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TE: Increased Energy Access for Productive Uses Through the Development of Small Hydropower in Rural Areas in Madagascar UNIDO Project 120094, GEF ID: 5317

Office of Evaluation and Internal Oversight

OFFICE OF EVALUATION AND INTERNAL OVERSIGHT
INDEPENDENT EVALUATION UNIT

Independent Terminal Evaluation of INCREASED ENERGY ACCESS FOR PRODUCTIVE USES THROUGH THE DEVELOPMENT OF SMALL HYDROPOWER IN RURAL AREAS

UNIDO Project 120094, GEF ID: 5317

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INDUSTRIAL DEVELOPMENT ORGANIZATION

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Illustrations

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Evaluation team:

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Abbreviations and Acronyms

Abbreviation	Meaning
ADER	Agence de Développement et l'Electrification Rurale
BETC	Bureau d'Etudes et de Travaux de Construction
BNCC	Bureau Nationale des Changements Climatiques
CEAS	Centre Ecologique Albert Schweitzer
ESIA	Environmental and Social Impact Assessment
ESPA	Ecole Supérieure Polytechnique d'Antananarivo
EU	European Union
FNED	Fonds National pour l'Electricité Durable
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Gesellschaft Fur Zusammenarbeit
GoM	Government of Madagascar
IA	Implementing Agency
ICSHP	International Center for Small Hydropower Plant
ISMT	Institut Supérieur de Management et de Technologie
JIRAMA	Jiro Sy Rano Malagasy
KfW	Kreditanstalt für Wiederaufbau
M&E	Monitoring and Evaluation
MESD	Ministry of Environment and Sustainable Development
MEH	Ministry of Energy and Hydrocarbon
MSW	Municipal Solid Waste
MTE	Mid-term Evaluation
MTR	Mid-term Review
NAMA	Nationally Appropriate Mitigation Action
NIP	National Implementation Plan
NGