conducive to promoting investments and adopting appropriate RE systems contributing to climate change mitigation and associated environmental and socio-economic benefits to Mozambique.
Project Components:	<ul style="list-style-type: none"> ○ Establishment of a conducive policy and regulatory environment ○ Capacity Building and Knowledge Management ○ Technology Demonstration and Scaling Up ○ Monitoring and Evaluation

⁵ Total expenditure, as of August 2024 (<https://open.unido.org/projects/MZ/projects/150263>)

Key initial Stakeholders	MITADER (Ministry of Land, Environment and Rural Development), MIREME (Ministry of Energy and Mines Resources), MASA (Ministry of Agriculture and Food Security), MEC (Ministry of Education and Human Development), FNDS (National Sustainable Development Funds), FUNAE (Energy Fund), SADCREEE (SADC Centre for Renewable Energy and Energy Efficiency).
Key final Stakeholders	FUNAE (Energy Fund), MIREME (Ministry of Mineral Resources and Energy), ADPP UEM (Eduardo Mondlane University), MADER (Ministry of Agriculture and Rural Development), BCI (Commercial and Investment Bank), MITA (Ministry of Land and Environment), CTA (Confederation for Private Sector Associations).

Note: Due political restructuring the initial governmental stakeholders' names have been updated as well as their variation of sector and role in the implementation of the project.

Mozambique's social, economic, environmental, and political context from 2014 to 2018:

Political:

Mozambique is a multiparty democracy, with a presidential system of government. The president is the head of state and government, and is elected for a five-year term, renewable once. The parliament is the unicameral Assembly of the Republic, with 250 members elected for a five-year term. The judiciary is considered independent, but faces challenges of corruption, inefficiency, and lack of resources. The main political parties are the ruling Front for the Liberation of Mozambique (Frelimo), which has been in power since the country's independence from Portugal in 1975, and the opposition party of the Mozambican National Resistance (Renamo), which fought a civil war against Frelimo from 1977 to 1992. The two parties have signed several peace agreements, but have also experienced periods of tension and violence, especially in the central and northern regions of the country. In 2014, Frelimo won the presidential and legislative elections, with 57% and 55% of the votes, respectively, while Renamo obtained 37% and 32%, respectively. The elections were marred by allegations of fraud and irregularities, and Renamo contested the results and resumed its armed attacks against government forces. In 2009, a new political party emerged, the Mozambique Democratic Movement (MDM), which won 10% of the parliamentary seats and several municipalities in the 2014 elections and continues to govern some municipalities in Central and Northern Mozambique.

In 2018, Frelimo and Renamo reached a new peace agreement, which included constitutional amendments on decentralization, allowing for the direct election of provincial governors and district delegates, and the integration of Renamo fighters into the security forces. The agreement paved the way for the 2019 general elections, which were held in October, and resulted in another victory for Frelimo, with 73% of the presidential vote, 70% of the parliamentary seats, and all 10 provincial governorships. Renamo rejected the results, claiming fraud and manipulation, and filed a legal challenge, which was dismissed by the Constitutional Council.

In 2017, a new armed conflict with insurgency began in Cabo Delgado province in Northern Mozambique, led by a militant group known as Ahlu Sunna Wal Jama, or also referred to as Al-Shabaab. The conflict is complex showing a mix of factors, including economic marginalization worsened by the discovery of minerals and natural gas deposits, religious extremism, and social grievances. While initial attacks were targeting mainly government installations and security forces, it also included civilians. A gradual escalation was experienced in 2018-2019, with increased attacks and the group taking over certain areas in the northern districts of the province, also attacking energy infrastructures such as the natural gas facilities of Total in Afungi.

Social:

Mozambique has a young and diverse population, with more than 40 ethnic groups and languages. It ranks low on human development indicators, such as for life expectancy, education, and health. According to the World Bank the poverty rate was 46.1% in 2014/15 and increased to 48.4% in 2018/19. The country also suffers from high rates of malnutrition, maternal and child mortality, HIV/AIDS, and malaria. Mozambique has been affected by recurrent natural disasters, such as floods, droughts, and cyclones, which have displaced thousands of people and damaged infrastructure and livelihoods.

Among the main natural disasters in Mozambique between 2014 and 2018 were the following:

- Beginning of 2014, flooding due to heavy rains in Northern and Central Mozambique affected more than 200,000 people and caused damages of about \$50 million.
- In 2015-2016, a regional El Niño-induced drought affected 2.1 million people, who faced food insecurity and malnutrition. According to the Technical Secretariat for Food Security and Nutrition's (SETSAN) November 2016 report, an estimated 2.1 million Mozambicans had limited or uncertain access to food and needed assistance prior to the March-April 2017 harvest. This figure represents an increase of 700,000 persons over 2016 and illustrates the vulnerability of the Mozambican people. The depletion of family assets (food stocks, seed stock, livestock, and family savings) as a result of the 2016 drought left many households destitute and dependent on food and other assistance provided by GoM and development partners such as USAID and others.
- Approximately 80 percent of the Mozambican population relies on rain-fed agriculture for their subsistence, which is sensitive to extreme climatic events as well as pests.

Economic:

Mozambique's economy is dominantly based on agriculture as main economic activity, source of income and livelihood for more than 70% of the population, while only accounting for 25.5% of GDP in 2018. It is then followed by mining and industry (contributing 25.3% of GDP in 2018), and services (39.4% of GDP). It has experienced high growth rates in the past decade, averaging 7.2% per year from 2004 to 2014, driven by large-scale foreign investments in coal, gas, and infrastructure projects.

In 2015, it was revealed that GoM had contracted \$2 billion of hidden debts from foreign creditors, without parliamentary approval or public disclosure, triggering a severe financial, economic and political crisis. The debt scandal led to the suspension of donor support (General Budget Support (GBS) and IMF Standby Credit Facility, which accounted for about 33% of the budget, and triggered a legal investigation and a debt restructuring process. The hidden debt scandal consequences resulted on economic direct costs and damages, reducing welfare and worsening politico-institutional environment, with at least 11 billion USD cost pushing almost 2 million people into poverty. As such, growth rates slowed down to 3.3% in 2016, and 3.7% in 2017, due to this and a combination of other factors, such as lower commodity prices, fiscal imbalances, required currency depreciation, and inflation. To fill the gap left by diminished donor funding, the internal revenue generation grew to 74% in the 2018 Budget Proposal, and the GoM increased the internal loans to 6.3% and external loans to 14% in 2018.

The economic outlook improved slightly in 2018, with a growth rate of 4.1%, supported by the recovery of agriculture and the start of liquefied natural gas (LNG) projects. Mozambique has the potential to become one of the world's largest LNG exporters, with an estimated 125 trillion cubic feet of gas reserves. However, the development of the gas sector also poses significant challenges, such as managing the environmental and social impacts, ensuring transparency and accountability, and promoting inclusive and sustainable growth which could not be achieved with previous natural resource explorations (coal, gas, minerals).

Environmental:

Mozambique is rich in biodiversity and natural resources, but also vulnerable to environmental degradation and climate change with the impact of natural disasters. The country has a long coastline of about 2.700 kilometers, which hosts important marine and coastal ecosystems, such as coral reefs, mangroves, and seagrass beds. These ecosystems provide valuable services, such as food, tourism, and coastal protection, but are threatened by overfishing, pollution, and coastal erosion. Mozambique also has diverse terrestrial ecosystems, such as forests, savannas, and wetlands, which harbor a variety of wildlife species, including elephants, lions, and rhinos. These ecosystems are under pressure from deforestation, land conversion, poaching, and mining. Mozambique is considered one of the most exposed and least resilient countries to climate change, due to its geographic location, low adaptive capacity, and high dependence on natural resources. The country faces increased risks of extreme weather events, such as floods, droughts, and cyclones, which have negative impacts on human lives, infrastructure, agriculture, and ecosystems.

Aware of its vulnerability to environmental degradation and climate change, Mozambique had made progress in developing its environmental policy and legal frameworks, such as the National Strategy for Climate Change Adaptation and Mitigation (2013), the National Strategy for Integrated Solid Waste Management (2014), and the National Biodiversity Strategy and Action Plan (2015).

Energy:

By 2018, Mozambique's electrification rate was about 24% in 2017, including the national grid as well as off-grid solutions in place. This low rate already indicates how challenging access to electricity for all is in Mozambique. With access being concentrated mainly in urban areas - expected 75% of urban areas having access to energy compared to only 5% of the rural areas - the distribution is not only unequal, but also the quality of electricity is problematic, often oscillating, of insufficient intensity, and with frequent power cuts especially during the rainy season. Divers projects existed and were foreseen to start operating past 2018, decentralizing further the energy production to diverse hubs across the country, including solar- and wind-powered stations in Northern Mozambique. One advantage is that Mozambican energy production is almost entirely based on renewable sources, with the biggest power generation plant being the Cahora Bassa dam in Tete province (if ignoring household energy sources which are dominantly fossil-based). However, with 75% of the energy produced at Cahora Bassa being exported, leaving only a small share for national consumption, and taken the challenges in distributing energy across this vast country with a weak infrastructure capacity and funding, there is still a long path and opportunities for many innovative RE technologies. The accelerated population growth with the fact that the majority of people live in rural areas is another factor to take into consideration for future development. The population is expected to reach approx. 48.3 million inhabitants in 2042, while the electrification is expected to reach just 77.5%. The energy law just started to be revised and it is expected to provide future guidance for Mozambique's endeavor towards electrification.

2.2. TSE4ALLM Project overview

Under the described context, the project "Towards sustainable energy for all: Promoting market-based dissemination of integrated renewable energy for productive activities in rural areas" aimed to increase renewable energy participation using a market-based approach through the adoption of solar PV and Waste-to-Energy solutions in small to medium-scale farms and agro-food processing facilities. The added value of this project has been the promotion of the above-mentioned renewable energies (RE) technologies in small and medium scale businesses, particularly in rural areas. The project aimed to demonstrate the integration of RE technology in view of replication. Organized in the following four (4) components:

- i. Establishment of a conducive policy and regulatory environment to promote private sector involvement in the integration of RE systems for rural areas.

ii. Capacity building and knowledge management of RE market players and enablers including relevant government officials at national and provincial level, financial institutions, private sector, universities, and VET institutions.

iii. Technology demonstration and scaling up, including financial feasibility of RE technologies in agricultural activities located in rural areas such as solar PV water pumping and biogas/biomass usage in agro-food processing industries by implementing demonstration projects. These projects would not only provide greenhouse gas (GHG) reduction emissions but also case studies and best practices on the use of RE technology that have high replication potential across Mozambique. This component benefits of the biggest funding (USD 2,227,340) from UNIDO/GEF in this project to support the demonstration projects and effectively reduce the upfront costs of such investment projects.

iv. Monitoring and Evaluation to establish and conduct adequate and systematic M&E, together with reporting all project indicators following UNIDO and GEF procedures to ensure successful project implementation.

The TSE4ALLM project aligns with the GEF-6 climate change focal area strategy, which focuses on three objectives: promoting innovation, technology transfer, and supportive policies and strategies (CC1); demonstrating systemic impacts mitigation options (CC2) and fostering enabling conditions to mainstream mitigation concerns into sustainable development strategies (CC3). This project is supported by the GEF trust Fund, focusing on assisting developing countries to make transformational shifts towards a low-emission resilient development path. TSE4ALLM promotes the use of renewable energy integrated systems, contributing to the reduction of greenhouse gas emissions.

The TSE4ALLM project is aligned with the GEF-6 climate change focal area strategy that focuses on three objectives: promoting innovation, technology transfer, and supportive policies and strategies (CC1), demonstrating systemic impacts mitigations options (CC2), and fostering enabling conditions to mainstream mitigation concerns into sustainable development strategies (CC3) supported by the GEF trust Fund focusing on supporting developing countries to make transformational shifts towards low emission, resilient development path, as TSE4ALLM promotes the promotion of renewable energy integrated systems and thus contributing to the GHG reduction emissions, by developing a low-emission development path.

The TSE4ALLM project was implemented in Mozambique by UNIDO with the following initial executing partners: Ministry of Land Environment and Rural Development (MITADER), Ministry of Mineral Resources and Energy (MIREME), Ministry of Agriculture and Food Security (MASA), Ministry of Education and Human Development (MEC), National Sustainable Development Fund (FNDS), Energy Fund (FUNAE); and the SADC Centre for Renewable Energy and Energy Efficiency (SACREEE).

Project's stakeholders in implementation were the Energy Fund (FUNAE), Ministry of Mineral Resources and Energy (MIREME), Ministry of Agriculture and Rural Development (MADER), Ministry of Land and Environment (MTA), Aid for the Development of People for People (ADPP), the Commercial and Investment Bank (BCI), the Confederation of Business Associations (CTA), and Eduardo Mondlane University (UEM).

The TSE4ALLM project was designed to be co-financed by:

- The Government of Mozambique, GoM, through MITADER which changed its name to MTA, financially and in kind in the implementation of all components.
- The Commercial and Investment Bank (BCI), through a catered credit line for the development of RE projects for productive uses in rural areas.
- The SADC Centre for Renewable Energy and Energy Efficiency (SACREEE) financially and in kind to develop policy and regulatory environment that promotes the integration of RE technologies, as well as the capacity building activities on RE technologies.

- The private sector in co-financing the technological demonstrations and scaling-up the third component of the project.
- UNIDO financially and in kind, implementing the whole project.

3. Findings

The findings section uses the following criteria Relevance, Coherence, Effectiveness, Efficiency, Sustainability and Progress to impact and is based on collected and analyzed data. The evaluation criteria were further broken down into judgement criteria and indicators as per evaluation matrix in Annex 2.

3.1. Relevance

EQ3.1 What is the relevance of TSE4ALLM project to country policies and needs?

Judgement Criteria: TSE4ALLM project showed good alignment with country policies and needs

The evaluation team assessed the extent to which the TSE4ALLM objectives and design responded to:

A) Country policy objectives and priorities.

Overall, the TSE4ALLM is strongly aligned with the Government of Mozambique policies and priorities, such as the Electricity Law from 1997 (law no. 21/97⁶) updated in July 2022 (Law no. 12/2022⁷), together with the Regulation for Energy Access in Off-grid Areas⁸ active since 24th January 2022 offering the private sector a cleared and transparent process for the implementation of their off-grid electrification projects and supports to achieve the government electrification goals for 2030 (to reach a 100% electrification rate). It responds to the ongoing strategy, the “Estratégia de desenvolvimento de energias novas e renováveis (EDENR)” for the period 2011-2025, and also the law on Public-Private Partnerships (PPPs) (law no.15/2011 of 10/08/2011⁹).

B) Country needs

Mozambique needs to expand its energy production to be able to respond to the huge existing demand for access to quality energy, especially in rural areas. The Mozambique National Energy Fund (FUNAE) created in July 1997¹⁰ and modified in November 2020 has as main objective to develop, fund and implement energy projects that address rural electrification and off-grid solutions, developing and operating mini-grids and solar home systems (SHS) in areas not reached by the national grid and with a special focus on access to renewable energy. Once completed, the projects are sold to either the national energy operator EDM, private operators or community members. FUNAE also works on promoting improved home-cooking stoves and solutions in cooperation with international development organizations.

During the field mission in November and presented during the COP28, the GoM approved an Energy Transition Strategy (ETS) of USD 80 billion to leverage the country’s vast renewable resources to position Mozambique as a sustainable investment destination and deliver energy to the people of Mozambique between now and 2050. ETS represents an ambitious vision for transforming and expanding Mozambique’s energy systems which will provide a significant and lasting impact on the people and boost industrialization and support regional and global efforts to combat climate change.

⁶ <https://www.edm.co.mz/en/website/page/legislation>

⁷ http://www.lerenovaveis.org/content/lerpublication/lei-12_2022-lei-de-electricidade.pdf

⁸ http://www.lerenovaveis.org/content/lerpublication/decreto-93-2021_regulamento-de-acesso-a-energia-nas-zonas-fora-da-reder_6586.pdf

⁹ http://www.inp.gov.mz/en/content/download/1345/9019/file/lei%20n_15%202011.pdf

¹⁰ Decree no. 24/97 July 22nd 1997.

TSE4ALLM project is relevant to UNIDO and GEF policies and initiatives, and to those of other key donors.

The evaluation team assessed the extent to which the TSE4ALLM objectives and design responded to UNIDO and GEF policies and initiatives.

The TSE4ALLM project is aligned with the following GEF objective and policies:

GEF main purpose of funding is to support developing countries and countries with economies in transition to meet the objectives of the international environmental conventions and agreements.

GEF policy on Gender, which supports not only gender equality and health but increasing gender equality with GEF partners and ensuring that people's gender needs are met, is only partially met. The TSE4ALLM only mentions that female participation at least would be of 40%, and though several of the demonstration pilots have strongly mainstreamed gender equality, health and increased the participation of females as beneficiaries. The design of TSE4ALLM project did not explicitly mention the need for indicators to measure the support to gender equality, nor how it would increase the gender equality or how the gender needs of the target stakeholders and beneficiaries would be ensured.

GEF policy on public involvement, comprising the three related and overlapping processes of i) information dissemination, ii) consultation and iii) stakeholder participation.

In respect to other donors, TSE4ALLM is aligned with the following donors' priorities:

Judgement criteria¹¹ 3.1.3 TSE4ALLM project shows good alignment with private sector and population needs, addressing main issues.

The evaluation team assessed the extent to which the TSE4ALLM project is aligned to the private sector and population needs.

Private sector needs:

Despite Mozambique's largest power generation potential of all Southern African countries, only about 34% of the population have access to electricity in 2023, which is highly unequally distributed between urban and rural areas. Industry and business are expected to drive the main energy demand, with the GoM's priority to rural electrification development, led by FUNAE which focuses on smaller off-grid projects of less than 10MW.

Mozambique's most important imports are fuel, machinery and spare parts, and food production items that are indispensable for developing the private sector and a sustainable economy.

The TSE4ALLM pilot projects such as the CHARIS generating biomass-based energy in rural areas, or the AFORAMA solar-panels and BCI Credit line with the private sector of water, and macadamia and cashew in areas without energy access.

Population needs:

The TSE4ALLM project promotes use of solar pump technology to extract clean water from aquifers and groundwater natural reserves for local drinking water consumption (AFORAMO pilot projects and BCI Super Credit line financed projects).

Over half of the Mozambican population (14.8 million people) lives without clean water, while three in four people have no adequate toilet. One of the consequences is that over 2,500 children under the age of 5 die every year from diarrhea caused by dirty water, poor toilets and

¹¹ Judgement Criteria of the Evaluation Matrix

a lack of adequate sanitary conditions. The lack of clean water and decent toilets affect mostly women and girls, as they collect and carry water throughout their lives, reducing the time to go to school and receiving education.

The solar pump technology is also used to extract water for agricultural and livelihood purposes (ADPP pilot projects, Quinta IRINI (MADER)) supporting sustainable farming of small and cooperatives farms, which is aligned with the objective of making more effective the production and the production processes from the Ministry of Agriculture.

Mozambique shows a high vulnerability and low level of resilience to impacts of climate change as presented above having led to the adoption of the National Strategy on Adaptation and Mitigation to climate change for the period 2013-2025 in which, among others, the identification and promotion of technologies towards a low carbon growth and green economy, as well as the efficient use of existing resources for economic activities are aimed for.

The TSE4ALLM project is well aligned with the Ministry of Land and Environment (MTA) strategy, and the Ministry of Agriculture and Rural Development (MADER) through its pilot demonstrations and the BCI SUPER credit-line projects using local biomass resources and solar-power for energy production for their small-scale business and household energy needs.

3.2. Coherence

EQ3.2 Is the UNIDO support to the TSE4ALLM project coherent with UNIDO and other donors' policies and support?

Judgement criteria: The UNIDO support for the TSE4ALLM project has been coherent with the UNIDO strategy and policy in infrastructures of RE Systems, GEF priorities and other donors' policies and support

The evaluation team assessed the degree of coherence to which the TSE4ALLM project is aligned to the UNIDO strategy and policies in infrastructure of RE system sector in Mozambique and found that the TSE4ALLM project is most coherent with UNIDO's strategic implementation of decentralized renewable energies (DRE) within industrial processes yields numerous advantages. It significantly benefits not just the private sector, but also rural communities providing them access to energy solutions that bring down the cost of electricity while improving reliability and sustainability with environment friendly solutions. UNIDO's Energy Systems and Decarbonization Division (TCS/DSE) and Investment and Technology Promotion Office (ITPO), together in partnership with the Alliance for Rural Electrification (ARE) spread innovative clean energy solutions.

The TSE4ALLM project's component 1 intended to establish policy and regulatory environment to promote integrated renewable energy systems in rural areas, focused on enhancing GoM's policies in energy generation and creating access to private sector participation according to GoM programme's Energy for All (ProEnergia), launched in 2018, and GoM's commitment to fulfil the SDG 7 and the Energy Africa Mozambique Compact.

While TSE4ALLM project's component 2 aimed to enhance the capacity of key players and the availability of information for market enablers and players. The focus was on building and reinforcing the capacity of stakeholders in the energy sector. The design of this component was highly coherent with UNIDO's DRE strategy, which aims to increase access to affordable, reliable, and sustainable energy by locating energy production facilities closer to the site of energy consumption. This strategy optimizes the use of renewable energy and combined heat and power, reduces fuel use, and increases eco-efficiency.

The TSE4ALLM project component 3 intended to demonstrate integrated RE systems, and scale up investment in integrated RE systems, focused on i) Ministry of Agriculture, and ii) local Civil Society Organizations (CSOs) implementation of pilot projects providing hands-on and

knowledge sharing across different stakeholders, such as ministries, governmental agencies, academia and local CSOs.

The TSE4ALLM project showed a good degree of coherence and complementarity with several international donors RE system projects in Mozambique. The evaluation team identified the following international donors' projects:

- i. **Green People's Energy (GBE)** commissioned by German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by GIZ in the period 10/2018 – 09/2023 (Ethiopia, Benin, Côte d'Ivoire, Ghana, Mozambique, Namibia, Zambia, Senegal and Uganda). The lead executing agencies were the Energy ministries and rural energy agencies in the selected countries.
- ii. **Energizing Development (EnDev)**, a multi-donor programme financed by the German Federal Ministry for Economic Cooperation and Development (BMZ), The Netherlands Ministry of Foreign Affairs (DGIS), the Norwegian Agency for Development Cooperation (NORAD) and the Swiss Agency for Development and Cooperation (SDC), operating since 2005 in 20 countries across Africa, Asia and Latin America for improving access to modern energy services employing market-based approaches. In Mozambique, the focus is especially on serving people to access modern energy services via solar home systems, pico photovoltaic systems and improved cookstoves, as well as the grid densification in cooperation with the national utility providers EDM.
- iii. **BRILHO programme**, project financed by United Kingdom Foreign, Commonwealth & Development Office (FCDO) and since 11/2021 also by Swedish International Development Cooperation Agency (Sida), implemented by SNV in the period 2019-2024. Aiming to catalyzing Mozambique's off-grid energy market to provide clean and affordable energy solutions to people and businesses.
- i. **PROSUL** project financed by the International Fund for Agricultural Development and implemented by the Ministry of Agriculture facilitating solar panels to provide energy for water pumps in the context of supporting the agricultural production of small-scale producers in the Maputo and Limpopo corridor in Maputo, Gaza and Inhambane provinces.
- ii. **Alliance for Rural Electrification (ARE)** and UNIDO partnered in 2019 to collaborate in the mining and the agriculture sector.
- iii. **Power Africa** project financed by the US Government- led public-private partnership to double access to electricity in rural areas in Southern African countries.

As well to other relevant donors in Mozambique like the **USAID's** goal is to support Mozambique to leverage emerging opportunities to achieve inclusive socio-economic development by strengthening democratic governance with effective, transparent and accountable government institutions and civil society participation in governance processes.

Kreditanstalt für Wiederaufbau (KfW) top priorities are to improve people's prospects for a better life, to protect the environment and combat climate change.

It should be also mentioned that the TSE4ALLM project is aligned with UNIDO promotion of the following SDGs:

SDG 7: Affordable and Clean Energy, by supporting energy efficiency policies, technologies and practices, as well as access to affordable renewable sources of energy for the facilitation of productive activities, providing Mozambique an opportunity to follow a low-carbon and low emission growth path.

SDG 9: Industry Innovation and infrastructure, as supporting inclusive and sustainable industrialization as a primary source of income generation. The industrial sector serves as an integrator between agriculture and service sector, and it is an important source of innovation,

providing technology solutions for environmentally sound development and increased resource and energy-efficiency, low-carbon production, circular economies and climate action.

SDG 12: Responsible consumption and production, UNIDO promotes green industries, resource efficient management, cleaner production, energy efficiency in industry, reduction of waste and pollution and environmental sustainability policies in industrial production and consumption, such as the circular economy.

SDG 13: Climate action, UNIDO supports the reduction of industrial CO₂ and other greenhouse gas emissions, including through sustainable energy solutions and the uptake resource-efficient technologies and practices and cleaner production in industrial processes.

3.3. Effectiveness

EQ3.3 To what extent has the TSE4ALLM project achieved its targeted results?

Judgement criteria: TSE4ALLM project has reached its specific objectives and contributed to increasing renewable energy participation through the adoption of solar PV & Wasted-Energy solution in SMEs farms & Agro processing facilities.

Identification of conducive policy and regulation environment in Component 1. The evaluation team assessment followed the analysis of the project design, implementation and attained results.

Despite the fact that TSE4ALLM project design was relevant and coherent to the existing governmental needs (policy and regulatory environment) and that C1 has clear measurable goals, the delays on the implementation and lack of proactivity in the first two years of implementation left the TSE4ALLM project representatives from UNIDO without any participation on the government working task force supporting the Autoridade Reguladora de Energia (ARENE) and the Ministry of Energy in the revision and updating of the energy legislation in Mozambique (for more explanation on this point please see the Efficiency criterion).

The clear efforts of the GoM to create favorable conditions for developing and inclusive and competitive off-grid energy market and its strong commitment conclude with the new Energy law, Law 12/2022 of 11 July 2022, which provides the new general organization of the electricity sector and the legal rules for electricity supply activities.

It is evident that despite having a privileged position with the Ministry of Agriculture due to their expertise in promoting biomass/biogas, the UNIDO TSE4ALLM implementation team failed to encourage collaboration from government agencies related to energy beyond the Quinta IRINI demonstration pilot (Component 3) in the TSE4ALLM project.

The TSE4ALLM MTR mentioned that on C1, especially output 1.1 “Policy framework for private sector engagement in integrated RE systems in rural areas adopted and presented for adoption.” The activity 1.1.1. “Establishment of a Policy and Regulatory Task force” was completed with members from FUNAE, FNDS, MITADER/DNDR, MIREME/DNE, INNOQ and ADPP nominations (Dec 2018). The activity 1.1.2. “Continuous gap analysis on policy regulatory frameworks conducted and recommendations developed” which never took place at the time of the MTR was to be implemented later as the government had initiated the revision of the national energy legislation. While the activity 1.1.3. “Policy and Regulatory framework workshops conducted”, has not been reported to be carried out. The terminal evaluation team found no more advancement on this output as the UNIDO team internally considered that they needed to wait until the revised energy legislation was completed to carry out the gap analysis and recommendations. However, the PIR 2022 reported these three activities as been completed, even though the taskforce never carried out any gap analysis nor provide a single recommendation. Thus, the integration of adapted and adoption RE systems in rural areas

never took place and UNIDO did not fulfil its advisory role on the process to support the government on updating the policy framework including private sector engagement in RE in rural areas.

In relation to output 1.2 “Guidelines on private sector involvement in renewable energy projects in rural areas developed and adopted”, the activities carried out were: 1.2.1: Consultation with private sector actors” with the implementation of a consultation workshop which focused on both raising awareness of the TSE4ALLM project and discussing solar PV and Biomass to energy technologies, but also aimed to consult the audience on the challenges and barriers that they encounter on delivering renewable energy projects (Nov. 2018). Two and a half years later this activity was resumed (Mar. 2021), by hiring an individual consultant, who carried a consultation that overall reached 192 respondents (with 49% of which were female) representing government offices, financial institutions, private sector agents such as renewable energy service providers and farmers, development partners and civil society. The relevant private sector was represented by 21 institutions (initially indicator was of 10 private sector institutions). This consultation was completed with the acceptance of the final consultation report by UNIDO. The next activity 1.2.2: “Development and Dissemination of guidelines for private sector engagement”, though the PIR FY2022 reported that a set of tailor made guidelines considering gender dimensions was generated, the evaluation team did not receive any set of tailor guidelines for private sector engagement, or set of guidelines for private sector involvement in the RE business, nor was there information if the resulted guidelines have been presented and disseminated in a workshop. The activity 1.2.2 was initially reported in PIR FY21 as set of guidelines for private sector involvement in the RE business, while the next year in PIR FY22 is reported as a set of tailor-made guidelines considering gender dimensions. There is no clear mention on the adoption of the guidelines on women involvement in renewable energy business, nor if a consultation on the set of tailored guidelines was actually carried out as all activities on this output were considered to have been completed in the PIR FY2023.

In the case of output 1.3 “Standards for typical integrated renewable energy systems for rural areas enhanced and presented to authorities”, the activities implemented were activity 1.3.1: “Information analysis about standards at national and international level”. Activity 1.3.2. improvement/development of the national standards publication and dissemination. On this output the activities completed in 2019 were: i) the consultation (2 meetings) with INNOQ, ii) a workshop to discuss and validate standards for solar PV and biomass systems that already exist in the country and those that need to be developed, and iii) a meeting between DNE and FUNAE in order to finalize recommendations and fine tune requirements.

The solar PV sector while being in a more favorable situation and having benefited of a considerable number of standards, still needed support and two standards were identified as priority. The Biomass sector did not have any existing standards in Mozambique, which triggered the need to engage foreign experts to guide on the priorities. For 2 years no action was carried, and only in 2022 it was reported an activation on the implementation of output 1.3, with several meetings taking place with the Ministry of Mineral Resources and Energy (MIREME) to agree on the approach to be followed for the development of relevant instruments to improve the legal and regulatory framework for small size solar PV and waste-to-energy systems. MIREME also advised to develop guidelines for both PV and waste-to-energy systems to be used by the project developers under the BCI-Super credit line (formal request). By 2023, ToR were developed for the biogas standard in cooperation with MIREME, intended to be completed in October 2023 and then performing a workshop presenting the new standards to relevant stakeholders. Unluckily the evaluation team did not find any reporting on this output nor on the new standard in any documentation, including the PIR FY 23. During the field phase the people interviewed from MIREME have only recently joined so it was not possible to confirm, or clarify any piece of information.

Capacity building and knowledge management of RE market players and enablers in Component 2. This component comprised one outcome 2.1: “Capacity of key players strengthened and information available for market enablers and players” and three outputs. Overall, the evaluation team did not find any analysis, nor baseline on the existing capacity building and knowledge management of RE market players and enablers, nor their needs. Even when Mozambique has shown great improvement and fast advancement on carbon-free renewable energy and green growth strategy, there is still much work to be done to encourage all partners and stakeholders in the energy sector to join forces, particularly the private sector.

In relation to RE systems knowledge management, the solar photovoltaic energy generation was by far better developed and legally covered than the waste-energy solutions such as the biomass and bio digesters, but still both RE systems are not fully incorporated in Mozambique. One of the main issues has been the lack of technical knowledge in the assessment of the energy needs, the choice of equipment, and simple maintenance of the equipment. While capacity building on the technical aspects of implementing RE systems was crucial, there was not only poor adoption of regulation but also poor technical capacity to properly install the equipment and its maintenance.

In relation to output 2.1.1: “Five training sessions for 50 government officials at both national and provincial level on RE integrated systems conducted”, the designed 5 activities for the TSE4ALLM project were: activity 2.1.1.1: identify capacity and knowledge gaps of government officials for defined regions/institutions, activity 2.1.1.2: Develop selection process for training targeting government officials, activity 2.1.1.3: Develop training programme and implementation plan, activity 2.1.1.4: develop training materials and activity 2.1.1.5: Conduct trainings. They are interrelated and build upon each other to construct the designed output. The same logic and structure are present on output 2.1.2: “Ten training sessions targeting 250 participants from financial institutions, & private sector organizations on financing integrated RE systems conducted” composed of six (6) activities: activity 2.1.2.1: Identify key Financial Institutions and private sector organizations in the Renewable Energy, activity 2.1.2.2: Assess capacity of the identified FIs and private sector organizations, activity 2.1.2.3: Develop selection process for training of FIs and private sector organizations, activity 2.1.2.4: Develop and present outline for training programme, activity 2.1.2.5: Develop training materials, activity 2.1.2.6: Conduct trainings.

In relation to output 2.1.3: “Twenty-five training of Universities and vocational training institutions staff on various aspects of integrated RE systems on a train-the trainer basis conducted”, which is also composed of six (6) activities: activity 2.1.3.1: “identify key universities and vocational training institutions to be trained”, activity 2.1.3.2: “Assess capacity of the identified universities and vocational training institutions”, activity 2.1.3.3: “Develop selection process for training universities and vocational training institutions”, activity 2.1.3.4: Develop and present outline for training programme, activity 2.1.3.5: Develop training materials, and activity 2.1.3.6: Conduct trainings. These 17 activities were designed to provide support and build the capacity of the three key stakeholders groups.

The TSE4ALLM project’s component 2, despite offering a flexible outcome was poorly implemented with not clear strategy nor coherence on its interconnection to Component 1 and 3. Overall the UNIDO team tried a serial of tentative actions to achieve C2 but without any success or follow up.

Thus, the first action on the C2 was the TSE4ALLM Cluster, intended to provide a sustainable platform for articulation of stakeholders and linkages between private and public organizations, academia and research institutions, energy service companies, solution providers and technology suppliers, having as aim to foster competitiveness in the adoption of integrated RE systems. In this particular action, some of the activities of output 2.1.3 were partially implemented, such as the 2.1.3.1 with the identification of Clusters’ champions within the UEM and the 2.1.3.2 by identifying needed clusters’ sectors and 2.1.3.4 by developing a cluster platform to integrate the RE systems in their industry. Also, activity 2.1.3.5 was intended

to be implemented by developing vocational training material to be integrated within the UEM curriculum and taught to a selected taskforce from the UEM. These activities were to be reinforced by the signed cooperation agreement between UNIDO and UEM. The interviews revealed that UNIDO Mozambique's understanding of the Joint Declaration was that UEM would develop vocational training material to be integrated within the UEM curriculum and teach initially to a selected taskforce within the UEM. This UEM taskforce will identify technical gaps along the value chain of RE selected technologies and support the project to implement training sessions for government officials. In this way covering two out of three outputs of C2 (output 2.1.1, and 2.1.3). However, this action was only implemented for two years that was possible to hire the services of a key UEM professor to develop the Cluster concept note and identification of Cluster champions inside the UEM. But this implementation did not go further due to contract constraints on the UNIDO side. The interview with the UNIDO National Project Coordinator on this subject revealed that at UNIDO headquarters, Human Resources Management (HRM) could not find a contract model that they could use to hire a professor from an organization that had a collaboration agreement with UNIDO. It seems that the HRM considered that the UEM should cover the consultant's cost as part of the collaboration agreement. The reality is that the work developing the Cluster concept note and identifying cluster champions were outside the work description of any university professor. Thus, this consultancy key to developing the C2 was not continued, causing the cluster activity to be dropped.

The second initiative was the COMFAR training, implemented in 2022. It is important to bear in mind that the COMFAR trainings comprised all the three outputs of component 2, as the three target groups (relevant government officials, key financial institutions and universities and vocational training institutions) were included. COMFAR provided a basic, intermediate and an expert training in building the capacity on appraisal of investment projects using UNIDO methodology. It was attended by personnel from BCI, FUNAE, MADER, MIREME, UEM and ADPP. Initially aiming to reach 50 government officials, 250 Financial experts and 50 academic staff, it only reached 15 people. This was due to the availability of the key stakeholders' staff and technical requirements of the COMFAR training that was originally intended to be delivery in Vienna and initially planned to be implemented during COVID pandemic. The feedback from the personnel of BCI, FUNAE and MADER was extremely positive to the training in relation to the acquired knowledge and quality of the content and trainers, as well as the usefulness of the content. However, there is no mention to the acquisition of the COMFAR software¹² in the following to continue using it. This training was directly built into the component 3, particularly on the selection of pilot projects for the BCI Super Credit line.

The third initiative was to benefit of the Cabo Verde project "Sustainable energy access to manage water resources: Addressing the Energy-Water Nexus" (August 2017- August 2024), output 2, in particular the technical training material on RE EE. This initiative showing a strong strategy for added value and effectiveness, was never achieved due to the fact that the Cabo Verde project got delays in the design of the technical training programme and no agreement was reached between the two projects.

There is another initiative related to training provided in 2021 in partnership with ClimateScience. This agreement allowed the use of ClimateScience courses on clean energy and climate change. In total, a number of 152 people accessed ClimateScience training courses through the TSE4ALLM website and social media channels. No further details are available on what participants attended these courses and the completion rate.

Component 2 – implementation lacked a clear strategy and though the three initiatives were extremely pertinent, they did not achieve any of the KPIs of this component.

¹² It is the UNIDO's computer model for feasibility analysis and reporting, that complements investment-profiling efforts and offer feasibility analysis support of large infrastructure of Public-Private Partnership (PPP) projects through the blending finance mechanism to develop bankable projects. (<https://www.unido.org/comfar>).

Technology demonstration and scaling up in Component 3. The evaluation team's assessment of the technology demonstration and scaling up component found that the two technology demonstration types: i) demonstration pilots of renewable energy with 5 different implementers ADPP, AFORAMO, CHARIS, MADER and MAKOMANE-ADM; and ii) BCI Super credit line funded projects have been overall successfully implemented, in spite of systematic delays in the selection of partners on the one hand and the late financial disbursements from UNIDO on the other.

The RE technology demonstration projects and RE investment projects were initially designed to be implemented in chronological order so as the RE demonstration projects will build up and carry momentum for the RE investment projects financed by the BCI Super credit line. Due to systematic delays these two types of technology demonstrations were implemented mainly in parallel except for ADPP demonstration project which was completed in 2019), creating some confusion in the applicants and jeopardizing the technology scaling up originally intended in the TSE4ALLM.

Overall, the Component 3 implementation of its two outputs shows clear results and potential sustainability. Example of the effectiveness of the implementation of the pilot demonstration is the technologies tested in Quinta IRINI also include an aquaponic system for sustainable fish and biofertilizer production, while a highly potent biofertilizer is already won as side product of the biodigester, providing alternative and environmentally beneficial solutions for a more sustainable agricultural production, not harming the natural ecosystem, and allowing a reduction in use of chemical fertilizers (by-products include fertilizer, livestock bedding and soil amendments) – supporting both MADER's and MTA's objectives.

The CHARIS demonstration project using small biodigesters as source for cooking in rural areas in Inhambane province reduces not only the degradation of fossil resources which as usually used, but also reduced the time women and girls spend to collect the wood for cooking, reducing their workload and supporting the objective of MTA's Gender, Environment and Climate Change Strategy and Action plan.

However, due to lack of information on the KPIs of the outputs, the evaluators were unable to confirm if the 250kW energy capacity were implemented in the output 3.1.1. ¹³nor if the 1.2 MW installed capacity on rural areas was attained.

3.4. Efficiency

EQ3.4 Has the TSE4ALLM project been efficiently implemented?

Judgement criteria: TSE4ALLM project was managed satisfactorily, allowing its optimal prospects to achieve its objectives

The evaluation team assessed the quality of project management, including work planning, troubleshooting, adaptability to change and delivering.

In the case of the project management, even when UNIDO has generally a high-quality level of project management with a three major phases, (i) Pre-investment phase (ii) Investment phase (implementation phase) and (iii) Operation phase (operation and ex-post evaluation), the TSE4ALLM project seemed to have a low-quality level. The TSE4ALLM project was written and presented to GEF5 without any feedback from the government who did not see any relevance with their reality in 2014. End of 2015, MITADER sent an email expressing interest in the project as the new government in their first 100 days of operation has determined that RE and GEF were considered as relevant. This meant that the TSE4ALLM project needed to be redesigned.

¹³ 3.1.1. Demonstration projects on integrated renewable energy systems with about 250kW of installed capacity implemented in selected productive sectors with high visibility and replication potential.

However, by the time of consultations for identification of stakeholders and the project was redesigned in 2015, the breaking news of the hidden debt were published. The devaluation of the Metical left the government without money to invest in any project, being the reason that new partners had to be identified to finance the project as 70% of co-financing was needed. The initial plan of strong co-financing by the Ministry of Environment was no longer possible as it had lost interest on the project. There was also a change of the GEF focal point from MITADER to the Ministry of Energy. Thus, financial partners like ADPP and BCI were identified but the financial negotiation particularly with the bank took two more years. In addition, by August 2017 the initially conducted viability studies were outdated.

On the other hand, in 2017, the GoM initiated the updating of the energy law, with the creation of the Autoridade Reguladora de Energia (ARENE), law 11/2017. The revision of the Energy Law 1997 (21/97) was considered sufficient reason not to proceed with the implementation of output 1.1. "Policy framework for private sector engagement integrated renewable energy systems in rural areas adapted and presented for adoption" on the basis that no revision could be carried out until the new legislation was published and that UNIDO was not invited to advise the GoM. This adopted strategy missed the opportunity to place UNIDO as policy technical adviser, as other projects like BRILHO Energy Africa did by working out its way offering support of technical expertise and ended up being involved as advisor of ARENE. The Electricidade de Mozambique (EDM) strategy 2018-2028 clearly show the priority on the Government Agenda. In 2021, the decret 93/2021 "Regulation for Energy access in off grid areas" provides a new boost to the implementation of output 1.1.2 and output 1.1.3.

Overall, the implementation of the TSE4ALLM shows inertia for the adoption of alternative routes and the consequent attainment or failure to achieve the project objectives. The continued commitment to this questionable strategy is manifested at individual, team, project and organizational levels. Thus, after launching the TSE4ALLM project key counterparts in the implementation either dropped their participation such as SACREEE who claim no interest in the TSE4ALLM project as they were focusing on Energy Efficiency, or took a long period of negotiation such as with UEM (Joint Declaration of Cooperation signature in February 2020) or with BCI as the talks started in 2017, the MoU was signed in 2020 and the BCI Super Credit Line was launched in 2021.

An example of this inertia can be seen also at the project management level which had undergone four different project officers. In chronological order there was a first project manager from 2017 to 2018, a second project manager from 2018 to 2021, and a third project manager from 2021 to 2022 and a fourth project manager from 2022 to 2024. There was not a guiding line generating coherence between the project officer rotation, nor continuation on the different activities initiated.

In the case of the first project officer, no PIR reporting for the implementing period 2017-2018 was facilitated, with the earliest documentation received covering Jan-Dec 2018 with the Annual Report 2018 (AR 2018).

A case in point of the identified inertia of the implementation approach is the component 2 that despite three relevant actions having been proposed and initiated, at the end it did not achieve any of its KPIs. During the implementing period led by the second project manager, a TSE4ALLM cluster was initiated and for two years the TSE4ALLM cluster completed the concept note and identification of specific energy clusters supported by the UEM. The TSE4ALLM cluster did not continued after the departure of the project manager, as the UNIDO legal unit was unable to find a contract model that allowed the hiring of the key UEM professor responsible to develop and coordinate the TSE4ALLM Cluster and the other three UEM professors responsible for their areas. The following project officer focused on the capacity building of the different target groups linked to the identification of bankable proposals. The COMFAR training was an excellent alternative to support and enhance the capacity to share knowledge and being hands on approach using UNIDO methodologies and tools for project formulation and appraisal including COMFAR (Computer Model for Feasibility Analysis and Reporting).

During the same period, it was intended to be benefited of a UNIDO project “Sustainable energy access to management water resources: addressing the Energy-Water Nexus” in Cabo Verde that was developing technical training material on how to integrate RE and EE technologies. The negotiation with the project were not successful, not to mention that the training programme was delayed and not completed. The ClimateScience courses was a good idea but it actually did not seem to fulfil the project’s needs.

Other examples of inertia implementation have been identified on the component 3, even though it has been the only component where implementation has shown clear accomplishments of its objectives. Thus, the *Biomass project in Niassa* decided to proceed with another donor given the delays experienced in the approval of the GEF/UNIDO project. While the *Animal Farm Tindzawene, Mabalane* project was dropped due to inconsistencies in the data and changes at the location of the implementation that made this project no longer feasible.

In the case of the BCI Super credit line selection of bankable projects, there seems to have been a misunderstanding on what the business proposal needed to be. Thus, while several organizations filled up expressions of interest via the online form, UNIDO supporting the preparation of the business proposal did not verify that the applications were in line with the BCI needed criteria for funding. Therefore, from the 24 projects selected by the technical committee, only 10 proposals were approved by BCI to be funded. This high rate of proposal rejection was due to the lack of understanding on the specificity of the BCI Super Credit which have been created as a credit line exclusively for renewable and sustainable energy. The two major shortcomings on the rejected proposals have been i) the request of financing on other areas than the energy systems, such as company growth, increase of capital, and /or increase of personnel; and ii) the type of enterprise applying to the credit line, as BCI Super credit line was not financing informal groups, start-ups (applicant enterprises had to have at least 2 years of paying taxes) nor single people companies. The delay generated in the selection process, has been the results of several factors: i) Communication between the two selection committees, at the beginning, there was positive integration and communication and the feedback between the technical team and the financial team was extremely useful, but it stopped and the interaction between the two selection committees deteriorated. ii) the TEC was expected to work on a voluntary basis (no payment for a complex technical assessment) which compromised the quality of the cases. iii) Lack of clarity in the conceptualization of the terms of reference and the eligibility of applicants. iv) Limited human resources on the selection committees. v) The quality of the proposals’ scope which was never narrowed down to allow to generate a credible financial criterion.

In the case of the implementation of demonstration projects, the first demonstration project was a contract signed with **ADPP** for implementing a capacity of 28kW in solar pumps in 2019. Two calls for expression of interest for project developers was launched in 2019 that received 20 applications, but none was considered technically viable. Overall, the demonstration projects faced a lengthy selection process that on one occasion led to lose a project “the animal Farm Tindzawene, Mabalane process process”, which opted for another donor. From the first call for RFPs, the two first selected project implementers were **MADER** and **GPS Global** who signed their respective contracts. However, GPS Global requested the cancelation of the signed contract due to the excessive rains and floods that will limit the fuel of cashew nuts for the biodigesters. In the second call, three out of 13 RFPs were selected, i) **AFORAMO** (National Association of Private Water Suppliers) ii) **CHARIS** (biogas systems), and iii) **MAKOMANE-ADM** (solar irrigation systems, solar conservation facilities and biogas production).

The evaluation team assessed the quality of programme reporting, including the use of SMART indicators, clear monitoring of the implementing process of the TSE4ALLM project and found out that overall, the reporting did not take into consideration the challenges faced nor the context difficulties of the implementation. The PIR as well as the Annual report provide exclusively information on activities carried out, with brief descriptions. This reporting style does not allow to do a follow up nor monitoring of the evolution of the implementation as the

activities that are not carried out were simply mentioned to be implemented in the next financial year. No explanation is given of why these activities were unable to be implemented.

The PIR reports show the style of each different UNIDO Project Manager that the TSE4ALLM has had. Thus, in the PIR YR 19, PIR YR 20 and PIR YR 21, the outputs that did not have any advancement, show the text from the previous period. PIR YR 22 shows information that mislead the final attained results, i.e. the 25 projects selected by the technical committee that received support from UNIDO in their preparation, but that end up in only 10 BCI Super Credit Line financed projects.

The evaluation team assessed the quality of the programme monitoring and evaluation, including cross-cutting issues, which was quite limited to the PIR reporting and Annual Reports.

The evaluation team could not find any monitoring system that has carried out a systematic follow up of the different implemented activities. Neither in the case of the demonstration projects in their implementation process, nor in the training of the beneficiaries in the use of the RE systems installed. This was evident during the field mission, when the evaluation team found flaws in some of the visited projects. This discovery led to UNIDO's local manager to carry out a thorough follow up of the implementation of the CHARIS projects which reflects the lack of a performance appraisal (systematic and periodic process of measuring the quality of the work implemented against the established requirements of the project expected results).

Judgement criteria: TSE4ALLM project provided and supported an optimal establishment of conducive policy and comparable to best practices for similar policy, strengthen capacity building and technology demonstrations

The evaluation team found that the TSE4ALLM did not show any support nor did it provide an optimal establishment of conducive policy or best practices for similar policy, except for i) guidelines on private sector involvement in RE projects in rural areas (output 1.1.2) and the identification of standards for typical integrated RE systems for rural areas (output 1.1.3). In the PIR YR 21 information on the output 1.1.2 provides brief information on the consultation campaign carried out in November 2018, and the hiring of a consultant in March 2021 to deliver a set of guidelines for private sector involvement in the RE business. In the PIR YR 23 Information on the Output 1.1.3 mentions that a ToR was produced to request the services of developing biogas standards in cooperation with MIREME. Intended to be completed and presented in October 2023, no information was delivered to the evaluation team.

Although, the TSE4ALLM fulfilled the KPIs of the outputs 1.1.2 & 1.1.3, it should be mentioned that in the case of 1.1.2, the guidelines initially focusing on the private sector involvement in RE business were transformed in a set of tailor-made guidelines considering gender dimension.

While in the case of output 1.1.3 no information has been provided on the adoption of the developed standards for biogas systems.

Overall, the TSE4ALLM project lacks provision of a single instance of strengthening capacity building of RE market players and enablers in relation to the identification and appraisal of RE bankable projects through the COMFAR training that was delivered to personnel of FUNAE, BCI, UEM, ADPP, Ministry of Agriculture and Rural Development and the Ministry of Energy and Mineral Resources.

The partnership with ClimateScience facilitated basic technical training on energy. However, the evaluation team has no information on which sectors nor organizations these 152 people were from, thus could not be directly linked to Component 2.

The TSE4ALLM project provided a financial support to the implementation of technologies for demonstration pilots in rural areas, with ADPP, AFORAMO, CHARIS, MADER and MAKOMANE-ADM. The demonstration projects showed a good level of promoting RE technologies demonstrations in rural area, not without a delay on the payments that generated friction with the service

providers committed by the project implementers, with the exception of ADPP that was co-financing 70% of its implementation.

TSE4ALLM project provided a 100% bank guaranty to the BCI Super Credit Line, allowing the BCI credit line to offer only 7% of interest on the RE system loans, increased to 10% after completion of the project, instead of the usual 25% interest offered by the financial system in Mozambique. The BCI Super Credit Line was built on the previous experience and capacity building provided by KfW to BCI. The BCI Super Credit Line provided 5M USD as co-financing. Not without problems, the BCI had to convince their reluctant investors in the exercise of RE investment and maintain the credibility on the return on investment it will provide. Through this implementation, the financial market has shown interest in developing ER credit systems, with two more banks launching green credit lines in Mozambique, thus supporting an optimal and conducive financial environment for the private sector to invest in RE systems.

Judgement criteria: TSE4ALLM project implementation was efficient

TSE4ALLM project shows mitigated efficiency in its implementation, with some good efficient instances like the demonstration projects and the BCI Super Credit Line, although not without some hiccups as mentioned in the previous criteria.

In relation to the level of efficiency in the communication with the main actors and beneficiaries, the TSE4ALLM showed an adaptable implementation using social media and the project website to transfer motivational results to the population on the benefits and virtues of the RE systems in rural areas.

However, the internal communication between UNIDO Mozambique and UNIDO HQ in the areas of disbursement lacked urgency, and perhaps experience on working with private sector SMEs and the importance of a timely payment. Also, the evaluation team noticed the lack of a systematic reporting to stakeholders, including the SPC, TEC and GoM.

The evaluation team considers that the budget was adapted and coherent with the scale and duration of the activities. However, no economies of scale were used when implementing the project particularly on C3, that it is to say that the demonstration projects missed the possibility to save on material costs by bulk or grouped purchasing of RE system materials.

The TSE4ALLM project was expected to have significant cost-effective potential by collaborating with other international donors working in the renewable energy sector in Mozambique. However, the evaluation team found that there was a lack of comprehensive interaction between the TSE4ALLM project and other international projects, such as the Green People's Energy (GBE), PROSUL, or BRILHO. These projects share similar components but are complementary in the development of renewable energy systems in Mozambique at different levels. Also, there was a missed opportunity to benefit from the training and support developed by these other donor projects. Even when the Power Africa project was implemented in collaboration with UNIDO and ARE, no synergy was established with TSE4ALLM.

Regarding the communication and visibility of the TSE4ALMM implementation, it is clear that the UNIDO team have made significant effort to enhance the communication and visibility of the TSE4ALMM implementation by participating in events organized by other projects and organizations, such as ALER, Climate Science Olympiad 2023, the national Biogas Program, Renpower Mozambique event on 28th April 2022, CAMCO Energy for the implementation of the RISA program, USAID/WASHFIN, Green SME from the World Bank integrated with EL4D, and Energypedia case studies. However, this collaboration only involved presenting the TSE4ALLM project without any further interaction or benefit.

3.5. Sustainability of Benefits

EQ3.5 What are the sustainability prospects of the TSE4ALLM project?

Judgement criteria: TSE4ALLM project results and impact are disseminated and visible for maximum impact and success of the RE Systems supporting the growth of Mozambique
The evaluation team assessed the level of sustainability of the impact generated through the TSE4ALLM project implementation and found that in C3 the sustainability of the demonstration projects and 10 BCI Super Credit Line funded projects have an excellent potential for maintaining the achieved results for as long as the received equipment is maintained and used properly.
The evaluation team considers that, although not always attained, UNIDO Mozambique was constantly focusing in securing a sustained impact from the TSE4ALLM project implementation of the pilot demonstration projects by ADPP, AFORAMO, CHARIS, MAKOMANA-ADM, MADER as well as the BCI founded projects.

3.6. Progress to Impact

EQ 3.6: What is the current direct impact (positive or negative) of the TSE4ALLM project?

Judgement criteria: TSE4ALLM project has reached its planned impact of generating a conducive policy and regulatory environment for the adoption of RE systems, building capacity of the RE market players and enablers (institution and personnel)
<p>The evaluation team assessed the level of impact of the TSE4ALLM project on the Government's capacity to support the RE Systems and found that on the identification and appraisal of bankable RE projects, FUNAE as well as BCI considered that the COMFAR training has been decisive and enhanced their knowledge on project design and selection.</p> <p>Also, the development and presentation of the set of tailor-made guidelines considering gender dimension as well as the development of standards for solar PV and biogas systems have an excellent potential to generate impact in the future, provided they are adopted at institutional level.</p>
<p>The level of impact of the project on financial organizations' support to SMEs and relevant organizations, with the BCI Super Credit Line shows that financing the ER system can be profitable for banks. Two banks announced to be developing credit lines for SMEs at the time of the field visit. This impact would be enhanced by the GoM launching of a US\$120 Million Mutual Guarantee Fund to provide credit lines for small and medium-sized companies, financed by the World Bank under the "More Opportunities" project. This fund follows the trend set by TSE4ALLM project UNIDO guaranty bank in exchange of low interest rates, making interest rates more accessible to micro, small and medium -sized companies operating in the sectors of agriculture, fish farming, agricultural marketing, and processing.</p>
<p>The evaluation team's assessment on the TSE4ALLM contribution to the SDG 7 "Affordable and Clean Energy" is clear through the demonstration projects and the BCI Super Credit line financed projects, with special emphasis on irrigation, water consumption and food processing.</p> <p>Through the implementation of the RE systems there has been an integration between the agriculture and services sector providing technology solutions for environmentally sustainable development, increased low carbon production and promoting circular economies, thus contributing to the SDG 9 Industry Innovation and infrastructure.</p>

The TSE4ALLM project implementation of demonstration projects have promoted reduction of waste and pollution and green industries with the solar PV and biogas systems contributing to the SDG 12 “Responsible consumption and production”.

The solar PV and biogas systems implemented by the TSE4ALLM project is contributing to the reduction of CO2 production and other GHG emissions thus supporting the achievement of SDG 13 Climate action.

3.7. Gender Mainstreaming

EQ4: To what extent has the TSE4ALLM implementation contributed to better gender equality?

Judgement criteria: TSE4ALLM project has contributed to mainstreaming gender equality and gender inclusion in its implementation

The evaluation team carefully assessed the gender inclusion in the activities implemented in the framework of the TSE4ALLM project, and there have been no specific inclusion requirements in the implementation of the KPIs except for assigning a gender marker to three specific outputs. TSE4ALLM design reflected partially the UNIDO Strategy of Gender Equality and the Empowerment of Women (2020-2023)¹⁴ as it complied with criteria 4 of the UNIDO Gender Compliance and Marker Form¹⁵ by requesting at least 40% of the task force participants to be female in Output 1.1.1, and 40% of the government officials needed to be female in output 2.1.1., and 40% of universities and vocational training institutions staff needed to be female. While output 2.1.2 requested that 20% of the financial institution participants to be female. These indicators are reported to have been achieved in the PIRs and Annual Reports, but not all list of participants were provided to the evaluation team, nor the full gender disaggregated data on the participants and beneficiaries of the Demonstration pilots or the BCI funded projects with only ADPP providing this information systematically.

The TSE4ALLM project is generating some impact with a gender dimension, but is not always visible, nor clearly monitored, or communicated. This finding can be seen in the number of women participants in the demonstration projects, which has however not been properly reported. Overall, neither the exact number of female participants, nor gender disaggregated data was provided in the Annual reports or the PIRs.

Overall, the TSE4ALLM have a Sensitive rating (minimal compliance) on the Gender Equality and Social Inclusion (GESI) Framework. Thus, the TSE4ALLM has included an assessment to meet practical needs and vulnerabilities of women within the demonstration projects, such as the Private Sector Consultation Campaign Report and a mentioned draft of set of tailor guidelines considering gender dimension generated for the output 1.1.2., which was never completed, nor presented for consultation in a workshop.

In relation to the number of women that participated in the training and that were entrepreneurs implementing pilot demonstration projects, very little gender disaggregated data was provided. The evaluation team has identified a strong participation of women is mentioned on the demonstration projects, but it could be the result of the composition of the project implementers, like in the case of ADPP which implemented a Farmer’s Club program that has 50% female members, and achieved to benefit 4,000 small scale farmers (55% female). There is also the case of MAKOMANE-ADM, a non-profit community-based organization with 152 members (46.7% female) that has a one of its objectives to promote human rights for women. In the case of CHARIS most of the cooperatives benefiting from the TSE4ALLM implementation

¹⁴ UNIDO’s Strategy for Gender Equality and Empowerment of Women (2020-2023) committed to increase the annual ratio of newly approved projects that at least significantly contribute to gender equality and the empowerment of women to 4 by 2023.

¹⁵ The results framework (i.e. log frame, theory of change, Bennett Hierarchy) includes gender specific indicators, baselines and targets to track outcomes/impact.

are women cooperatives (however, due to cultural norms and illiteracy of the female members, male presidents were elected across several women cooperatives, and the biodigester installations were not necessary for the women benefits).

3.8. Environmental Impacts

EQ7.1: What has been the TSE4ALLM project's level of environmental safeguards?

Judgement criteria: TSE4ALLM project has built and maintained a good level of environmental safeguards

The evaluation team put particular attention to the threats emanating from the TSE4ALLM project implementation in the environment, particularly on component 3 with the demonstration projects and the BCI Super credit line.

The evaluation team has identified positive changes in the status of the environment due to the TSE4ALLM's pilot projects and BCI Credit line funded projects. The project enhanced the learning and public awareness raising that "waste" has a use and can be re-used, while still covering only a limited spectrum of animal-generated waste. However, the concept of circular economy is enhanced and a first sensitization towards environmental standards has been achieved.

The evaluation team identified positive income generation on sustainable energy management for communities, businesses and enterprises due to the TSE4ALLM's pilot implementations.

3.9. Human Rights

EQ7.2: What has been the TSE4ALLM project's level of social safeguards?

Judgement criteria: TSE4ALLM project has built and maintained a good level of social safeguards, including disability and human rights

On the basis that democratic states should establish and maintain substantive environmental standards that are non-discriminatory, non-retrogressive and otherwise respect, protect and fulfil human rights, the TSE4ALLM project human rights approach was based on the mobilization of existing human rights such as the human right to water, the human right of clean and healthy environment, women rights, the right to education.

The TSE4ALLM projects applies 3 out of 5 key human rights principles such as participation, non-discrimination and equality, and empowerment in the implementation of its components, particularly in C3. The design and implementation were performed by the local implementers who explicitly supported the participation of women associations/cooperatives or entrepreneurial individual women as role models in the area as direct beneficiaries. There is no mention of other vulnerable groups.

3.10. Performance of Partners

EQ6: What has been the TSE4ALLM project's partners level of performance?

Judgement criteria: TSE4ALLM project's partners had fulfilled their assigned role and responsibilities in the implementation of the project

<p>UNIDO's performance as coordinator and implementing organization showed adaptability though its level was mitigated with some components showing a superior performance and others a low performance.</p>
<p>The Mozambique National Energy Fund (FUNAE) as partner of the BCI Super credit line has received training and built its capacity to carry out the support and ownership of the Guarantee Fund upon completions of the Project. FUNAE has been chair of the Technical Evaluation Committee. However, FUNAE role as the chair of the funds appears to have been passive, with poor understanding on the use and purpose of the Guarantee Fund, as several requests of transferring the guaranty fund to FUNAE were made. Thus, reflecting FUNAE's need to build its institutional capacity.</p>
<p>The Ministry of Agriculture and Rural Development (MADER) successfully completed its committed support and exceeded in backing the QUINTA IRINI project with success. The proactivity of MADER through its representatives, reflected the importance of RE systems to the GoM. Within the framework of the implementation management, control visits, supervision of the works and monitoring of the testing process of the installed equipment were carried out, together with the development of an indicators framework to serve as basis for evaluating the impact of this initiative, as well as the lessons learned in the implementation of the project.</p> <p>At the DNDEL level, a high-level team was created, led by the National Director, responsible for strategic management. This team is supported by a Coordination Committee, chaired by the DNDEL, in which, in addition to the DNDEL, UNIDO, the Quinta IRINI and the Eduardo Mondlane University participate. The project serves as pilot demonstration hub within MADER and aside of serving as demonstration locally in the South, the design of replications in other parts of the country had already initiated at the time of the field mission, fulfilling the desired promotion and dissemination side of the demonstration projects.</p>
<p>The Ministry of Mineral Resources and Energy (MIREME) showed a good performance in supporting specific outputs of the TSE4ALLM, in particular on output 1.1.3 Standards for typical integrated renewable energy systems for rural areas developed and adopted.</p>
<p>The Ministry of Land and Environment (MITA) was the counterpart of the technical assistance for the demonstration projects; more information needs to be provided about the involvement of MITA in the demonstration projects.</p>
<p>The Commercial and Investment Bank (BCI) as co-financing and implementing the BCI Super Credit Line, showed a good performance in the selection of 10 RE bankable projects and monitoring on their investment. The return of investment for BCI is good and it has optimally built its knowledge and investment capacity and experience, as well as convinced its investors on the growing capability of investing in RE systems with SMEs.</p>
<p>ADPP partnered with UNIDO in the promotion of renewable energy systems, mainly photovoltaic irrigation systems, in Tete, Zambezia and Sofala. These systems targeted rural horticulture communities, which in the past used traditional irrigation methods. The adoption of photovoltaic systems improved the productivity of small-scale farmers, as they were able to irrigate larger areas of their cultivated land. Some coordinators and small farmers who used to rely on diesel to power their pumps switched to solar-powered pumps, thus reducing the costs of purchasing diesel and repairs.</p> <p>ADPP is part of the Technical Evaluation Committee together with other partners such as FUNAE, BCI, MIREME, MADER and UEM.</p> <p>ADPP implementation provide a superior performance achieving all its KPIs with the installation of 80 solar powered water pumping systems, generating a 28.4 kW capacity distributed as follows: farmer clubs in Sofala and Zambezia Provinces 8.08kW, farmer's clubs in</p>

<p>Sofala Province 16,72kW, and producer's clubs in Tete Province 3.6kW. ADPP implemented projects irrigated 31 hectares and it is benefiting 4,000 people (55% female).</p>
<p>The University of Eduardo Mondlane has played an important role in the implementation of the TSE4ALLM. On the one hand as partner and academia in supporting technical in the development of the TSE4ALLM Cluster and on the technical installation of the Biogas systems on the demonstration projects, with Professor Antonio José Cumbane and Professor Adolfo Condo leading the quality of the installations of several implementers.</p>
<p>The National Association of Rural Water Suppliers (AFORAMO) which aimed to install a total capacity of 63kW in water supply systems with initially 12 sites that were reduced to 9 but keeping the 63kW total capacity. AFORAMO has been an extremely proactive implementer, adapting and modifying according to the needs of the 9 members selected to benefit from the TSE4ALLM demonstration project that was 60% financed by UNIDIO and 40% co-financed by AFORAMO. The 9 beneficiaries have shown an excellent commitment, including advancing the amounts necessary to keep the implementation going when UNIDO HQ disbursements weren't available.</p>
<p>MAKOMANE-ADM is a non-profit community-based organization with administrative, financial and patrimonial autonomy. Its vision is to have a socio-culturally and economically developed rural community, while its mission is to collectively mobilize resources to create lasting solutions for the eradication of poverty. The main objective: to promote the socio-economic and cultural development of the community, intervening in various areas, including environment, income generation, human rights of women and children, tourism, education.</p> <p>During the TSE4ALLM implementation, MAKOMANE has cultivated strong and solid coordination relations with governmental structures and various institutions and civil society organizations, so as to extend the benefits and upscaling the RE systems. Its performance in implementing the TSE4ALLM is considered by the district administrator as the district's business card and shows the government support by the number and level of visits the GoM has made to the implementing site.</p>
<p>CHARIS - the Social Solidarity Association, is an NGO aiming to help the most disadvantaged which are girls and women. For their biogas digester project, they but did not have inhouse technical know-how so they outsourced the technical part to UEM which joined a team of students, technical experts and researchers for setting up the biodigester technology, using it also for research purposes linked to the UEM.</p>

3.11. Results-Based Management

EQ 5.1: What is the overall level of result-based-management used in work planning and decision making of the TSE4ALLM project?

<p>Judgement criteria: TSE4ALLM project has used the result-based approach to carry out its work planning and decision-making process</p>
<p>The evaluation team carefully assessed if a result-based approach was used on the work planning and the decision-making process during the implementation of the TSE4ALLM. Overall, there seem to have been very little use of a result-based approach in the work planning, the decision-making process and project management during the implementation. There is no sign of having used a strategy on how to better achieve the TSE4ALLM objectives and goals. The implementation process has rather been driven by the exiting political and economic context.</p>

3.12. Monitoring & Reporting

EQ 5.2: What has been the overall level of use (positive or negative) of the TSE4ALLM project monitoring information?

Judgement criteria: TSE4ALLM project monitoring information has been used in a proactive and diligent way to improve performance and inform stakeholders
<p>The evaluation team did not identify an existing continuous monitoring process on the progress achieved through the TSE4ALLM's activities, but rather a weak progress monitoring driven by the need to provide information for reporting.</p> <p>In the case of Component 1, the information on the government's willingness and intention to adapt the Energy legislation, was a missed opportunity given the support and knowledge needed by the GoM, UNIDO could have provided key technical support as the BRILHO project did to ARENE, by having offered to finance experts to support the government on the policy analysis, including the private sector.</p> <p>In C1, the need to continuously support and drive the performance of the government partners, as mentioned in MTR recommendation 1, remained unsolved due to a clear absence of leadership. As for MTR recommendation 8, the development of standards and dissemination were completed. In the case of C2, despite the MTR recommending the need to expedite the action plan for the 5 created UEM working groups, no activity was completed, nor were there any training actions on renewable energies and building sustainability of subsequent actions to promote market-based dissemination of integrated renewable energy systems for productive activities in rural areas.</p> <p>Also, the evaluation team could not find any assessment of the demonstration projects (C3) in their implementation process, nor in the training of the beneficiaries in the use of the RE systems installed except for the Inception and 1st progress reports.</p> <p>The contracts between UNIDO and the implementers specified a section named Monitoring Reports, which mentions the need to have 4 monitoring reports for the period of implementation and following the development of the contracted systems with its total capacity of solar PV systems' rural locations in Mozambique. Nevertheless, of the 4 monitoring reports only the inception report and the 1st progress report have been provided to the evaluation team. MTR recommendation no. 12, which encourages joint monitoring, was not implemented. This recommendation involved the country project manager conducting monthly visits to the focal points in the field, as well as increasing the number of technical meetings to identify the existing technical needs</p>
<p>Very little was done to use the progress information and monitoring as a source to improve the performance of the project's implementation. The MTR recommendations (13 in total) were only partially implemented with only two recommendations fully implemented. The analysis of the information and the selection of the mitigation actions were rather slow and not at all proactive. Clearly there was no connection to the existing knowledge level on the country and the project implementing capacity.</p>
<p>There is not clear mention of any information recording method used to gather and monitor the different actions.</p>
<p>Basic communication was established with the stakeholders that seem to have been more on the need-to-know basis than a continuous information flow on the implementation progress and collaboration.</p>

4. Conclusions and Recommendations

Based on the evaluation team findings and the understanding of the country context the following are the conclusions and recommendations for the TSE4ALLM project.

4.1. Conclusions

The conclusions presented in this terminal evaluation summarize the findings, providing an explanation of what has worked well and what could be improved.

- 1. Project design:** The TSE4ALLM project design was extremely pertinent in its Components, Outcomes and Outputs. The TSE4ALLM's components interrelation provided a great opportunity to have a reliant structure that builds upon each other to function effectively and that work together to achieve the overall goal of the TSE4ALLM project of "supporting the market-based adoption of integrated renewable energy systems (solar PV for irrigation/water extraction and waste-to-energy) in small to medium-scale farms and rural agro-food processing industries in Mozambique".
- 2. Project implementation:** The quality of the TSE4ALLM project implementation varies for each component. The TSE4ALLM project's initial period of implementation coincided with a time when the policies and action plans on renewable energy and the involvement of the private sector did not provide the appropriate means to incentivize the private sector participation in energy generation to cover productive activities in rural areas. This context has been considered a limitation for implementing components 1 and 2. During the project implementation period, the Government of Mozambique (GoM) was updating and modifying its national Energy policy. This process culminated with the update of the Electricity Law in July 2022 and the Regulation of Energy Access in Off-grid Areas (24th January 2022). During the updating process of the legislation, the GoM did not invite UNIDO as an advisor. On the other hand, UNIDO did not offer any technical support either, while other projects worked out their way to be involved as advisors like the BRILHO Energy Africa project through the Regulator authority. Also, UNIDO's participation in the energy sector stakeholders working group seems to have been limited, which has been a lost opportunity to strengthen UNIDO's position in the RE sector in Mozambique considering this multi-stakeholder energy sector working group, which is mainly intended to coordinate all donor activities in the RE sector in Mozambique. The TSE4ALLM implementation was delayed due to COVID-19 and later by the IDAI and Kenneth cyclones that afflicted the country, but also by the UNIDO internal restructuring process that has generated constant delays on the disbursement and development of contracts, sometimes even implying the complete closure of activities (TSE4ALLM Clusters under C2) and missing opportunities of financing demonstration projects, as well as a high turnover of leadership with four different project managers. A more consistent and coherent implementation would have profited from the momentum created by the country context focusing on RE.
- 3. Project results:** The TSE4ALLM project has supported and built the capacity of key energy actors at the decision-making level, as well as in the SME sector and academia. This support has focused on the identification and appraisal of bankable renewable energy projects and emphasized the importance of renewable and sustainable energy. One of the project's main initiatives was implementing the BCI Super Credit Line in close cooperation with the local commercial bank BCI and key stakeholders participating in the TEC and the SPC. Other significant achievements of the TSE4ALLM project include demonstration projects that have facilitated the use of solar PV systems among private sector actors, pioneering work on introducing biogas systems, and promoting accessible renewable energy systems to SMEs, farmer clubs, associations, and cooperatives in rural areas.

4.2. Recommendations and Management Response

The following recommendations are targeting the main issues encountered in the TSE4ALLM project implementation:

#	Recommendation	Management Response	Responsible Entity	Target Date
1.	Strengthen the communication between project management at HQ, project team in the field, and UNIDO field office.	Acceptance: The management team will incorporate the use of collaborative tools, regular updates and meetings, clear communication protocols, regular reporting, feedback mechanisms, dedicated communication officers, documentation, and knowledge sharing.	UNIDO Project Manager in consultation with: -Project team in the field and -UNIDO Country Representative in MOZAMBIQUE	1 September 2024
2.	It is recommended to develop a clear plan to leverage and expand upon the successful outcomes of the project by, e.g.: <ul style="list-style-type: none"> ○ Actively pursuing opportunities for replication and scaling-up through formalizing initiatives to engage the private sector. ○ Promoting Calls for Proposals, and ○ Increasing the awareness among Mozambique's enterprises about the benefits of training, forming new partnerships, and optimizing their utilization of renewable energy (RE) systems in small businesses. 	Acceptance: The management team will develop a comprehensive plan to leverage and expand upon the project's successful outcomes by engaging the private sector and donors for replication and follow-up project development.	UNIDO Project Manager in consultation with responsible(s) within: - Ministry of Land, Environment and Rural Development and - UNIDO Country Representative in MOZAMBIQUE	1 September 2024

			- Other Partners such as UN country team	
3.	Further enhance the capacity of the FUNAE team and make use of partnerships with experienced key experts/organizations to support FUNAE technically.	Acceptance: The management team will focus on enhancing the FUNAE team's capacity in future cooperation by integrating capacity-building activities and forming partnerships with experienced experts and organizations to provide technical support.	UNIDO Project Manager and UCR in consultation with responsible(s) within: - FUNAE & Government of Mozambique (MoE)	As and when a follow up project is ready and funded
4.	Renewable Energy is a priority for the GoM. Therefore, it is recommended that a study is done on the benefits of having a reduction of import duties/tariff for SMEs, Cooperatives, and Associations.	Acceptance: Linked to the MR #2, the project team will incorporate conducting a study on the benefits of reducing import duties and tariffs for SMEs, cooperatives, and associations involved in renewable energy within the plan to leverage and expand upon the successful outcomes of the project, as part of the follow-up project.	UNIDO Project Manager and UCR In consultation with responsible(s) within: - Government of Mozambique	As and when a follow-up project is ready
5.	It is recommended to design and conduct training(s) of beneficiaries in the proper use of RE equipment and its maintenance.	Acceptance: Linked to the MR #2, the project team will incorporate the design and implementation of training programmes for beneficiaries on the proper use and maintenance of renewable energy equipment as part of the follow-up project.	UNIDO Project Manager in consultation with responsible(s) within:	As and when a follow-up project is ready

			- Government of Mozambique	
6.	Develop a technical energy educational programme to build the technical capacity at VET level.	Acceptance: Linked to the MR #2, the project team will incorporate technical energy educational program aimed at building technical capacity at the VET level as part of the follow-up project.	UNIDO Project Manager in consultation with responsible(s) within: - Government of Mozambique	When a follow-up project is ready
7.	It is highly recommended that local implementers (demonstration projects) carefully listen to the beneficiaries' requests and understand their needs and constraints, to be able to assess their real energetic needs and provide an adequate technical solution with RE systems, taking also into consideration available processing machinery and lightning.	Acceptance: The management team will coordinate closely with local implementers and their beneficiaries to ensure that the needs of the beneficiaries and constraints are taken into consideration. A strategy will be developed to enable assessing the acceptance level of the beneficiary for the services provided by the local implementers.	UNIDO Project Manager & UCR in consultation with responsible(s) within: - Government of Mozambique and - CHARIS (CHARIS MINISTRIES four stories of transformation)	1 March 2025

5. Lessons Learned

The lessons learned are based on the findings and evidence presented in the different reports.

5.1. Lessons Learned in the Demonstration Projects

The TSE4ALLM project in its demonstration projects has encountered several challenges that led to the following lessons learned:

1. Community:

One of the big challenges of implementing solar power irrigation systems in the rural areas is the sustainability of all operation. To achieve this sustainability, it is necessary that the beneficiaries should be grouped (clubs, associations, or others) and coordinated to promote synergies, facilitate trainings and solve common issues more efficiently. Trainings in sustainable agriculture techniques to improve production and secure necessary income to acquire what they cannot produce. The advantage of creating a community is the collective consciousness amongst the members that have an impact on the security and safety of the RE systems against theft as there is a common interest of protecting the RE system. As the saying goes: “There is strength in numbers, yes, but even more so in collective good will. For those endeavors are supported by mighty forces unseen.”

2. RE System Maintenance:

It is important to maintain the equipment received. Thus, one of the first things to do is to train beneficiaries in maintaining the systems and save for repairs. If this is done collectively such as in a credit group for maintenance of the systems and new investments, it will secure the sustainability of the equipment and benefits of a long-term use of the RE systems.

3. Good Equipment Suppliers:

It is important when buying the RE equipment that the chosen supplier is capable of providing training to committees and beneficiaries not only in the use but also on the maintenance of the RE systems, and that the supplier is capable of providing spare parts. The beneficiaries/users of the RE Systems need to have a direct contact with the suppliers and develop a client and service provider relationship to allow independent management of the RE systems.

4. Flexibility of defining location for RE system installations

Some of the planned areas did not have the required water capacity, thus new locations needed to be found or either smaller RE systems installed.

5.2. Lessons learned from Stakeholders

The TSE4ALLM project stakeholders’ lesson learned during the implementation of the project:

5. Opportunity to contribute.

Current implementation structures do not sufficiently allow UNIDO staff to “make their best contribution” by finding ways to make more focus on innovation, learning and knowledge sharing. Mediated actions and solutions were proposed by UNIDO Mozambique staff, but slowly followed or ruled out by UNIDO HQ.

6. Communication amongst Project Implementers

The 5 projects implementers ADPP, AFORAMO, CHARIS, MADER and MAKOMANE-ADM did not have means to communicate on the different challenges and solutions they faced in implementing their projects, particularly on the technical installations and type of equipment. This lack of knowledge sharing has generated frustration and delays in the technical part by having to use a trial-and-error approach on the selection of the equipment when they could

have benefited from the experience of ADPP in the selection of the solar PV, while the installation of the biodigesters also underwent a trial-and-error phase while MADER's choice of technical advice and installation was experienced. There is a need to have a technical committee or board exchanging this information to ease and smooth the future RE implementation.

7. Communication between evaluation committees

The selection process of RE bankable proposals requires a close collaboration and flow communication between the financial selection committee and the technical selection committee. Initially there was communication between the TEC and BCI, which was later no continued, and that corresponds to the quality of the proposals presented to BCI.

5.3. The Project Administrative Implementation

8. Administrative decision- making processes.

The TSE4ALLM project's effectiveness and efficiency were negatively impacted by significant delays due to various reasons. One of them could be seen as a necessary learning for similar future similar projects, or this project's continuation: the important weight of the UNIDO's administrative decision-making process needs to be simplified and optimized, as it was identified as a repeated constraint that slowed down the project implementation. It is highly understandable that a project with major restructuring of its implementing agency (UNIDO) required several levels of approval. However, it is crucial that these processes are simplified in the future to allow for fast-tracking of the implementation. The Evaluation team wants to stress that such circumstances could have put a halt to the project implementation with a less flexible or experienced local management team.

9. Use of relevant training material developed by other UNIDO projects.

In the TSE4ALLM project's Component 2: Capacity building and knowledge management, the idea to benefit from the training developed for another UNIDO project with the same language (Portuguese) show great effectiveness and added value. The Cabo Verde project "Sustainable energy access to manage water resources: Addressing the Energy-Water Nexus" (August 2017-August 2024), output 2, in particular the technical training material on RE EE, was extremely pertinent to the TSE4ALLM C2. This type of interaction and collaboration between projects on the same sector across countries should be encouraged and requested, as technical collaboration and trainings are key to the development of RE systems. However, the possible delays on project implementation should be considered as risk and it would be advisable to consider training material that has already been developed and used for this collaboration.

10. Use of monitoring and follow up process on implementing activities.

The evaluation team has identified the critical need for improving the monitoring and follow-up processes of implemented activities. This enhancement is essential for ensuring UNIDO's performance transparency. Moreover, having a comprehensive monitoring and follow-up process is crucial for identifying and correcting unforeseen challenges and contingencies that were not anticipated during the project design phase. This proactive approach will allow UNIDO to address issues promptly and adapt strategies as needed, ensuring the project stays on track and achieves its intended outcomes.

6. Annexes

6.1. Annex 1: Evaluation terms of Reference



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE

Independent terminal evaluation of project

Towards sustainable energy for all in Mozambique: Promoting market-based dissemination of integrated renewable energy systems for productive activities in rural areas

**UNIDO ID: 150263
GEF Project ID: 9225**

May 2023

Contents

I. PROJECT BACKGROUND AND CONTEXT	51
1. PROJECT FACTSHEET	51
2. PROJECT CONTEXT	52
3. PROJECT OBJECTIVE AND EXPECTED OUTCOMES	53
4. PROJECT IMPLEMENTATION ARRANGEMENTS	53
5. MAIN FINDINGS OF THE MID-TERM REVIEW (MTR)	54
6. BUDGET INFORMATION.....	58
II. SCOPE AND PURPOSE OF THE EVALUATION	61
III.EVALUATION APPROACH AND METHODOLOGY	61
1. DATA COLLECTION METHODS	62
2. EVALUATION KEY QUESTIONS AND CRITERIA	62
3. RATING SYSTEM	64
IV. EVALUATION PROCESS.....	65
V.TIME SCHEDULE AND DELIVERABLES	65
VI.EVALUATION TEAM COMPOSITION.....	66
VII.REPORTING	66
VIII. QUALITY ASSURANCE	67
1. ANNEX 1: PROJECT LOGICAL FRAMEWORK	68
2. ANNEX 2: DETAILED QUESTIONS TO ASSESS EVALUATION CRITERIA: SEE ANNEX 2 OF THE UNIDO	74
3. ANNEX 3: JOB DESCRIPTIONS	75
4. ANNEX 4: OUTLINE OF AN IN-DEPTH PROJECT EVALUATION REPORT	83
5. ANNEX 5: CHECKLIST ON EVALUATION REPORT QUALITY	85
6. ANNEX 6: GUIDANCE ON INTEGRATING GENDER IN EVALUATIONS OF UNIDO PROJECTS AND PROJECTS.....	87

I. Project Background and context

1. PROJECT FACTSHEET¹⁶

Project title	Towards sustainable energy for all in Mozambique: Promoting market-based dissemination of integrated renewable energy systems for productive activities in rural areas
UNIDO ID	150263
GEF Project ID	9225
Region	Africa
Country(ies)	Mozambique
Project donor(s)	GEF
Project implementation start date	26 October, 2015
Expected duration	48 months
Expected implementation end date	24 October, 2023
GEF Focal Areas and Operational Project	GEF-6: Climate Change
Implementing agency(ies)	UNIDO
Government coordinating agency	Ministry of Land, Environment and Rural Development (MITADER)
Executing Partners	<ul style="list-style-type: none"> • Ministry of Land, Environment and Rural Development (MITADER); • Ministry of Energy and Mines Resources (MIREME); • Ministry of Agriculture and Food Security (MASA); • Ministry of Education and Human Development (MEC); • National Sustainable Development Fund (FNDS); • Energy Fund (FUNAE); and • SADC Centre for Renewable Energy and Energy Efficiency (SACREEE).
UNIDO RBM code	IC32 Clean energy access
Donor funding	USD 2,851,384
Project GEF CEO endorsement / approval date	18 July, 2017
UNIDO input	USD 60,000 (Grants), USD 140,000 (In-kind)
Co-financing at CEO Endorsement, as applicable	USD 11,284,997
Total project cost (USD), excluding support costs and PPG	USD 14,136,381
Mid-term review date	May – July 2021

¹⁶ Data to be validated by the Consultant

(Source: Project document)

2. PROJECT CONTEXT

In Mozambique, the rural electrification rate reached only 27% as the extension of electricity grids has proven to be technically difficult, very costly and sometimes an inefficient solution due to the remoteness and sparse population density. The agricultural sector -one of the most important sectors of the economy- faces serious challenges in accessing electricity and other forms of modern energy forcing it to rely on expensive diesel, firewood and/or charcoal for its operations. Even though it has been estimated that Mozambique has a potential of 7 GW on renewable projects, the use of modern energy for productive uses is still very limited. As such, the United Nations Industrial Development Organization (UNIDO) – as an implementing agency of the Global Environment Facility (GEF) – and the Government of Mozambique are implementing the project “Towards sustainable energy for all in Mozambique: Promoting market-based dissemination of integrated renewable energy systems for productive activities in rural areas” which seeks – among other outcomes – to demonstrate the technical feasibility and commercial viability of renewables in productive sectors including agriculture and agro-food processing industries.

The project is aligned with the GEF Focal area strategy of Climate Change-1 (CCM-1) Program 1 through the promotion of renewable energy integrated systems such as solar PV and biomass usage for energy generation displaces the use of carbon-intensive fuels (e.g., diesel generators), thus contributing to the reduction of GHG emissions and benefiting the development of a low-emission development path.

The Project consists of four (4) components, as listed below:

- **Component 1:** Establishment of a conducive policy and regulatory environment. The activities to be undertaken under Component 1 are intended to enhance the regulatory and policy environment to promote the involvement of the private sector in developing integrated RE systems for rural areas. Besides, Component 1 will create institutional capacity in the local counterparts to guarantee that the activities continue once the Project is closed.
- **Component 2:** Capacity building and knowledge management. Component 2 aims at improving and developing the capabilities and knowledge of market players and enablers in the RE sector
- **Component 3:** Technology Demonstration and scaling up. The activities to be undertaken under Component 3 aim at demonstrating the application of RE technologies in agricultural activities located in rural areas of Mozambique, namely: solar PV water pumping and biogas/biomass usage in agro-food processing industries
- **Component 4:** Monitoring and Evaluation. The objectives of this component are to (a) establish and conduct adequate and systematic M&E and reporting of all project indicators following UNIDO and GEF procedures to ensure successful project implementation; (b) establish a dedicated website for the Project; and (c) ensure

that the dissemination programme is implemented and project milestones/reports etc., are regularly posted on the website

The project was approved on 18 July 2017, with a total funding of USD 2,851,384. The original end date of the project was 26 October 2021 before it was extended one year twice, ending on 24 October 2023. The project aimed to carry out a series of components and activities to lead the market-based adoption of integrated renewable energy systems (solar PV for irrigation and waste-to-energy) in small to medium-scale farms and rural agro-food processing industries in Mozambique

The main counterpart was the Ministry of Land, Environmental and Rural Development (MITADER); Ministry of Energy and Mines Resources (MIREME); Ministry of Agriculture and Food Security (MASA), Ministry of Education and Human Development (MEC), National Sustainable Development Fund (FNDS), Energy Fund (FUNAE), and SADC Centre for Renewable Energy and Energy Efficiency (SACREEE). The Project's Mid-Term Review (MTR) was carried out between May and July 2021.

3. PROJECT OBJECTIVE AND EXPECTED OUTCOMES

The project objective is to promote market-based dissemination of integrated renewable energy systems for productive uses in rural areas of Mozambique, focusing on solar PV and Waste-to-Energy solutions in small to medium-scale farms and agro-food processing facilities. The project seeks to act as a trigger for demonstration and rapid replication in integrating RE technology and promoting these technologies in small and medium-scale businesses, particularly in rural areas. The project aims to overcome policy, technology, operation and financial benefits to achieve greater cost-effective RE project deployment.

Expected Outcomes:

Components	Expected Outcomes
Component 1: Establishment of a conducive policy and Regulatory environment	<ul style="list-style-type: none"> • Policy and regulatory environment promoting integrated renewable energy systems in rural areas established
Component 2: Capacity building and knowledge management	<ul style="list-style-type: none"> • Capacity of key players strengthened and information available for market enablers and players
Component 3: Technology Demonstration and scaling up	<ul style="list-style-type: none"> • Integrated RE systems demonstrated • Investments in integrated RE Systems scaled up • Increased confidence and awareness of technical feasibility and commercial viability of integrated RE systems
Component 4: Monitoring and Evaluation	<ul style="list-style-type: none"> • Project progress towards objectives continuously monitored and evaluated

4. PROJECT IMPLEMENTATION ARRANGEMENTS

UNIDO employed a National Project Coordinator (NPC). In collaboration with the Project Manager who is responsible for the project at UNIDO HQs, the NPC is responsible for the overall coordination of the project, including (i) coordinating the project activities with the

stakeholders; (ii) certifying that the expenditures are line with approved budgets and work-plans; (iii) facilitating, monitoring, and reporting on the procurement of inputs and delivery of outputs; and (v) reporting to UNIDO on project delivery and impact.

Additionally, a PSC was established at the inception of the project to monitor the project's progress, guide its execution, and support the project in achieving its listed outputs and outcomes. The PSC consists of representatives from the Ministerial directorates (MITADER, MIREME, MASA, MEC, FNDS, FUNAE, UEM, and UNIDO). The PSC is chaired by FUNAE, which is responsible for coordinating the efforts of all government bodies involved to achieve the project's objective. The PSC responsibilities include (a) revision and approval of annual work plans and budgets; (b) revision and approval of annual GEF reporting; (c) revision and approval of project amendments in accordance with the GEF Council Document C.39/Inf.3; and (d) provide guidance on strategic issues and activities, as per approved project document.

The project management structure as designed is provided in **Error! Reference source not found..**

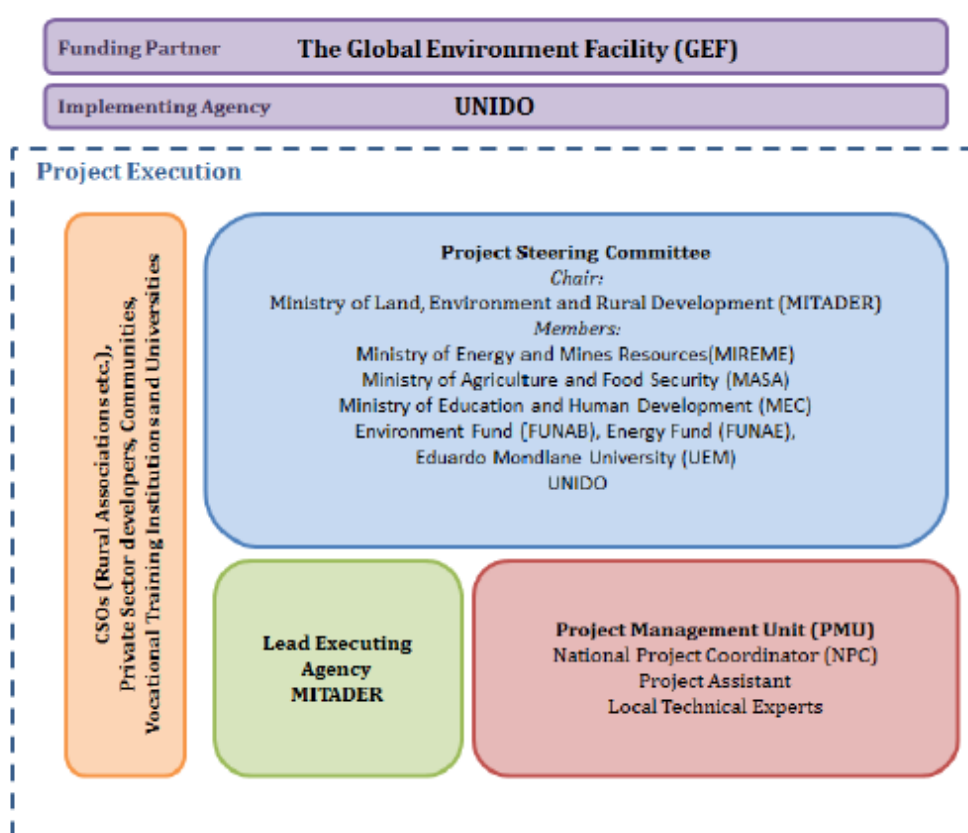


Figure 1: Project implementation arrangements

5. MAIN FINDINGS OF THE MID-TERM REVIEW (MTR)

The findings of the Mid-Term Review (MTR) are as follows:

Financial Implementation: Until June 30, 2021, according to the contracts signed in the Project under the heading on Technologies Demonstration and Scaling up, US\$ 453,254 of US\$ 2,227,340 was used; however, they remain available, although already partially committed for activities.

Project Management: Within UNIDO, responsibilities were focused in one UNIDO department at UNIDO HQs under the Project Manager. At the national level of in-country project management, UNIDO has employed a National Project Coordinator (NPC), where the

NPC is responsible for the overall coordination of the project, including (i) coordinating the project activities with the stakeholders; (ii) certifying that the expenditures are in line with approved budgets and work-plans; (iii) facilitating, monitoring, and reporting on the procurement of inputs and delivery of outputs; and (v) reporting to UNIDO on project delivery and impact.

Assessment against the MTR criteria:

Relevance: The Project is highly relevant for all the stakeholders and beneficiaries. It is considered relevant by all stakeholders as it aligns with the Country's objectives. It is also relevant to national and international policies, UNIDO, and the donor. The Project was well harmonized with interventions of other donors and well aligned with the priorities of the Government of Mozambique and the local counterparts.

Ownership: the level of the government of Mozambique's ownership of the project was inadequate. The interviewees also mentioned that the leading counterpart changed from MITADER to FUNAE during the project implementation. The initial beneficiaries of the project have carried out part of the initiative and presented concrete results but dropped out during the initial phase because of the co-financing conditions. There were also changes in the access and modality of financing changes in the North and Center zones of intervention influenced by movements due to the cyclone, imposing the displacement of populations.

Efficiency: The reviewer was unable to undertake a detailed analysis of the financial efficiency of the project because the UNIDO accounting system does not allow disaggregation of financial disbursement by outputs. Other challenges indicated are linked to bureaucracy at the beginning of the project, customs fees for importing equipment that is not favorable, low rate of development of RES at the local level, and limited understanding of the subject of RE.

Effectiveness: the reviewer considers that there are opportunities that should be taken into account to achieve the intended results, such as the approval of legislation for projects outside the national electricity grid that is being prepared, which will improve the investment environment for RE projects. In the ADPP project implementation phase in Zambezia and Sofala provinces, some of the sources of water weren't delivering enough water to correspond to the capacity of the bigger solar systems; for this reason, were tailor-designed smaller solar water pumping systems, which corresponded to the water capacity. As most small-scale farmers live in remote smaller communities, smaller decentralized solar-powered irrigation systems will be needed. A holistic approach needs to be introduced, enabling the farmers to build resilience to climate change, with the introduction of nature-friendly agriculture production methods which capture CO2 in the soil, agroforestry systems, rain water harvesting systems, decentralized solar-powered irrigation systems, organization of the farmers, access to markets and credit.

Impact: Because the project will still be ongoing and has not yet achieved its immediate objectives, it is unlikely to produce the expected long-term effect on the implementation of the project "Towards sustainable energy for all in Mozambique: Promoting market-based dissemination of integrated renewable energy systems for productive activities in rural areas.

Sustainability: Sustainability is a measure of the ability of the stakeholders to achieve and maintain developmental objectives after the end of the project. Since the project is still in progress with delay in meeting any of its objectives or adjusting the goals during the project period, the reviewer considers that at this stage, one cannot talk about sustainability while the country still has challenges related to exchange rates, strict banking rules, including the sanctions that the government still goes through due to hidden debts.

Summary of Recommendations

The recommendation is divided into three sections: Recommendation directed to UNIDO, the Government of Mozambique, and the donor.

Key Recommendations to UNIDO:

1. A need to clarify the process of evaluation and selection of competitors that, in addition to predefined criteria, must indicate the composition of the ad hoc commission created for this purpose in replacement of the clusters provided for in the initial design. No evidence was found on the indication of the ad hoc commission.
2. A need to enhance and clarify the role of the project's coordinating so that in the time that remains, the execution of the activities planned by the different stakeholder partners can be boosted.
3. A need to make the Memorandum signed UNIDO/JEM viable to ensure the quality of training provided for components 2 and 3 and ensure the project's sustainability.
4. Complete delayed activities of 2020 (e.g., Activity 1.1.2 Development of Guidelines on private sector involvement in renewable energy projects in rural areas and presentation to authorities).
5. A need to setup project deadlines/milestones for the Year 2021 / 2022
6. To speed up the implementation of the project for all areas where there was no evidence of the ongoing work (e.g., Standards development and dissemination with the involvement of INNOQ and other relevant stakeholders in the year 2021 as part of component 1).
7. As part of component 2, there needs to speed up the action plan for the five created UEM working groups to make Progress.
8. Joint monitoring (e.g., monthly – Focal Points): in Country Project Coordinator on the field > rate of implementation technical meetings (e.g., monthly): identify needs
9. Need to continue sensitizing the 5 clusters created under the Memorandum of Understand with the UEM to accelerate training actions on renewable energies and ensure the sustainability of subsequent efforts to promote Promoting market-based dissemination of integrated renewable energy systems for productive activities in rural areas (component)
10. The need to find a partnership to operationalize the working groups created by UEM/UNIDO and provide technical assistance as mentioned. The training of the primary beneficiaries in knowledge or technology use or computer skills and internet to have access and actively participate in the competition funds application. To support technical assistance for financing and Innovation to the Project and Leadership of the PSC, FUNAE needs to activate the credit line.
11. Improve the engagement and communication of different stakeholders within the Project to allow for ownership of the project
12. Take advantage of the opportunity created by the projects resulting from the BCI SUPER credit line to serve as demonstration and training units.
13. With the current financing model to promote the use of renewable energies, it is necessary to review the mechanism for demonstration projects to include public entities.

Key Recommendations to the Government:

1. A need for continuous improvement in the performance of the government partner, as at the beginning, there were several changes to the project, and the absence of leadership was evident, in particular the entity that had the responsibility of coordinating the processes to create a favorable environment for project implementation as the initial design, as an example. No evidence was found on the active functioning of the task force for legislative reform - activity delayed to date.
2. A need evidence that the project activities are part of the partners' work plan, including public institutions.
3. The government needs to take active leadership to accelerate the approval of the legislative package on renewable energy, including norms and guidelines to create a good environment for the private sector to embark on clean energy projects and boost the productive sector, particularly in rural areas.
4. Accelerate activation of the Taskforce action plan created for law reform, including standards.
5. A need active involvement of INNOQ to accelerate approval of standards and guidelines.
6. In general, we understand that the project's current situation is for the acquisition of ER PV systems and thus guaranteeing their dissemination in rural areas, regardless of components 1 and 2.

Key Recommendations to the Donor:

1. For demonstration and training projects, the funding policy should be reviewed in relation to the need for a 70% share
2. For demonstration and training projects, the new financing modality should be disclosed to allow the participation of public entities.

Key Lessons Learned:

1. One of the significant challenges of implementing solar-powered irrigation systems in rural areas is the sustainability of all operations. These reports focus, therefore, on four essential elements to secure the project's sustainability.
2. One critical point is to organize the farmers in some institutional arrangement (clubs or associations or other) to promote synergies, facilitate coordination and training, and solve common issues more efficiently. Training needs to be provided to farmers in sustainable agriculture techniques geared to improve production and secure the necessary income to acquire what they cannot produce. The collective consciousness amongst the members also impacts the security and safety of the systems against theft, as there is a common interest in protecting the systems.
3. The second element is the maintenance of the systems. First, the farmers have been trained in maintaining the plans, and agreements were made to pay part of the investment to farmers' club-controlled saving and credit groups to maintain the systems and new assets. IDAI interrupted this as the farmers in some target areas lost everything and needed to start from zero. New agreements have been made that they shall set money aside for maintenance costs.
4. The third element is the involvement and cooperation with suitable equipment suppliers. The project's leading suppliers have been actively training the water committees and beneficiaries in the use and maintenance of the systems. They are also capable of providing spare parts. Contacts between the users and supplying companies have been established.

5. The fourth element is the flexibility in defining locations for installations. As the implementation of the projects progressed, and the company supplying the solar pumps detected that some of the planned areas didn't have the required water capacity, new solutions needed to be found, and either smaller pumps were installed or the installations were moved to other locations with the capacity of water needed.

6. BUDGET INFORMATION

Table 1: Financing plan summary

\$	Project Preparation	Project	Total (\$)
Financing (GEF / others)	81,553.28	2,851,384.00	2,932,937.28
Co-financing (Cash and In-kind)	-	11,284,997	11,284,997
Total (\$)	81,553.28	14,136,381	14,217,934.28

Source: Project document / progress report

Table 2: Financing plan summary - Outcome breakdown¹⁷

Project outcomes	Donor (GEF/other) (\$)	Co-Financing (\$)	Total (\$)
1. Establishment of a conducive policy and regulatory environment	139,664	282,211	421,875
2. Capacity building and knowledge management	274,600	399,000	673,600
3. Technology demonstration and scaling up	2,227,340	9,914,405	12,141,745
4. Monitoring and Evaluation	74,000	152,000	226,000
5. Project management	135,780	537,381	673,161
Total (\$)	2,851,384	11,284,997	14,136,381

Source: Project document / progress report

Table 3: Co-Financing source breakdown

Name of Co-financier (source)	In-kind	Cash	Total Amount (\$)
UNIDO	140,000	60,000	200,000
National Sustainable Development Fund (FNDS)	-	1,633,330	1,633,330
National Directorate for Rural Development (DNDR)	300,000	-	300,000
SACREEE	200,000	60,000	260,000
BCI	-	4,000,000	4,000,000
ADPP, Ajuda de Desenvolvimento do Povo para o Povo	-	500,000	500,000
JFS, João Ferreira dos Santos, Agro-Industrial Group	-	191,667	191,667

¹⁷ Source: Project document.

ELECTROTECNICA	700,000	-	700,000
FENAGRI	-	2,500,000	2,500,000
Chamber of Commerce of Mozambique	-	1,000,000	1,000,000
Total Co-financing (\$)	1,340,000	9,944,997	11,284,997

Source: Project document

Table 4: UNIDO budget execution (Grants 2000003222 (PPG phase) & 2000003742)

			Released Budget	Expenditure	Funds Available
Grant	Year		USD	USD	USD
2000003222	2015	Staff & Intern Consultants		0.00	0.00
2000003222	2015	Local travel	0.00		0.00
2000003222	2015	Nat.Consult./Staff	3,332.60	3,332.60	0.00
2000003222	2015	Contractual Services	40,000.00	40,000.00	0.00
2000003222	2015	Other Direct Costs	6.54	6.54	0.00
2000003222	2015	Result	43,339.14	43,339.14	0.00
2000003222	2016	Staff & Intern Consultants		0.00	0.00
2000003222	2016	Local travel	4,593.44	4,593.44	0.00
2000003222	2016	Nat.Consult./Staff	8,742.75	8,742.75	0.00
2000003222	2016	Contractual Services	24,000.00	24,000.00	0.00
2000003222	2016	Other Direct Costs	1,042.50	1,042.50	0.00
2000003222	2016	Result	38,378.69	38,378.69	0.00
2000003222	2017	Local travel	0.00		0.00
2000003222	2017	Nat.Consult./Staff	0.00		0.00
2000003222	2017	Contractual Services	380.47	380.47	0.00
2000003222	2017	Other Direct Costs	0.00	0.00	0.00
2000003222	2017	Result	380.47	380.47	0.00
2000003222	2018	Local travel	-594.10	-594.10	0.00
2000003222	2018	Other Direct Costs	49.08	49.08	0.00
2000003222	2018	Result	-545.02	-545.02	0.00
2000003222		Result	81,553.28	81,553.28	0.00
2000003742	2017	Local travel	0.00		0.00
2000003742	2017	Nat.Consult./Staff	0.00		0.00
2000003742	2017	Contractual Services	0.00		0.00
2000003742	2017	Equipment	0.00		0.00
2000003742	2017	Other Direct Costs	0.00		0.00
2000003742	2017	Result	0.00		0.00
2000003742	2018	Staff & Intern Consultants	7.29	7.29	0.00
2000003742	2018	Local travel	2,857.18	2,857.18	0.00
2000003742	2018	Nat.Consult./Staff	41,177.62	41,177.62	0.00

2000003742	2018	Contractual Services	20,000.00	20,000.00	0.00
2000003742	2018	Train/Fellowship/Study	1,871.30	1,871.30	0.00
2000003742	2018	Premises	550.26	550.26	0.00
2000003742	2018	Equipment	195,097.26	195,097.26	0.00
2000003742	2018	Other Direct Costs	4,836.02	4,836.02	0.00
2000003742	2018	Result	266,396.93	266,396.93	0.00
2000003742	2019	Staff & Intern Consultants	34,546.71	34,546.71	0.00
2000003742	2019	Local travel	22,844.79	22,844.79	0.00
2000003742	2019	Nat.Consult./Staff	63,440.22	63,440.22	0.00
2000003742	2019	Contractual Services	1,001,142.70	1,001,142.70	0.00
2000003742	2019	Train/Fellowship/Study	0.00		0.00
2000003742	2019	International Meetings	3,101.76	3,101.76	0.00
2000003742	2019	Premises	0.00		0.00
2000003742	2019	Equipment	41,690.43	41,690.43	0.00
2000003742	2019	Other Direct Costs	5,369.55	5,369.55	0.00
2000003742	2019	Result	1,172,136.16	1,172,136.16	0.00
2000003742	2020	Staff & Intern Consultants	46,117.27	46,117.27	0.00
2000003742	2020	Local travel	15,872.64	15,872.64	0.00
2000003742	2020	Nat.Consult./Staff	95,507.41	95,507.41	0.00
2000003742	2020	Contractual Services	260,428.77	260,428.77	0.00
2000003742	2020	Train/Fellowship/Study	0.00		0.00
2000003742	2020	International Meetings	0.00		0.00
2000003742	2020	Premises	0.00		0.00
2000003742	2020	Equipment	663.76	663.76	0.00
2000003742	2020	Other Direct Costs	11,114.90	11,114.90	0.00
2000003742	2020	Result	429,704.75	429,704.75	0.00
2000003742	2021	Staff & Intern Consultants	52,708.73	52,708.73	0.00
2000003742	2021	Local travel	2,699.08	2,699.08	0.00
2000003742	2021	Nat.Consult./Staff	132,349.07	132,349.07	0.00
2000003742	2021	Contractual Services	-267.17	-267.17	0.00
2000003742	2021	Train/Fellowship/Study	0.00		0.00
2000003742	2021	International Meetings	0.00		0.00
2000003742	2021	Premises	0.00		0.00
2000003742	2021	Equipment	2,368.44	2,368.44	0.00
2000003742	2021	Other Direct Costs	18,617.59	18,617.59	0.00
2000003742	2021	Result	208,475.74	208,475.74	0.00
2000003742	2022	Staff & Intern Consultants	52,382.04	52,382.04	0.00
2000003742	2022	Local travel	14,238.87	14,238.87	0.00
2000003742	2022	Nat.Consult./Staff	90,301.66	90,301.66	0.00
2000003742	2022	Contractual Services	257,503.34	257,503.34	0.00

2000003742	2022	Train/Fellowship/Study	1,135.82	1,135.82	0.00
2000003742	2022	International Meetings	0.00		0.00
2000003742	2022	Premises	0.00		0.00
2000003742	2022	Equipment	9,096.33	9,096.33	0.00
2000003742	2022	Other Direct Costs	9,663.69	9,663.69	0.00
2000003742	2022	Result	434,321.75	434,321.75	0.00
2000003742	2023	Staff & Intern Consultants	131,826.07	68,833.59	62,992.48
2000003742	2023	Local travel	10,664.47	4,912.13	5,752.34
2000003742	2023	Nat.Consult./Staff	28,950.77	91,616.96	-62,666.19
2000003742	2023	Contractual Services	159,150.00	-153.95	159,303.95
2000003742	2023	Train/Fellowship/Study	-69.87		-69.87
2000003742	2023	Premises	504.90		504.90
2000003742	2023	Equipment	3,838.43	0.00	3,838.43
2000003742	2023	Other Direct Costs	5,483.90	86.91	5,396.99
2000003742	2023	Result	340,348.67	165,295.64	175,053.03
2000003742	Result		2,851,384.00	2,676,330.97	175,053.03
Overall Result			2,932,937.28	2,757,884.25	175,053.03

Source: UNIDO Project Management database as of 16 May, 2023

II. Scope and purpose of the evaluation

The purpose of the evaluation is to independently assess the project to help UNIDO improve performance and results of ongoing and future programmes and projects. The terminal evaluation (TE) will cover the whole duration of the project from its starting date in 10/26/2024 to the estimated completion date in 10/24/2023.

The evaluation has two specific objectives:

- (i) Assess the project performance in terms of relevance, effectiveness, efficiency, coherence, sustainability and progress to impact; and
- (ii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

III. Evaluation approach and methodology

The TE will be conducted in accordance with the Charter of the Office of Evaluation and Internal Oversight¹⁸, the Evaluation Policy¹⁹, the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle²⁰, and UNIDO [Evaluation Manual](#).

In addition, the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies will be applied.

The evaluation will be carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the evaluation. The evaluation team leader will liaise with the UNIDO Independent Evaluation Unit (ODG/EIO/IED) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change approach and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, and drivers as well as barriers to achieve them. The learning from this analysis will be useful to feed into the design of the future projects so that the management team can effectively manage them based on results.

1. DATA COLLECTION METHODS

Following are the main instruments for data collection:

- (a) **Desk and literature review** of documents related to the project, including but not limited to:
 - The original project document, monitoring reports (such as progress and financial reports, mid-term review report, output reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
 - Notes from the meetings of committees involved in the project.
- (b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussion. Key stakeholders to be interviewed include:
 - UNIDO Management and staff involved in the project; and
 - Representatives of donors, counterparts and stakeholders.
- (c) **Field visit** to project sites in Mozambique
- (d) **Online data collection methods:** will be used to the extent needed and possible

2. EVALUATION KEY QUESTIONS AND CRITERIA

The key evaluation questions are the following:

- (b) How well has the project performed in terms of relevance, coherence, effectiveness, efficiency, and sustainability?

¹⁸ UNIDO (2020). Director General's Bulletin: Charter of the Office of Evaluation and Internal Oversight (DGB/2020/11, 11 December 2020)

¹⁹ UNIDO. (2018). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2018/08)

²⁰ UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

- (c) What have been the project's key results (outputs, outcome)? To what extent have the expected results been achieved or are likely to be achieved?
- (d) To what extent does the project generate or is expected to generate higher-level effects (impact)?
- (e) To what extent will the achieved results and benefits be sustained after completion of the project (sustainability)?
- (f) What are the key drivers and barriers to achieving the long-term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
- (g) Has the project adequately considered/addressed gender in its design and intervention?
- (h) Has the project adequately considered/addressed environmental and social safeguards, human rights and disability in its design and intervention?
- (i) What are the key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and how may these risks affect the continuation of results after the project ends?
- (j) Have recommendations from the mid-term evaluation been addressed and implemented?
- (k) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?

The evaluation will assess the likelihood of sustainability of the project results after the project completion. The assessment will identify key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and explain how these risks may affect the continuation of results after the project ends. Table 5 below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2.

Table 5: Project evaluation criteria

#	Evaluation criteria	Mandatory rating
A	Progress to Impact	Yes
B	Project design	Yes
1	• Overall design	Yes
2	• Project results framework/log frame	Yes
C	Project performance and progress towards results	Yes
1	• Relevance	Yes
2	• Coherence	Yes
3	• Effectiveness	Yes
4	• Efficiency	Yes
5	• Sustainability of benefits	Yes
D	Gender mainstreaming	Yes
E	Project implementation management	Yes
1	• Results-based management (RBM)	Yes
2	• Monitoring and Evaluation, Reporting	Yes

F	Performance of partners	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Implementing partner (if applicable)	Yes
4	• Donor	Yes
G	Environmental and Social Safeguards (ESS), Disability and Human Rights	Yes
1	• Environmental Safeguards	Yes
2	• Social Safeguards, Disability and Human Rights	Yes
H	Overall Assessment	Yes

Other Assessments required by the GEF for GEF-funded projects:

The terminal evaluation will assess the following topics, for which **ratings are not required**:

- Need for follow-up:** e.g. in instances financial mismanagement, unintended negative impacts or risks.
- Materialization of co-financing:** e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results.
- Environmental and Social Safeguards²¹:** appropriate environmental and social safeguards were addressed in the project's design and implementation, e.g. preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

3. RATING SYSTEM

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Unit uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per **Error! Reference source not found.**

Table 6. Project rating criteria

Score	Definition	Category
6	Highly satisfactory Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY
5	Satisfactory Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	

²¹ Refer to GEF/C.41/10/Rev.1 available at: http://www.thegef.org/sites/default/files/council-meetingdocuments/C.41.10.Rev.1.Policy_on_Environmental_and_Social_Safeguards.Final%20of%20Nov%2018.pdf

3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

IV. Evaluation process

The evaluation will be conducted from July to October 2023. The evaluation will be implemented in various phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

- i. Inception phase: The evaluation team will prepare the inception report providing details on the methodology for the evaluation and include an evaluation matrix with specific issues for the evaluation; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
- ii. Desk review and data analysis;
- iii. Interviews, survey and literature review;
- iv. Country visits; debriefing to key stakeholders in the field;
- v. Data analysis and report writing, (virtual) debriefing to staff at UNIDO HQ
- vi. Issuance and publication of final report and dissemination of evaluation results (incl. Management Response Sheet) by EIO/IEU

V. Time schedule and deliverables

The evaluation is scheduled to take place from July to October 2023. The evaluation field mission is tentatively planned for 04-15 September 2023. At the end of the field mission, there will be a presentation of the preliminary findings for all stakeholders involved in this project in . The tentative timelines are provided in **Error! Reference source not found..** After the evaluation field mission, the evaluation team leader will either visit UNIDO HQ for debriefing and presentation of the preliminary findings of the terminal evaluation or conduct it on-line. The draft TE report will be submitted 4 to 6 weeks after the end of the mission. The draft TE report is to be shared with the UNIDO PM, UNIDO Independent Evaluation Unit, the UNIDO GEF Coordinator and GEF OFP and other stakeholders for receipt of comments. The ET leader is expected to revise the draft TE report based on the comments received, edit the language and form and submit the final version of the TE report in accordance with UNIDO ODG/EIO/EID standards.

Table 7: Tentative timelines

Timelines	Tasks
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Two weeks after contract completion (July 2023)	Desk review and writing of inception report
Shortly before the field mission (August 2023)	Briefing with UNIDO project manager and the project team based in Vienna through Skype
September 2023	Field visit to Mozambique
Upon completion of field mission (September 2023) Latest 4 weeks before the end of the assignment	Debriefing in Vienna Preparation of first draft evaluation report
Two weeks after submission of draft evaluation report	Internal peer review of the report by UNIDO's Independent Evaluation Unit and other stakeholder comments to draft evaluation report
October 2023	Final evaluation report

VI. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national evaluation consultant. The evaluation team members will possess relevant strong experience and skills on evaluation management and conduct together with expertise and experience in innovative clean energy technologies. Both consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions annexed to these terms of reference. The ET is required to provide information relevant for follow-up studies, including terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

The UNIDO Project Manager and the project team in UNIDO's HQ and Maputo office will support the evaluation team. The UNIDO GEF Coordinator and GEF OFP(s) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.

An evaluation manager from UNIDO Independent Evaluation Unit will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager and national project teams will act as resourced persons and provide support to the evaluation team and the evaluation manager.

VII. Reporting

Inception report

This Terms of Reference (ToR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the Team Leader will prepare, in collaboration with the national consultant, an inception report that will operationalize the

ToR relating to the evaluation questions and provide information on what type of and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager.

The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the International Evaluation Consultant and national consultant; mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable²².

Evaluation report format and review procedures

The draft report will be delivered to UNIDO’s Independent Evaluation Unit (the suggested report outline is in Annex 4) and circulated to UNIDO staff and national stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO’s Independent Evaluation Unit for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The ET will present its preliminary findings to the local stakeholders at the end of the field visit and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ after the field mission.

The TE report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 4.

VIII. Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Unit. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Unit, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO’s Independent Evaluation Unit).

²² The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO ODG/EVQ/IEV.

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as Annex 5. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO Independent Evaluation Unit should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO’s evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Unit, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet.

1. ANNEX 1: PROJECT LOGICAL FRAMEWORK

Results	Indicators	Baseline and Targets	Means of Verification	Assumptions and Risks
Objective				
To promote market-based dissemination of integrated renewable energy systems for productive uses in rural areas of Mozambique	Incremental avoided or reduced CO2eq emissions (tonnes of CO2eq)	<p>Baseline: No emissions reductions would occur if the current practices are not changed in Mozambique, which are mainly based on the use of fossil fuels.</p> <p>Target: 7,760 tons of CO2eq emissions avoided or reduced during the technology lifetime.</p>	<ul style="list-style-type: none"> • GEF climate change mitigation tracking tool <ul style="list-style-type: none"> ◦ Demonstration site’s assessments 	<p>A: Data to calculate CO2eq emission reductions are available A: Current support and interest from private sector in developing integrated RE systems in productive sectors of rural areas is sustained</p> <p>R: Economic, financial or political crisis threaten the sustainability of the project and prevent the development of integrated RE systems in rural areas</p>
Component 1 Establishment of a conducive policy and regulatory environment				
Outcome 1.1. Policy and regulatory environment promoting integrated renewable energy systems in rural areas established	<p>Number of modified, updated and/or new policies for private sector engagement in the integration of RE systems in rural areas developed and proposed by the Taskforce</p> <p>Number of new RE standards adopted by INNOQ</p>	<p>Baseline: Current policies and regulations are insufficient to incentivize the integration of RE systems in rural areas and to promote the involvement of the private sector in this type of projects</p> <p>Target: Policies and regulations are improved in order to incentivize the</p>	<ul style="list-style-type: none"> • Developed and approved policies, regulations, guidelines and standards available in the Official Bulletin of Mozambique or similar official publications <ul style="list-style-type: none"> ◦ Final Project Evaluation 	A: Sustained government support to agreed activities and involvement of government bodies including MITADER, MIREME, FUNAE, FNDS, CNELEC (future ARENE), and DINA, among others

		integration of RE systems in rural areas with the involvement of the private sector		R: Economic and political instability threatens the development of the project and the creation of new policies and regulations
Outputs:				
Output 1.1.1. Policy framework for private sector engagement integrated renewable energy systems in rural areas adapted and presented for adoption	<p>Number of established "Policy and Regulatory Taskforces"</p> <p>Number of Workshops conducted on Policy and Regulatory Framework Modification</p> <p>Number of women participating in the Taskforce</p>	<p>Baseline: Currently there is no team specifically dedicated to the development of policies and regulations aiming at the integration of RE systems in rural areas with the engagement of the private sector.</p> <p>Targets: A Taskforce is established</p> <p>One Workshop conducted</p> <p>At least 40% of the Taskforce should be women</p>	<ul style="list-style-type: none"> • Official communication from the Government on the creation of the Taskforce <ul style="list-style-type: none"> ○ • Workshop reports or meeting minutes <ul style="list-style-type: none"> ○ • Interviews to MITADER 	<p>A: Sustained government support for the creation of the Taskforce and interest from the several government bodies in being part of it including MITADER, MIREME, FUNAE, FNDS, CNELEC (future ARENE), and DINA, among others</p> <p>R: Economic and political instability threatens the development of the project R: Lack of interest from some government bodies to participate in the Taskforce R: Lack of interest from women to participate in the Taskforce</p>
Output 1.1.2. Guidelines on private sector involvement in renewable energy projects in rural areas developed and adopted	<p>Number of consultation campaigns conducted</p> <p>Number of consulted private sector actors</p> <p>Number of modified, updated and/or new guidelines on private sector involvement in RE projects</p>	<p>Baseline: No specific guidelines to address the private sector involvement in RE projects in rural areas exist</p> <p>Target: At least 1 consultation campaign conducted considering gender dimensions</p> <p>At least 10 private sector actors should be approached during the</p>	<ul style="list-style-type: none"> • Findings from the consultation campaign to private sector actors <ul style="list-style-type: none"> ○ • Issued guidelines to be used by private sector actors 	<p>A: There is interest from the private sector to get involved in RE projects in rural areas</p> <p>R: Insufficient resources to conduct a consultation campaign R: Low response from private sector actors during consultation</p>

	in rural areas developed and presented to authorities	consultation campaign At least 1 guideline should be generated considering gender dimensions		campaign reduces the collected data
Output 1.1.3. Standards for typical integrated renewable energy systems for rural areas developed and adopted	Number of modified, updated and/or new standards for typical integrated RE systems for rural areas developed and presented Number of dissemination workshops	Baseline: Insufficient capacity and knowledge of universities and vocational training institutions on RE integrated systems Target: Ten (10) training sessions targeting twenty five (25) academicians from universities and vocational training institutions on integrated RE systems At least 40% of participants should be women	<ul style="list-style-type: none"> • Training sessions registries and records <ul style="list-style-type: none"> ◦ • Interviews to targeted financial institutions and other private sector organizations 	A: There is interest from universities and vocational training institutions in receiving tailor-made training and knowledge on RE R: Insufficient infrastructure or tools to successfully deliver the training sessions
Component 2 Capacity building and knowledge management				
Outcome 2.1. Capacity of key players strengthened and information available for market enablers and players	Number of key players with enhanced capacity on specific areas of RE technologies	Baseline: Insufficient capacity and knowledge among key players Targets: Selected key government institutions, financial institutions as well as universities and vocational training institutions have the required knowledge to analyze, promote, develop and facilitate RE projects.	<ul style="list-style-type: none"> • Training sessions registries and records <ul style="list-style-type: none"> ◦ • Government websites, library or records • Final Project Evaluation 	A: There is interest from the GoM in receiving tailor-made training and knowledge on RE R: Limited resources from local institutions to provide support to carry out the capacity building in terms of infrastructure, space, training materials and tools.
Outputs				
Output 2.1.1. Five training sessions for fifty (50) government officials at both national and provincial levels on RE integrated systems conducted	Number of training sessions delivered to government officials on RE integrated systems Number of attendees (government	Baseline: Insufficient capacity and knowledge among government officials on RE integrated systems Target: Five (5) training sessions delivered to fifty (50) government officials at both	<ul style="list-style-type: none"> • Training sessions registries and records <ul style="list-style-type: none"> ◦ • Interviews to targeted government officials 	A: There is interest from the GoM in receiving tailor-made training and knowledge on RE related information R: Insufficient infrastructure or tools to

	officials at both national and provincial levels) Percentage of women attending the training sessions for government officials	national and provincial levels on RE integrated systems. At least 40% of participants should be women		successfully deliver the training sessions
Output 2.1.2. Ten training sessions targeting 250 participants from financial institutions, and private sector organizations on integrated renewable energy systems conducted	Number of training sessions delivered on RE integrated systems addressed to financial institutions and other private sector organizations Number of attendees from financial institutions Number of attendees from other private sector organizations Percentage of women attending the training sessions from financial institutions or other private sector organizations	Baseline: Insufficient capacity and knowledge of financial institutions and other private sector organizations on RE integrated systems Target: Ten (10) training sessions targeting two hundred and fifty (250) participants from financial institutions and other private sector organizations on integrated RE systems At least 20% of participants should be women	<ul style="list-style-type: none"> • Training sessions registries and records <ul style="list-style-type: none"> ◦ • Interviews to targeted financial institutions and other private sector organizations 	A: There is interest from the financial institutions and other private sector organizations in receiving tailor-made training and knowledge on RE R: Insufficient infrastructure or tools to successfully deliver the training sessions
Output 2.1.3. Training of universities and vocational training institutions staff (25) on various aspects of integrated RE systems on a train-the-trainer basis conducted	Number of training sessions delivered on RE integrated systems addressed to universities and vocational training institutions Number of trainers trained from universities	Baseline: Insufficient capacity and knowledge of universities and vocational training institutions on RE integrated systems Target: Ten (10) training sessions targeting twenty five (25) academicians from universities and vocational training institutions on integrated RE systems	<ul style="list-style-type: none"> • Training sessions registries and records <ul style="list-style-type: none"> ◦ • Interviews to targeted financial institutions and other private sector organizations 	A: There is interest from universities and vocational training institutions in receiving tailor-made training and knowledge on RE R: Insufficient infrastructure or tools to successfully deliver the training sessions

	Number of trainers trained from vocational training institutions Number of women trainers trained	At least 40% of participants should be women		
Component 3 Technology demonstration and scaling up				
Outcome 3.1. Integrated RE systems demonstrated	Number of demonstration projects that integrate RE systems, in rural areas Number of scaled-up projects in rural areas Percentage women using the financial mechanism	Baseline: No demonstration projects showing the bankability of RE integrated systems in rural areas exist Target: At least four (4) demonstration projects successfully conducted Install solar water pumping systems for irrigation Installing biogas digesters for agro-food processing in rural areas Gender-sensitive financial mechanism is used by women	<ul style="list-style-type: none"> • Evaluating reports of demonstration projects <ul style="list-style-type: none"> ○ • Project Reports or information from MITADER /MIREME <ul style="list-style-type: none"> ○ • Final Project Evaluation 	A: There is interest from project developers and co-financers in carrying out demonstration projects R: Economic and political instability threatens the development of the demonstration projects
Outputs				
Output 3.1.1. Demonstration projects on integrated renewable energy systems with about 250kW of installed capacity implemented in selected productive sectors with high visibility and replication potential	Number of demonstration projects on integrated RE systems installed in rural areas	Baseline: No demonstration projects exist to show the bankability of integrated RE systems in productive sectors of rural areas Target: Install demonstration projects focusing in RE systems in productive sectors of rural areas to achieve 250kW of capacity	<ul style="list-style-type: none"> • Project Reports or information from MITADER/MIREME <ul style="list-style-type: none"> ○ • Financial institutions products offering 	A: There is interest from financial institutions to offer financial services to customers in rural areas R: High perceived risk hinders the active involvement of financial institutions
Outputs				
Output 3.2.1. Financial mechanism established to support the installations of solar water pumping systems for irrigation and Waste-to-Energy projects for agro-food	Number of solar water pumping installations for irrigation in rural areas Number of biogas digesters for agro-food processing installed in rural areas	Baseline: No appropriate financial mechanism is in place to drive the installation of solar water pumping systems or biogas digesters in rural areas Target: Install thirty (30) solar water	<ul style="list-style-type: none"> • Financial institutions products offering <ul style="list-style-type: none"> ○ • Project Reports or information from MITADER / MIREME 	A: There is interest from financial institutions and sufficient promotion from the GoM to participate in the establishment of a financial mechanism

processing in rural areas to achieve 1.2MW of installed capacity	Gender-sensitive financial mechanism developed	pumping systems and thirty (30) biogas digesters for agro-food processing in rural areas to achieve 1.2MW of capacity The financial mechanism design include a gender approach		A: Local capabilities to operate the financial mechanism are established R: Lack of interest from the private sector in investing in RE projects R: Economic and political instability threatens the development of the financial mechanism
Outcome 3.3. Increased confidence and awareness of technical feasibility and commercial viability of integrated RE systems	Percentage of project's results disseminated	Baseline: No demonstration projects exists to show the bankability of integrated RE systems in productive sectors of rural areas Target: 100% of projects' results are publicly disseminated through at least 1 dissemination campaign	<ul style="list-style-type: none"> Dissemination campaign strategy and report 	A: After being informed, relevant stakeholders are interested and confident on the benefits of integrating RE systems in rural areas R: Information is not the main barrier for the development of RE systems in rural areas.
Outputs				
Output 3.3.1. Demonstration and investment projects are independently evaluated and results widely disseminated	Percentage of evaluated projects (number of evaluated projects over total number projects installed) Percentage of projects whose evaluated results were publicly disseminated (by any means of communication) Number of dissemination campaigns	Baseline: No demonstration projects exists to show the bankability of integrated RE systems in productive sectors of rural areas Target: 100% of installed projects are evaluated 100% of projects' results are publicly disseminated At least 1 dissemination campaign is conducted with a workshop/meeting specifically targeting rural women	<ul style="list-style-type: none"> Results from evaluating processes <ul style="list-style-type: none"> Project Reports or information from MITADER / MIREME Dissemination Campaign <ul style="list-style-type: none"> Media (radio, TV, billboards, etc.) 	A: At least one demonstration project is installed R: Economic and political instability threatens the development and installation of projects
Component 4 Monitoring and Evaluation				

Outcome 4.1. Project progress towards objectives continuously monitored and evaluated	Number of progress and evaluation reports	Baseline: No baseline exists Target: Project effectively monitored and evaluated	<ul style="list-style-type: none"> Project progress reports, mid-project evaluation and project terminal evaluation reports 	<p>A: Continued support by the project stakeholders to successfully monitor and evaluate the project</p> <p>R: Economic and political instability threatens the development and installation of projects</p>
Outputs				
Output 4.1.1. Mid-term review and terminal evaluation carried out	Number of evaluation reports carried out	Baseline: No baseline exists Target: 1 mid-term review and one terminal evaluation conducted	<ul style="list-style-type: none"> Mid-project evaluation and project terminal evaluation reports 	<p>A: Continued support by the project stakeholders to successfully evaluate the project</p> <p>R: Economic and political instability threatens the development and installation of projects</p>
Output 4.1.2. Project progress monitored, documented and recommended actions formulated	Number of progress reports developed	Baseline: No baseline exists. Target: At least a progress report developed once a year	<ul style="list-style-type: none"> Project progress reports 	<p>A: Continued support by the project FUN to successfully monitor the project</p> <p>R: Economic and political instability threatens the development and installation of projects</p>

2. ANNEX 2: DETAILED QUESTIONS TO ASSESS EVALUATION CRITERIA: SEE ANNEX 2 OF THE UNIDO Evaluation Manual

3. ANNEX 3: JOB DESCRIPTIONS



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International evaluation consultant, team leader
Main Duty Station and Location:	Home-based
Missions:	Missions to Maputo, Mozambique
Start of Contract (EOD):	1 July 2023
End of Contract (COB):	20 October 2023
Number of Working Days:	35 working days spread over the above mentioned period

1. ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Unit (EIO/IEU) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. EIO/IEU is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

2. PROJECT CONTEXT

The project focuses on increasing renewable energy participation through a market-based approach by means of adopting solar PV and Waste-to-Energy solutions in small to medium-scale farms and agro-food processing facilities. The added value of this project will be to promote these technologies in small and medium-scale businesses, particularly in rural areas. Without GEF intervention, these technologies are unlikely to have widespread uptake, even where useful organic waste streams or sufficient solar resources are available. The project seeks to act as a trigger to demonstration and rapid replication in the integration of RE technology. GEF funding is used to support all outcomes of the project, especially the ones involving support from international consultants, the implementation of investment projects, and project evaluation activities.

Through its 4 components, the project will support the market-based adoption of integrated renewable energy systems (solar PV for irrigation and waste-to-energy) in small to medium-scale farms and rural agro-food processing industries in Mozambique. The components are the following:

1. **Establishment of a conducive policy and regulatory environment:** the project will enhance the regulatory and policy environment in order to promote the

involvement of the private sector in the development of integrated RE systems for rural areas;

2. **Capacity building and knowledge management:** the project will improve and develop the capabilities and knowledge of market players and enablers in the RE sector including relevant government officials (national and provincial level) as well as representatives from financial institutions, private sector, universities and vocational training institutions;
3. **Technology demonstration and scaling up:** the project will demonstrate the technical and financial feasibility of RE technologies in agricultural activities located in rural areas, specifically: solar PV water pumping and biogas/biomass usage in agro-food processing industries through the installation of demonstration projects. The objectives of these projects, besides delivering GHG emission reductions, include generating case studies and best practices on the use of RE technologies in agro-food processing industries that have high replication potential across Mozambique. In this regard, UNIDO/GEF is offering a grant to support these demonstration projects in rural Mozambique to mitigate the high up-front costs required for such investment projects; and
4. **Monitoring and Evaluation:** The objectives of this component are to **(a)** establish and conduct adequate and systematic M&E and reporting of all project indicators following UNIDO and GEF procedures to ensure successful project implementation; **(b)** establish a dedicated website for the project; and **(c)** ensure that the dissemination programme is implemented and project milestones/reports etc., are regularly posted on the website.

DUTIES AND RESPONSIBILITIES

As such, the consultant is expected to evaluate the project according to the Terms of Reference. S/he will act as leader of the evaluation and will be responsible for preparing the draft and final evaluation report, according to the standards of the UNIDO Independent Evaluation Unit. The Consultant will be expected to carry out the following tasks/duties:

○

○ MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
1. Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data) Define technical issues and questions to be addressed by the national technical evaluator prior to the field visit Determine key data to collect in the field and adjust the key data collection instrument if needed	<ul style="list-style-type: none"> • Adjusted table of evaluation questions, depending on country specific context; • Draft list of stakeholders to interview during the field missions. • Identify issues and questions to be addressed by the local technical expert 	5 days	Home-based

○ MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
In coordination with the project manager, the project management team and the national technical evaluator, determine the suitable sites to be visited and stakeholders to be interviewed			
2. Prepare an inception report which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, confirm the evaluation methodology, draft theory of change, and tentative agenda for field work. Provide guidance to the national evaluator to prepare initial draft of output analysis and review technical inputs prepared by national evaluator, prior to field mission.	<ul style="list-style-type: none"> • Draft theory of change and Evaluation framework to submit to the Evaluation Manager for clearance • Guidance to the national evaluator to prepare output analysis and technical reports 	5 days	Home based
3. Briefing with the UNIDO Independent Evaluation Unit, project managers and other key stakeholders at UNIDO HQ (included is preparation of presentation).	<ul style="list-style-type: none"> • Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to interview and site visits); mission planning • Division of evaluation tasks with the National Consultant 	2 day	Through an on-line channel (e.g., Zoom or Microsoft teams)
4. Conduct field mission to Mozambique in September 2023 ²³ .	<ul style="list-style-type: none"> • Conduct meetings with relevant project stakeholders, beneficiaries, the GEF Operational Focal Point (OFP), etc. for the collection of data and clarifications • Agreement with the National Consultant on the structure and 	10 days	(specific project site to be identified at inception phase)

²³ The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and the country counterparts.

○ MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
	<p>content of the evaluation report and the distribution of writing tasks</p> <ul style="list-style-type: none"> • Evaluation presentation of the evaluation's preliminary findings, conclusions and recommendations to stakeholders in the country, including the GEF OFP, at the end of the mission 		
5. Present overall findings and recommendations to the stakeholders at UNIDO HQ	<ul style="list-style-type: none"> • After field mission(s): Presentation slides, feedback from stakeholders obtained and discussed 	2 day	Home-based
6. Prepare the evaluation report, with inputs from the National Consultant, according to the TOR Coordinate the inputs from the National Consultant and combine with her/his own inputs into the draft evaluation report Share the evaluation report with UNIDO HQ and national stakeholders for feedback and comments.	<ul style="list-style-type: none"> • Draft evaluation report 	8 days	Home-based
7. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Unit and stakeholders and edit the language and form of the final version according to UNIDO standards.	<ul style="list-style-type: none"> • Final evaluation report 	3 day	Home-based
	TOTAL	35 days	

REQUIRED COMPETENCIES

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced degree in environment, energy, engineering, development studies or related areas.

Technical and Functional Experience:

- A Minimum of 15 years' practical experience in evaluation of development projects and programmes, including experience at the international level involving technical cooperation in developing countries. Experience in the evaluation of GEF projects and knowledge of UNIDO activities an asset. Exposure to the needs, conditions and problems in developing countries.
- Good working knowledge in environmental management
- Knowledge about GEF operational programs and strategies and about relevant GEF policies such as those on project life cycle, M&E, incremental costs, and fiduciary standards
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Working experience in developing countries

Languages: Fluency in written and spoken English is required. Knowledge of Portuguese highly desirable.

All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Unit.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	National evaluation consultant
Main Duty Station and Location:	Home-based
Mission/s to:	Travel to potential sites within Mozambique
Start of Contract:	1 July 2023
End of Contract:	20 October 2023
Number of Working Days:	22 days spread over the above mentioned period

ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Unit (EIO/IEU) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. EIO/IEU is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

PROJECT CONTEXT

The project focuses on increasing renewable energy participation through a market-based approach by means of adopting solar PV and Waste-to-Energy solutions in small to medium-scale farms and agro-food processing facilities. The added value of this project will be to promote these technologies in small and medium-scale businesses, particularly in rural areas. Without GEF intervention, these technologies are unlikely to have widespread uptake, even where useful organic waste streams or sufficient solar resources are available. The project seeks to act as a trigger to demonstration and rapid replication in the integration of RE technology. GEF funding is used to support all outcomes of the project, especially the ones involving support from international consultants, the implementation of investment projects, and project evaluation activities.

Through its 4 components, the project will support the market-based adoption of integrated renewable energy systems (solar PV for irrigation and waste-to-energy) in small to medium-scale farms and rural agro-food processing industries in Mozambique. The components are the following:

1. **Establishment of a conducive policy and regulatory environment:** the project will enhance the regulatory and policy environment in order to promote the involvement of the private sector in the development of integrated RE systems for rural areas;
2. **Capacity building and knowledge management:** the project will improve and develop the capabilities and knowledge of market players and enablers in the RE sector including relevant government officials (national and provincial level) as well

as representatives from financial institutions, private sector, universities and vocational training institutions;

3. **Technology demonstration and scaling up:** the project will demonstrate the technical and financial feasibility of RE technologies in agricultural activities located in rural areas, specifically: solar PV water pumping and biogas/biomass usage in agro-food processing industries through the installation of demonstration projects. The objectives of these projects, besides delivering GHG emission reductions, include generating case studies and best practices on the use of RE technologies in agro-food processing industries that have high replication potential across Mozambique. In this regard, UNIDO/GEF is offering a grant to support these demonstration projects in rural Mozambique to mitigate the high up-front costs required for such investment projects; and
4. **Monitoring and Evaluation:** The objectives of this component are to **(a)** establish and conduct adequate and systematic M&E and reporting of all project indicators following UNIDO and GEF procedures to ensure successful project implementation; **(b)** establish a dedicated website for the project; and **(c)** ensure that the dissemination programme is implemented and project milestones/reports etc., are regularly posted on the website.

DUTIES AND RESPONSIBILITIES

The national evaluation consultant will evaluate the projects according to the terms of reference (TOR) under the leadership of the team leader (international evaluation consultant). S/he will perform the following tasks:

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
<p>Desk review</p> <p>Review and analyze project documentation and relevant country background information; in cooperation with the team leader, determine key data to collect in the field and prepare key instruments in English (questionnaires, logic models);</p> <p>If need be, recommend adjustments to the evaluation framework and Theory of Change in order to ensure their understanding in the local context</p>	<p>Evaluation questions, questionnaires/interview guide, logic models adjusted to ensure understanding in the national context</p> <p>A stakeholder mapping, in coordination with the project team</p>	3 days	Home-based
<p>Carry out preliminary analysis of pertaining technical issues determined with the Team Leader</p> <p>In close coordination with the project staff team verify the extent of achievement of project outputs prior to field visits</p>	<ul style="list-style-type: none"> • Report addressing technical issues and question previously identified with the Team leader 	5 days	Home-based

MAIN DUTIES	Concrete/measurable outputs to be achieved	Expected duration	Location
Develop a brief analysis of key contextual conditions relevant to the project	<ul style="list-style-type: none"> • Tables that present extent of achievement of project outputs • Brief analysis of conditions relevant to the project 		
Coordinate the evaluation mission agenda, ensuring and setting up the required meetings with project partners and government counterparts, and organize and lead site visits, in close cooperation with project staff in the field.	<ul style="list-style-type: none"> • Detailed evaluation schedule • List of stakeholders to interview during the field missions 	2 days	Home-based
Coordinate and conduct the field mission with the team leader in cooperation with the Project Management Unit, where required; Consult with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks. Conduct the translation for the Team Leader, when needed.	<ul style="list-style-type: none"> • Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in the country at the end of the mission • Agreement with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks. 	8 days	Home-based
Follow up with stakeholders regarding additional information promised during interviews Prepare inputs to help fill in information and analysis gaps (mostly related to technical issues) and to prepare of tables to be included in the evaluation report as agreed with the Team Leader Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Unit and stakeholders and proof read the final version	<ul style="list-style-type: none"> • Part of draft evaluation report prepared. 	4 days	Home-based
TOTAL		22 days	

REQUIRED COMPETENCIES

Core values:

1. Integrity

2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environmental science, engineering or other relevant discipline like developmental studies with a specialization in industrial energy efficiency and/or climate change.

Technical and functional experience:

- A Minimum of five years' experience in conducting and managing reviews or evaluations (of development projects), preferably in the field of renewable energy. . Exposure to the needs, conditions and problems in developing countries.
- Good working knowledge in environmental management
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Working experience in developing countries

Languages: Fluency in written and spoken English and Portuguese is required.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Unit.

4. ANNEX 4: OUTLINE OF AN IN-DEPTH PROJECT EVALUATION REPORT

Executive summary (maximum 5 pages)

- Evaluation purpose and methodology
- Key findings
- Conclusions and recommendations
- Project ratings

Tabular overview of key findings – conclusions – recommendations

1. Introduction

- 1.1. Evaluation objectives and scope
- 1.2. Overview of the Project Context
- 1.3. Overview of the Project
- 1.4. Theory of Change
- 1.5. Evaluation Methodology
- 1.6. Limitations of the Evaluation
- 1.7.

2. Project's contribution to Development Results - Effectiveness and Impact

- 2.1. Project's achieved results and overall effectiveness
- 2.2. Progress towards impact
 - 2.2.1. Behavioral change
 - 2.2.1.1. Economically competitive - Advancing economic competitiveness
 - 2.2.1.2. Environmentally sound – Safeguarding environment
 - 2.2.1.3. Socially inclusive – Creating shared prosperity
 - 2.2.2. Broader adoption
 - 2.2.2.1. Mainstreaming
 - 2.2.2.2. Replication
 - 2.2.2.3. Scaling-up
 - 2.2.2.4.

3. Project's quality and performance

- 3.1. Design
- 3.2. Relevance
- 3.3. Efficiency
- 3.4. Sustainability
- 3.5. Gender mainstreaming
-

4. Performance of Partners

- 4.1. UNIDO
- 4.2. National counterparts
- 4.3. Donor
-

5. Factors facilitating or limiting the achievement of results

- 5.1. Monitoring & evaluation
- 5.2. Results-Based Management
- 5.3. Other factors
- 5.4. Overarching assessment and rating table

6. Conclusions, recommendations and lessons learned

- 6.1. Conclusions
- 6.2. Recommendations
- 6.3. Lessons learned
- 6.4. Good practices

Annexes (to be put online separately later)

- Evaluation Terms of Reference
- Evaluation framework
- List of documentation reviewed
- List of stakeholders consulted
- Project logframe/Theory of Change
- Primary data collection instruments: evaluation survey/questionnaire
- Statistical data from evaluation survey/questionnaire analysis

5. ANNEX 5: CHECKLIST ON EVALUATION REPORT QUALITY

Project Title:

UNIDO ID:

Evaluation team:

Quality review done by:

Date:

Quality criteria		UNIDO EIO/IEU assessment notes	Rating
1.	The inception report is well structured, logical, clear and complete		
2.	Was the evaluation report well-structured and timely? (Clear language, correct grammar, clear and logical structure)		
3.	The report presents a substantive description of the 'object' of the evaluation.		
4.	The evaluation's purpose, objective and scope are clearly defined.		
5.	The report presents a transparent description of the evaluation methodology and clearly explains how the evaluation was designed.		
6.	Findings respond directly to the evaluation criteria and evaluation questions. They are clearly formulated and based on evidence derived from data collection and analysis.		
7.	Conclusions presented are based on findings, are substantiated by evidence and present strengths and weaknesses.		
8.	Recommendations are relevant to the evaluation object and purpose and supported by evidence and conclusions.		
9.	Report includes a section on lessons learned.		

Quality criteria		UNIDO EIO/IEU assessment notes	Rating
10	The report adequately addresses a) gender mainstreaming, b) human rights & social impacts and c) environmental issues		
<u>Rating system for quality of evaluation reports</u> 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, and unable to assess = 0.			

Rating system for quality of evaluation reports

A rating scale of 1-6 is used for each criterion: Highly satisfactory = 6, Satisfactory = 5, Moderately satisfactory = 4, Moderately unsatisfactory = 3, Unsatisfactory = 2, Highly unsatisfactory = 1, and unable to assess = 0.

6. ANNEX 6: GUIDANCE ON INTEGRATING GENDER IN EVALUATIONS OF UNIDO PROJECTS AND PROJECTS

A. Introduction

Gender equality is internationally recognized as a goal of development and is fundamental to sustainable growth and poverty reduction. The UNIDO Policy on gender equality and the empowerment of women and its addendum, issued respectively in April 2009 and May 2010 (UNIDO/DGB(M).110 and UNIDO/DGB(M).110/Add.1), provides the overall guidelines for establishing a gender mainstreaming strategy and action plans to guide the process of addressing gender issues in the Organization's industrial development interventions.

According to the UNIDO Policy on gender equality and the empowerment of women:

Gender equality refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not suggest that women and men become 'the same' but that women's and men's rights, responsibilities and opportunities do not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. It is therefore not a 'women's issues'. On the contrary, it concerns and should fully engage both men and women and is a precondition for, and an indicator of sustainable people-centered development.

Empowerment of women signifies women gaining power and control over their own lives. It involves awareness-raising, building of self-confidence, expansion of choices, increased access to and control over resources and actions to transform the structures and institutions which reinforce and perpetuate gender discriminations and inequality.

Gender parity signifies equal numbers of men and women at all levels of an institution or organization, particularly at senior and decision-making levels.

The UNIDO projects/projects can be divided into two categories: 1) those where promotion of gender equality is one of the key aspects of the project/project; and 2) those where there is limited or no attempted integration of gender. Evaluation managers/evaluators should select relevant questions depending on the type of interventions.

B. Gender responsive evaluation questions

The questions below will help evaluation managers/evaluators to mainstream gender issues in their evaluations.

B.1. Design

- Is the project/project in line with the UNIDO and national policies on gender equality and the empowerment of women?
- Were gender issues identified at the design stage?
- Did the project/project design adequately consider the gender dimensions in its interventions? If so, how?
- Were adequate resources (e.g., funds, staff time, methodology, experts) allocated to address gender concerns?
- To what extent were the needs and priorities of women, girls, boys and men reflected in the design?
- Was a gender analysis included in a baseline study or needs assessment (if any)?
- If the project/project is people-centered, were target beneficiaries clearly identified and disaggregated by sex, age, race, ethnicity and socio-economic group?

- If the project/project promotes gender equality and/or women's empowerment, was gender equality reflected in its objective/s? To what extent are output/outcome indicators gender disaggregated?

B.2. Implementation management

- Did project monitoring and self-evaluation collect and analyse gender disaggregated data?
- Were decisions and recommendations based on the analyses? If so, how?
- Were gender concerns reflected in the criteria to select beneficiaries? If so, how?
- How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?
- If the project/project promotes gender equality and/or women's empowerment, did the project/project monitor, assess and report on its gender related objective/s?
 -

B.3. Results

- Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision making authority)?

In the case of a project/project with gender related objective/s, to what extent has the project/project achieved the objective/s? To what extent has the project/project reduced gender disparities and enhanced women's empowerment?

6.2. Annex 2: Evaluation Framework /Matrix

The following evaluation matrix was developed on the bases of the UNIDO Evaluation Manual

Evaluation Question & Evaluation Criterion	JC Indicator No.	Judgement Criteria and Indicators	Main Evidence Sources
<p>EQ1: What long-term (primary & secondary) effects has the TSE4ALLM implementation produced?</p> <p><i>Evaluation Criterion:</i> PROGRESS TO IMPACT</p>	JC1:	<i>TSE4ALLM implementation has produced long term positive effects in the adoption of RE</i>	
	I.1.1:	Conductive policy and regulatory environment established	Desk Research, Field Interviews
	I.1.2:	RE market players capacity building carried out	Desk Research, Field Interviews
<p>EQ2: What has been the quality of the logical framework approach and the project design?</p> <p><i>Evaluation Criterion:</i> PROJECT DESIGN</p>	JC2:	<i>The TSE4ALLM formulation of the intervention and the plan to achieve the specific purpose has been adequate.</i>	
<p>EQ2.1: Has the design of the TSE4ALLM properly reflected the problems, needs, stakeholders' analysis, context and contribution to national programmes?</p> <p><i>Evaluation Sub-Criterion:</i> OVERALL DESIGN</p>	JC2.1:	<i>TSE4ALLM design reflected the existing problems, needs, context and contribution to the Republic of Mozambique policies and programmes</i>	
	I.2.1.1:	Addressed needs of TGs UNIDO & donor strategies	Desk Research, Field Interviews
	I.2.1.2:	lessons learned & best practices from other projects have been included	Desk Research, Field Interviews
	I.2.1.3:	Allocated budget to M&R and Evaluation plans	Desk Research, Field Interviews
	I.2.1.4:	Risk Assessment	Desk Research, Field Interviews
<p>EQ2.2: How adequate has been the logical framework and theory of change for the planning and implementation of the project?</p> <p><i>Evaluation Sub-Criterion:</i> PROJECT RESULTS FRAMEWORK /LOGFRAME</p>	JC2.2:	<i>TSE4ALLM's logframe & ToC reflected the results chain logic, assumptions /risks, cause-effect links and included SMART indicators</i>	
	I.2.2.1	Impact, outcomes & outputs	Desk Research, Field Interviews
	I.2.2.2	Monitoring of external factors	Desk Research, Field Interviews
	I.2.2.3	Validity of path through objective evidence	Desk Research, Field Interviews
	I.2.2.4	Clear targets and objective means of verification	Desk Research, Field Interviews

Evaluation Question & Evaluation Criterion	JC Indicator No.	Judgement Criteria and Indicators	Main Evidence Sources
<p><i>EQ3: What has been the functioning of the TSE4ALLM development intervention?</i></p> <p><i>Evaluation Criterion:</i> PROJECT PERFORMANCE</p>	<p>JC3:</p>	<p><i>TSE4ALLM project performance is aligned and achieved accordingly to the DAC criteria</i></p>	
<p><i>EQ3.1: What is the relevance of TSE4ALLM project to country Policies and Needs?</i></p> <p><i>Evaluation Sub-Criterion:</i> RELEVANCE</p>	<p>JC3.1.1:</p>	<p><i>TSE4ALLM project shows good alignment with country policies and needs</i></p>	
	<p>I.3.1.1.1:</p>	<p>TSE4ALLM project relevance to country policies</p>	<p>Desk Research</p>
	<p>I.3.1.1.2:</p>	<p>TSE4ALLM project relevance to country needs</p>	<p>Desk Research</p>
	<p>JC3.1.2:</p>	<p><i>TSE4ALLM project is relevant to UNIDO and GEF policies and initiatives, and to those of other key donors</i></p>	
	<p>I.3.1.2.1:</p>	<p>TSE4ALLM project relevance to UNIDO policies and strategies</p>	<p>Desk Research, Field Interviews</p>
	<p>I.3.1.2.2:</p>	<p>TSE4ALLM project relevance to GEF priorities and strategies</p>	<p>Desk Research, Field Interviews</p>
	<p>JC3.1.3:</p>	<p><i>TSE4ALLM project shows good alignment private sector and population needs, addressing main issues.</i></p>	
	<p>I.3.1.3.1:</p>	<p>TSE4ALLM project relevance to the target groups of the private sector needs and constrains</p>	<p>Desk Research, Field Interviews</p>
<p>I.3.1.3.2:</p>	<p>TSE4ALLM project relevance to the CSO, farmers and rural population of Mozambique</p>	<p>Desk Research, Field Interviews</p>	
<p><i>EQ3.2: Is the UNIDO support to the TSE4ALLM project coherent with the UNIDO Policy and other donors policies and support?</i></p> <p><i>Evaluation Criterion:</i> COHERENCE</p>	<p>JC3.2.1:</p>	<p><i>the UNIDO support for the TSE4ALLM project has been coherent with the UNIDO Policy, GEF Priorities and other donors' policies and support.</i></p>	
	<p>I.3.2.1.1:</p>	<p>Degree of coherence with UNIDO Strategy and policies in infrastructure of RE Systems</p>	<p>Desk Research</p>
	<p>I.3.2.1.2:</p>	<p>Degree of coherence & synergy with other international donors working in the RE System sector in Mozambique</p>	<p>Desk Research, Field Interviews</p>
<p><i>EQ3.3: To what extend has the TSE4ALLM project achieved its targeted results?</i></p> <p><i>Evaluation Sub-Criterion:</i></p>	<p>JC3.3.1:</p>	<p><i>TSE4ALLM project has reached its specific objectives and contribute to increase renewable energy participation through the adoption of sola PV & Wasted-Energy solution in SMEs farms & Agroprocessing facilities.</i></p>	

EFFECTIVENESS	I.3.3.1.1:	Identification of conducive policy and regulation environment	Desk Research, Field Interviews
	I.3.3.1.2:	Capacity building and knowledge management of RE market players and enablers.	Desk Research, Field Interviews
	I.3.3.1.4:	Technology demonstration and scaling up	Desk Research, Field Interviews
	JC3.3.2:	<i>TSE4ALLM project has been implemented in a cost-effective manner</i>	
	I.3.3.2.1:	The budget was adapted and coherent with the scale and duration of the activities, and economies of scale were used when possible/useful.	Desk Research, Field Interviews
	I.3.3.2.2:	Degree of coherence & synergy with other international donors working in the RE sector in Mozambique	Desk Research, Field Interviews
<i>EQ3.4: Has the TSE4ALLM project been efficiently implemented?</i>	JC3.4.1:	<i>TSE4ALLM project was managed satisfactorily, allowing its optimal prospects to achieve its objectives</i>	
Evaluation Sub-Criterion: EFFICIENCY	I.3.4.1.1.	Quality of Project Management (work planning, troubleshooting, adaptability to change, etc.)	Desk Research, Field Interviews
	I.3.4.1.2.	Quality of Programme reporting (use of SMART indicators, clear monitoring of the process)	Desk Research, Field Interviews
	I.3.4.1.3.	Quality of Programme monitoring & evaluation (including on cross-cutting issues)	Desk Research, Field Interviews
<i>EQ3.4: Has the TSE4ALLM project been efficiently implemented?</i>	JC3.4.2:	<i>TSE4ALLM project provided and supported an optimal establishment of conducive policy and comparable to best practices for similar policies, strengthen capacity building and technology demonstrations.</i>	
Evaluation Sub-Criterion: EFFICIENCY (Continuation)	I.3.4.2.1.	Identification of a conducive policy and regulatory environment for the promotion and integration of RE systems	Desk Research, Field Interviews
	I.3.4.2.2.	Capacity building and knowledge management of RE market players and enablers.	Desk Research, Field Interviews
	I.3.4.2.3.	Implemented technologies demonstrations in rural areas	Desk Research, Field Interviews
	JC3.4.3:	<i>TSE4ALLM project implementation was efficient</i>	
	I.3.4.3.1.	Efficiency in the realization /implementation of the activities	Desk Research, Field Interviews
	I.3.4.3.2.	Efficiency in pilot awarding and pilot management	Desk Research, Field Interviews

	I.3.4.3.3.	Management of external advisory service providers	Desk Research, Field Interviews
	I.3.4.3.4.	Efficient communication with the main actors and beneficiaries of the project	Desk Research, Field Interviews
Evaluation Question & Evaluation Criterion	JC Indicator No.	Judgement Criteria and Indicators	Main Evidence Sources
<i>EQ3.5: What are the sustainability prospects of the TSE4ALLM project?</i>	JC3.5.1:	<i>TSE4ALLM project results and impact are disseminated and visible for maximum impact and success of the RE Systems supporting the growth of Mozambique.</i>	
Evaluation Sub-Criterion: SUSTAINABILITY OF BENEFITS	I.3.5.1.1.	Identification of the sustainability of the impact generated	Desk Research, Field Interviews
	I.3.5.1.2.	Identification of focus and effort provided by the TSE4ALLM project to secure the sustained impact	Desk Research, Field Interviews
<i>EQ 3.6: What is the overall impact (positive or negative) of the TSE4ALLM project?</i>	JC3.6.1:	<i>TSE4ALLM project has reached its planned impact of generating a conducive policy and regulatory environment for the adoption of RE Systems, building capacity of the RE market players and enablers (institution and personnel).</i>	
Evaluation Sub-Criterion: IMPACT	I.3.6.1.1.	Facilitated and strengthened government and RE market players' institution	Field Interviews
	I.3.6.1.2.	Impact of the project on Government's capacity to support the RE Systems	Field Interviews
	I.3.6.1.3.	Impact of the project on Government's support to PMEs and relevant organizations	Field Interviews
	I.3.6.1.4.	Contribution to the Sustainable Development Goals	Field Interviews
	I.3.6.1.5.	Impact on the coverage at National Level of Government support particularly on rural areas	Field Interviews
<i>EQ4: To what extent has the TSE4ALLM implementation contributed to better gender equality?</i>	JC4.1:	<i>TSE4ALLM project has contributed to mainstream gender equality and gender inclusion in its implementation.</i>	
Evaluation Criterion: GENDER MAINSTREAMING	I.4.1.1:	Gender inclusion in the activities implemented in the framework of the TSE4ALLM project	Desk Research, Field Interviews
	I.4.1.2:	Number of trained women in the capacity building activities	Desk Research, Field Interviews
	I.4.1.3:	Number of women entrepreneurs that participated in the implementation of the pilot demonstrations	Desk Research, Field Interviews

<p><i>EQ5: What has been the quality of the project implementation management</i></p> <p>Evaluation Criterion: PROJECT IMPLEMENTATION MANAGEMENT</p>	<p>JC5.1:</p>	<p><i>TSE4ALLM project has a good project implementation management</i></p>	
<p>Evaluation Question & Evaluation Criterion</p>	<p>JC Indicator No.</p>	<p>Judgement Criteria and Indicators</p>	<p>Main Evidence Sources</p>
<p><i>EQ 5.1: What is the overall level of result-based used in work planning and decision making of the TSE4ALLM project?</i></p> <p>Evaluation Sub-Criterion: RESULT-BASED MANAGEMENT (RBM)</p>	<p>JC5.1.1</p>	<p><i>TSE4ALLM project has used result-based approach to carry out its work planning and decision-making process</i></p>	
	<p>I.5.1.1.1:</p>	<p>Identification of result-based analysis on the work planning of the TSE4ALLM implementation</p>	<p>Desk Research, Field Interviews</p>
	<p>I.5.1.1.2:</p>	<p>Identification of result-based analysis on the decision-making process during the implementation of the TSE4ALLM</p>	<p>I.5.1.1.2:</p>
	<p>I.5.1.1.3:</p>	<p>Explicit use of result-based analysis on the TSE4ALLM project management</p>	<p>Desk Research, Field Interviews</p>
<p><i>EQ 5.2: What has been the overall level of use (positive or negative) of the TSE4ALLM project monitoring information?</i></p> <p>Evaluation Sub-Criterion: MONITORING & REPORTING (M&R)</p>	<p>JC5.2.1</p>	<p><i>TSE4ALLM project monitoring information has been used in a proactive and diligent way to improve performance and inform stakeholders</i></p>	
	<p>I.5.2.1.1:</p>	<p>Identification of continuous monitoring processes on the progress achieved of the TSE4ALLM project</p>	<p>Desk Research, Field Interviews</p>
	<p>I.5.2.1.2:</p>	<p>Identification of used monitoring information on improving performance</p>	<p>Desk Research, Field Interviews</p>
	<p>I.5.2.1.3:</p>	<p>Type of recording used for the continuous monitoring gathered information</p>	<p>Desk Research, Field Interviews</p>
	<p>I.5.2.1.4:</p>	<p>Type of communication used for conveying the information of the continuous monitoring to the stakeholders</p>	<p>Desk Research, Field Interviews</p>
<p><i>EQ6: What has been the TSE4ALLM project's partners level of performance?</i></p> <p>Evaluation Criterion: PERFORMANCE OF PARTNERS</p>	<p>JC6.1:</p>	<p><i>TSE4ALLM project's partners had fulfil their assigned role and responsibilities in the implementation of the project</i></p>	
	<p>I.6.1.1:</p>	<p>Assessment of UNIDO's performance (coordinator and implementing role)</p>	<p>Desk Research, Field Interviews</p>
	<p>I.6.1.2:</p>	<p>Assessment of National counter parts' performance (MITADER, MIREME, MASA, MEC, FNDS, FUNAE, SACREEE)</p>	<p>Desk Research, Field Interviews</p>
	<p>I.6.1.3:</p>	<p>Assessment of local implementing partners (CSO, Associations, private sector, etc.)</p>	<p>Desk Research, Field Interviews</p>

	I.6.1.4:	Assessment of donors' performance (role and financing support)	Desk Research, Field Interviews
EQ7: What has been the TSE4ALLM project's level of ESS? <i>Evaluation Criterion:</i> ENVIRONMENTAL & SOCIAL SAFEGUARDS (ESS) DISABILITY & HUMAN RIGHTS	JC7.1:	<i>TSE4ALLM project has built a good level of environmental & social safeguards, disability and human rights</i>	
Evaluation Question & Evaluation Criterion	JC Indicator No.	Judgement Criteria and Indicators	Main Evidence Sources
EQ7.1: What has been the TSE4ALLM project's level of environmental safeguards? <i>Evaluation Sub-Criterion:</i> ENVIRONMENTAL SAFEGUARDS	JC7.1.1:	<i>TSE4ALLM project has built and maintained a good level of environmental safeguards.</i>	
	I.7.1.1.1:	Identify reduction of threats emanating from the TSE4ALLM project implementation in the environment	Desk Research, Field Interviews
	I.7.1.1.2:	Identify positive /negative changes in the status of the environment due to the TSE4ALLM project	Desk Research, Field Interviews
	I.7.1.1.3:	Identify positive income generation on sustainable energy management for communities, business or enterprises due to the TSE4ALLM project implementation	Desk Research, Field Interviews
EQ7.2: What has been the TSE4ALLM project's level of social safeguards? <i>Evaluation Sub-Criterion:</i> SOCIAL SAFEGUARDS	JC7.2.2:	<i>TSE4ALLM project has built and maintained a good level of social safeguards, including disability and human rights</i>	
	I.7.1.2.1:	Identify if the human-rights approach was used in the implementation of the TSE4ALLM project activities	Desk Research, Field Interviews
	I.7.1.2.2:	Identify changes in the access to employment, education and training due to the TSE4ALLM project implementation	Desk Research, Field Interviews
	I.7.1.2.3:	Identify enhancement of environment and human right in individuals, communities, and society due to the TSE4ALLM project implementation	Desk Research, Field Interviews

6.3. Annex 3: List of Documentation Reviewed

The following list is of the documents provided by the UNIDO project manager. They are set by files accordingly to the drive access layout in order to be retrieved easily.

0Evaluation Manual file

- 1 Evaluation Policy (2021).pdf
- 2 Guidance for Inception Report August 2023 (1).word
- 3 Template for FINAL REPORT Project Evaluation August 2023.docx
- 4 UNIDO_Evaluation_Manual_Rev_Jul-2023.pdf

01-Project document file

- 5 UNIDO GEF 6 Mozambique 9225 CEO re-submission app.pdf

02-Project planning and deliverables file

Annual Reports file

- 6 9225_AR 2021 Final.docx
- 7 9225_AR 2022 Final.docx

ClimateScience file

- 8 PartnershipMOU_CZ _ UNIDO_Mozambique_Jan2021.pdf

COMFAR file

2021-2022 file

- 9 Aide Memoire - Maputo Workshop April 2022 UM vm.docx
- 10 Aide Memoire Comfar 2022.docx
- 11 Comfar Inventory 2020.xlsx
- 12 COMFAR trainer_Umesh MENON_Maputo Mozambique April 2022_vm.docx
- 13 List of Participants 16-20Mar - COMFAR.docx

Training materials and agenda file

- 14 Beginners' and Advanced Time Schedule.docx
- 15 Electron Case.docx
- 16 Ferrocite Case for Advanced Course.docx
- 17 Nyumba JV case for Advanced Course.docx
- 18 Peanut Processing in Mozambique.docx
- 19 Tomato.docx
- 20 IOM_Tech_Evaluation-of_bids_10Solarkits Moz.docx
- 21 Order Form UEM.pdf
- 22 Programme_Regist Form_A_05_2020.pdf
- 23 Programme_Regist Form_B_05_2020.pdf

Guarantee Fund file

BCI_Guarantee Fund file

- 24 Aide Memoire_SME Finance training_11 May 23.docx
- 25 Concept Note BCI SUPER.pdf
- 26 CONVITE_LINHA CREDITO UNIDO.pdf
- 27 Credito Super Process Workflow V2.pdf
- 28 Renewable.Energy.MSMEs.Financing.pptx

Borrowers file

- 29 Checklist - CREDITO SUPER en.docx

- 30 Concept Note - Tsangano.docs
- 31 Shine Water-Promotional-Piece-D1 VM 2809.docs
- 32 Submissao Propostas-CREDITO SUPER_ SHINE WATER.pdf
- 33 Sumissão de Proposta.pdf
- Contract file**
- 34 271119 BCI contract - final.docs
- 35 Signed Contract BCI_UNIDO_FUNAE.pdf
- Lettre to BCI file**
- 36 UNIDO letter_to_BCI_Guarantee Fund.docs
- Lunching April 2021 file**
- 37 PROPOSTA DE PROGRAMA 2021.docs
- Process file**
- 38 Process Worflow Timeline.pptx
- ToRs file**
- 39 7000003623 - Terms of Reference.pdf
- 40 TOR DRAFT8 (002)_LD.docs
- Credit line launching file**
- 41 CONVITE_LINHA-CREDITO-UNIDO.png
- 42 Credito Super_Process Workflow and supporting systems.pdf
- 43 Invitation_credit line.docs
- Default payments file**
- TSANGANO AGRIFARMS SOCIEDADE UNIPessoal-LIMITADA FILE**
- 44 Annex 1 and A.pdf
- 45 Annex A Request for payment.pdf
- 46 Annex A.1- Statement requesting for payment - Tsangano Lda.pdf
- 47 Carta comunicação.-protocolada.pdf
- 48 Client´s letter- Carta do socio-gerente.pdf
- 49 Declaration(s) for issuance of a writ of execution- Posição devedora do cliente.pdf
- 50 Response Letter to BCI's Request for Payment of a Non-performing Loan under the Guarantee Fund.docs
- 51 Response Letter to BCI's Request for Payment of a Non-performing Loan under the Guarantee Fund.pdf
- GF Evaluation file**
- 52 EVALUATION STUDY - ROAD MAP.email
- 53 EVALUATION.REPORT.GF.ANNEXURES.pdf
- 54 MOZAMBIQUE.GF.EVALUATION.REPORT.pdf
- 55 RE EVALUATION STUDY - ROAD MAP.email
- TEC file**
- 56 Concept TSE4ALLM Cluster.docs
- 57 Credito Super Process Workflow (1).pptx
- 58 ToR TSE4ALLM Cluster.docs
- 59 Aide Memoire_SME Finance training_11 May 23.docs
- 60 Concept Note BCI SUPER.pdf
- 61 CONVITE_LINHA CREDITO UNIDO.pdf
- 62 Credito Super Process Workflow V2.pdf

- 63 Renewable.Energy.MSMEs.Financing.pptx
Nov-workshop file
- 64 Concept Note - Inaugural Meeting v2.docx
65 TEC-MEETING-MINUTES-20-11-19-Final.docx
Presentations file
- 66 Mozambique_Cluster development Strategy.pptx
67 Mozambique_short.pptx
68 Mozambique_v4.pptx
69 Portfolio Awareness Briefing Dialogue final version 25November.pptx
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Private sector guidelines file
- 71 Consultation Campaign Report Final 11 March A.docx
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Standards development file
- 71 FKDS 2951-2022- Standards.pdf
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Workplans file
- 73 Workplan 2020 (1).xlsx
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03-Project Steering Committee (PSC) minutes file
- PSC_5th May 2022 file**
- 75 9811_PSC-MEETING-MINUTES-05-May-22.docx
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04-Project Implementation Reports (PIRs) file
- FY19 PIR file**
- 77 9225_Brochure Mozambique GEF_v1.2.pdf
78 9225_Brochure Mozambique GEF_v1.3_portug.pdf
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Inception Report file
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- 95 Stakeholder info.docs
Procurement file
Centralized file
2020_RFx No. 700004399 file
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- 96 GPS - Cronograma UNIDO 2011
97 GPS DRAWINGS 2011
Signed contrat file
- 98 Signed Contract.pdf
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- 99 INVOICE Nº 1 - Contract -3000085757
100 Letter to UNIDO 15Apr21
101 Revised Workplan 15Apr21
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1. Advance payment expenses 40020905 file
- 125 ANEXO23.pdf
126 Extrato 08.08.22.pdf
2. Progress report phase 1 file
- 127 Invoice nº 2
3. Final report phase 1 file
- 128 Final Report Fhase One (1).docs
129 Final Report - Phase One.pdf
130 Invoice 3.pdf
131 Signed Completion Report 15Jun23.pdf
4. First Progress report phase 2 file
- 132 Factura 4.pdf
133 First Progress Report Phase Two.docs
134 First Progress Report Phase Two.pdf
5. Second progress report phase 2 file
- 135 Factura 5.pdf
136 Second Progress Report Fhase Two_ Rev.docs

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10 6000024432 Associação Nathelaca file
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- 140 Solar Panels quotation.pdf
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- 143 Solar Panels quotation.pdf
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- 149 MUTXELACANE.pdf
- 150 Solar Panels quotation.pdf
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- 152 Mill Grinder Machine quotation.pdf
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16 6000024423 Associação Mulheres Libertadas file
- 154 A. Mulheres Libertadas.
- 155 MULHERES LIBERTADAS.pdf
- 156 Solar Panels quotation.pdf
17 6000024417 Associação MugemaDois file
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18 60000244131 Cooperativa Agraria de Nauela file
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19 6000024418 Associação AJEN file
- 159 AJEN.pdf
- 160 Mill Grinder Machine quotation.pdf
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23 6000024306 Ministry of Agriculture file
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24 6000024392 Grow in Peace Limited-Consortium Lead file
172 Alvara grow.pdf
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25 6000024427 Associação Acami file
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26 6000024430 Associação Anapepe file
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29 PV Water Pumping Consortium file
180 A Touch of Class - documents.pdf
181 Brief description of the companies.pdf
182 CEOI No 7000004399_Annex 1.pdf
183 Consortium Agreement- Declaration.pdf
184 COOPERATIVA OURO VERDE - documents.pdf
185 EREL - Documents.pdf
186 Sunlight pump Datasheet.pdf
30 CAA Communication file
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- 201 Sabetudo Mission and Vision.pdf
- 202 Statutes Cooperative Musaude.pdf
- 203 Term of confidentiality.pdf
32 AGRICOA COOP file
- 204 CEOI No 7000004399_Annex 1 Word Version (1).doc
33 Ecolog file
- 205 00_Cover Letter - Ecolog International.pdf
- 206 01_Attachment 1. Permits and Licenses - Ecolog.pdf
- 207 02_Attachment 2. Company Profile - Ecolog International.pdf
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- 208 GPS DRAWINGS 2011.pdf
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- 210 Technical drawing.doc
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- 212 IOM_Evaluation_of_CEOI_2 Dec 2020.doc
- 213 IOM_Evaluation_of_CEOI_4 Dec 2020_AM.pdf
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Annex 2_TORS RFP 2021_VO.docx
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AFORAMO reporting- 40023410 file

1st prss file

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- 225 BANK DETAILS.pdf
- 226 INVOICE 2.pdf
- 227 Invoice-2.pdf
- 228 RecAMaganhice.pdf
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- 231 RECIAFORAMO.pdf
- 232 RecMachZul.pdf
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- 234 RecPale.pdf
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- 236 AFORAMO First Invoice - Rev1.pdf
- 237 BIF Aforamo Verified 29Aug22.pdf
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- 239 BIF Charis.pdf
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MAKOMANE-ADM reporting 40023411 file

- 241 Bill of Quantities.docx
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- 243 invoice 1 unido adm.pdf
- 244 MAKOMANE ASM 1st trans bank confirmation.pdf
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- 246 UNIDO MAKOMANE Inception Report.docx
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1st Progress report file

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- 249 Copias de Cheque.pdf
- 250 Ficha 3a -Relatorio de Conclusao do Furo.pdf
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- 255 Fuel.pdf
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- 260 Recibo Fonte Pura.pdf
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- 264 Annex 2_Contrato Biogas.pdf
- 265 Annex 3_Contrato de Geofisico.pdf
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- 269 INVOICE II.pdf
Signed contracts file
- 270 AFORAMO-SIGNED-CONTRACT.pdf
- 271 Makomane ADM UNIDO Contract.pdf
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- 272 REVIEW _RFx No 1100161767-2.xlsx
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- 273 UNIDO budget 1811.xlsx
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06 ERMIC Limited, Mozambique 20KW Proposal file
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- 275 Certidao Negativa.jpg
- 276 Despacho ADM.jpg
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10 SATAREM MANDATO Oscar, Mozambique
- 276 satarem power plant.pptx
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13 Capital Services, Mozambique
- 277 Sollicitacion Proposal RFX Unido.jpg
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- 278 Payment schedule.pdf
ADPP file
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- 280 Final Report Signed.pdf
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- 282 Report ADPP N2 on Tete to UNIDO.doc
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- 285 Final Report Signed ADPP Mozambique.pdf
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- 295 Signed internal invoices.pdf
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- 296 Translated Letter Minister.pdf
IoM file
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Revised documents file
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Guarantee fund file
Contrat amendment file
- 297 Amendment 1 - UNIDO Contract No 3000073535.pdf
- 298 MoA_UNIDO and FUNAE_Crédito-Super_May 2023_GCA 27042023.doc
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- 301 Re Pedido de Extensao do Acordo Tripartido.email
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- 303 Signed Contract BCI_UNIDO_FUNAE.pdf
Inception report & Invoice
- 304 FUNAE Invoice.pdf
- 305 MoU Signed FUNAE UNIDO.pdf
- 306 Scan_20210412150321_0721_001.pdf
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- 307 ToC Kamaleon.pdf
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- 312 IOM_Tech_Evaluation-of_bids_10Solarkits Moz.doc
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- 319 ENE_ROT_C_Procurement request template_COMFAR training Venue 28Mar.doc
- 320 Gloria-Hotel.pdf
- 321 POLANA-Proforma UNIDO 18-22 Apr.pdf
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- 330 ASR_150263_FI20_40023253_IAMZ2_20220404044503.pdf
- 331 Comparative-statement- Laptops for the TEC.xlsx
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- OA 2018**
- 334 16022018_Vicente_Request Form and Estimated Costs for Operational Cash Advance_.xlsx
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- 337 Expense Report .email
- 338 RE Expense Report excel.email
- OA closed in Feb**
- no documents
- OA 2019**
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- OA 2020**
- 340 150263 OA request 2020.xlsx
- 341 OCA expense report Aug. 2020.xlsx
- OA 2021**
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- 343 Request Form and Estimated Costs for Operational Cash Advance_Nov & Dec 2021-2.xlsx
- Website**
- 344 DotCom_Fin Proposal.pdf
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- 347 Soares_Tech_&Fin Proposal.pdf
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- 350 Tech Evaluation.pdf
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- 352 ToR Project Website en.doc

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Project extension requests

Oct 21 - Oct 22

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363 Letter_UNIDO-BCI_Mr. Costa.pdf

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Letter to GEF OF_Moz

no documents

Recruitment

Documentation received during and after the Field Mission

365 Joint Declaration UNIDO-UEM signed JD.pdf

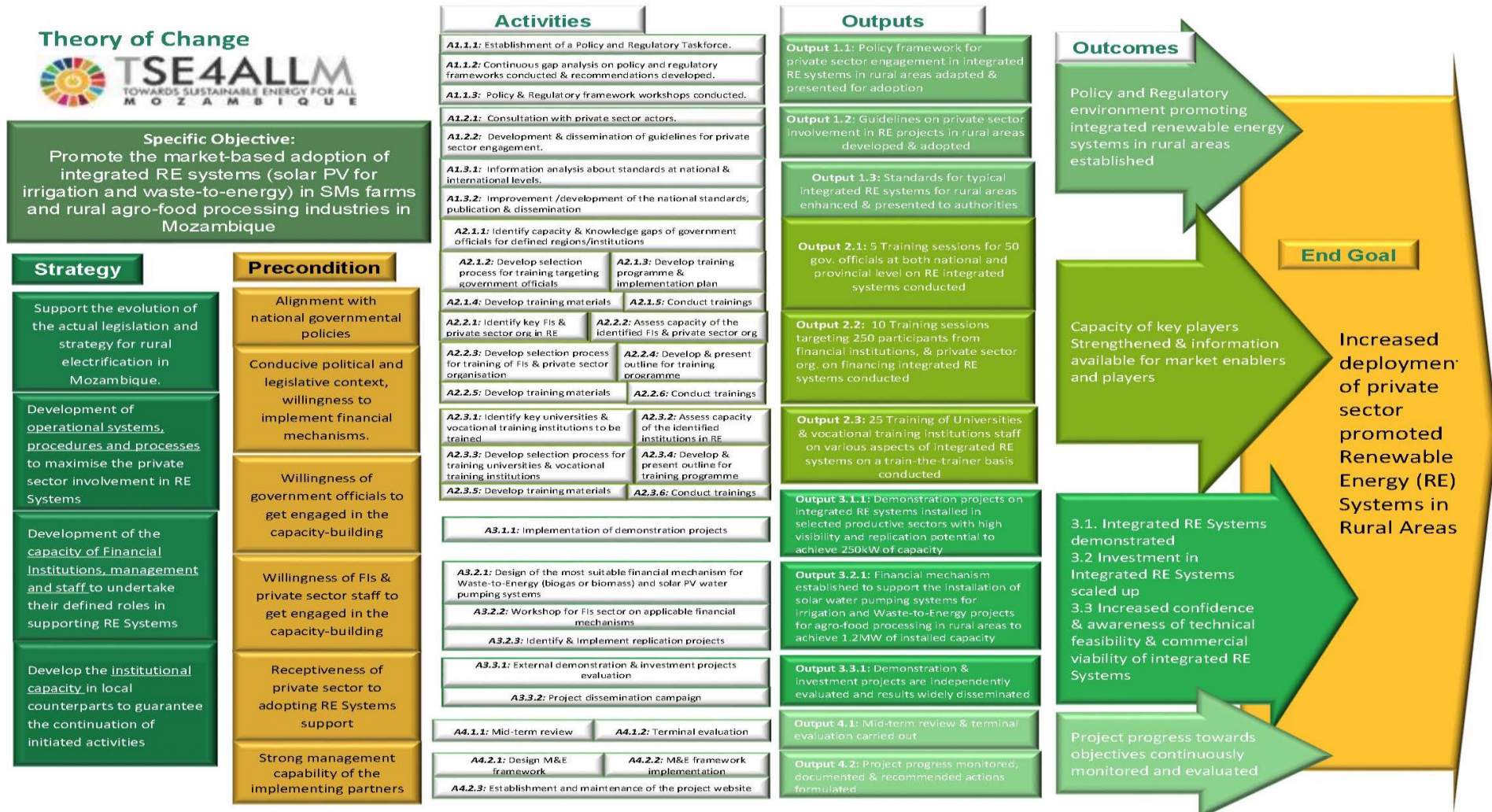
6.4. Annex 4: List of Stakeholders Consulted

Stakeholder/ Organisation	Contact person	Short Description	Time	Location
20/11/2023				
UNIDO	Mr. Vicente Matsinhe	National Project Coordinator	11:00	UNIDO Office
	Ms Elisabeth Kisakye	Project Communication officer		
	Mr. Jaime Comiche	UNIDO country representative - designed and supervising project	12:00	
FUNAE	Mr Filipe Mondlane	Advisor to the Board, previous focal point for the project	14:00	FUNAE ,Maputo
	Ms. Mirela de Almeida	Responsible for private sector development department		
	Mr. Mussa Mane	Responsible for finance		
	Mr. Americo Alvaro	Future Focal point for the project		
21/11/2023				
MTA	Mr. Eduardo Baixo	Operational Focal Point - GEF at the Ministry of Land and Environment (MTA)	9:00	MTA/DMC, Maputo
MIREME	Mr. Alfredo Amisse	Member of the TEC	14:00	MIREME, Maputo
	Mr. Issufo Juma	Member of the TEC		
UNIDO	Mr. Jaime Comiche	UNIDO country representative	16:00	UNIDO Office
22/11/2023				
Quinta IRINI	Ms Mariza Reis Esculudes	Pilot project beneficiary: Quinta IRINI; owner and beneficiary of pilot project and supporting Government partner from DNDEL	10:00	Mafuiane Locality, Namaacha district, Maputo province
MADER/DNDEL	Mr. Tiago Luis			
ADPP	Mr. Jose Chiburre	Pilot Project beneficiary: ADPP implemented the farmers' club irrigation project targeting the provinces of Zambézia, Sofala and Tete	14:00	Matola, Maputo Province
	Mr. Erik Schurmann			
23/11/2023				
DNDEL / MADER	Mr. Tiago Luis	Member of the PSC; Co-implementer of a pilot project (Quinta Irini), Ministry of Agriculture (MADER)	9:00	MADER, Maputo
	Mr. Emídio Bié			
AFORAMO	Joao Wilson Bispo	Pilot project beneficiaries: Solar system pumps for private water distributors (private water supply provider); AFOREMA organisation lead and beneficiaries (members of AFOREMA)	11:00	Matola, Maputo Province, multiple locations
	Adriano Chirute			
	Francisco Guambe			

	Nolan Pale			
24/11/2023				
CHARIS	Mr. Agostinho Magenge	Pilot Project beneficiary: BioGas for cooking domestic, small and medium industry; private beneficiary, CHARIS organisation representatives, UEM professor and students for technical support	9:00	Maputo Province
	Mr. Larson Cândido			
	Mr. Osvaldo Tembe			
	Mr. Salomao Vutane			
	Mr. Adolfo Condo (Prof UEM)			
	Ms. Daniela Mandlate (UEM student)			
Sheine Water	Mr. Ali Casimo	BCI SUPER Credit line beneficiary: Solar-powered water supply (private water distributor)	13:00	Matola, Maputo Province
27/11/2023				
Super Kwick/ BCI investment loan	Mr. Aldo Gomes Dos Santos Bauque	BCI SUPER Credit line beneficiary: loan to improve irrigation system for cashew and macadamia production	9:00	Chilengue, Macia, Gaza province
CHARIS	Mr. Jaime Izaias	Pilot project beneficiary: community beneficiary for domestic biogas system for domestic cooking / micro-industry	15:30	Quissito, Zavala district, Inhambane province
	Mr. Alberto Mazaia			
28/11/2023				
BRILHO Energy Africa project	Mr Pedro Moleirinho	Brilho Energy Africa project aiming to improve and increase the access to energy for people and businesses, financed by UKAid and Swedish Embassy, implemented by SNV; senior technical advisor	8:00	WhatsApp interview
CHARIS	Mr. Samuel Junior Gove	Pilot Company beneficiary: BioGas for small industry / cooperative processing mandioca	9:00	Inharrime, Inhambane Province
	Mr. Alberto Mazaia			
29/11/2023				
BCI	Ms Epifania Gove	BCI bank partner for SUPER Credit line implementation; Energy Desk responsible and Director for department of big companies	9:00	BCI office, Maputo
	Mr. Hugo Tavares Costa			

MTA	Ms. Dulcineia Ximucane	Participated in project monitoring mission for MTA	12:00	MTA, Maputo
KfW	Mr. Jens Dorn	Project manager at KfW, responsible for supporting set-up of BCI energy desk and previous renewable energy credit line	16:00	KfW office, Maputo
30/11/2023				
GIZ EnDev programme	Ms. Johanna Hartmann	Advisor to EnDev programm in Mozambique, established the Fund for Sustainable Access to Renewable Energy (FASER)	9:00	GIZ office, Maputo
SPEED+/DAI	Ms. Emilia Fone / Mr. Armando Abacar / Mr. Matiquisana Matos	project and consulting implementing SPEED+ project for private sector development and access to finance; started supporting FUNAE with TA for credit line continuation	10:45	DAI Office, Maputo
UEM	Dr. Antonio José Cumbane	Specialist for renewable energy at UEM, previous advisor for setting up the clusters under component 2	12:15	UNIDO office, Maputo
ADPP	Mr. José Chiburre / Mr. Sergio Muchanga	planning of capacity building measure for project	13:30	UNIDO office, Maputo
01/12/2023				
UNIDO	Mr. Vicente Matsinhe	Wrapping up discussion with UNIDO country representatives	9:00	UNIDO Office, Maputo
06/12/2023				
UNIDO	Mr. Alaeldin Mohamed	Project Management Assistant	13:00	online
13/12/2023				
UNIDO	Mr. Jossy Thomas	Project Director	11:30	online
15/12/2023				
project stakeholders	all project stakeholders involved and interviewed	Debriefing Presentation to all project stakeholders	10:00	online

6.5. Annex 5 Project Theory of Change /Logframe



6.6. Annex 6: Primary Data Collection Instruments

This evaluation will use the following data collection instruments: a) interviews (semi structured interviews), b) focus groups, c) questionnaires and surveys, d) document reviews.

INTERVIEW QUESTIONS

These interview questions are a draft tailored set of questions that will gather the knowledge, experience and opinion of the interviewee in relation the TSE4ALLM project.

All interviews will use the basic information questions designed for the identified four groups of stakeholders.

Group 1 – UNIDO relevant personnel

Basic information questions for UNIDO officers

What was your position at the time you got involved in the project?

At what moment did you join the project? (at beginning, after 6 months of implementation/after a year of implementation, etc. at the end?)

What were your role and responsibilities for the TSE4ALLM? Did the role and responsibilities changed (increment/ reduce)?

Who /what do you think has contributed to the challenges/problems/issues faced in the implementation of the TSE4ALLM?

According to you, who should have been responsible for fixing them in the implementation? (Delays, lack of ownership, limited technical capacity, etc)

What is your opinion on the way the project has been implemented by the governmental counter parts?

What would you do different?

What do you think is still needed to do?

What do you consider is your next step?

Group 2 – Governmental Officials of the Ministries and agencies involved in the project

Basic information questions for Government stakeholders

What was your position at the time you got involved in the project?

At what moment did you join the project? (at beginning, after 6 months of implementation/after a year of implementation, etc. at the end?)

What were your expectations when enrolling the project?

What are the key wins according to your opinion?

What have been the benefits for your institution and ecosystem?

What was the role you were responsible for? Did the role changed (increment/ reduce in expected responsibility)?

What were the challenges you faced in relation to your responsibilities in the implementation?

Who /what do you think has contributed to the faced challenges/problems/issues?

According to you, who should have been responsible for fixing them in the implementation? (Delays, lack of ownership, limited technical capacity, etc)

What is your opinion on the way the project has been implemented?

What would you do different?

What is your opinion on the way the project has been implemented by UNIDO? Other partners?

What do you think have been the benefices of the implementation for advancing the use of renewable energy system?

In your opinion what still needs to be done to fully achieve the adoption of RE Systems in Mozambique?

Group 3 – Financial organisations

Basic information questions for financial organisations

What is your role and position?

What are your responsibilities in the design of financial initiatives?

What do you think have been the benefices of the BCI-GF institutionally and for the financial ecosystem?

What do you think is still needed to financially do to promote RE systems?

What do you consider should be the next step?

Group 4 – Direct Beneficiaries implementing the pilot demonstration projects

Basic information questions for stakeholders implementing the pilot demonstrations

What was your role and position at the time you joint the pilot demonstration project?

What were your responsibilities in the implementation?

What do you think have been the benefices of the implementation personally and for the community?

Would you continue using them?

What do you think is still needed to do?

What do you consider is your next step?



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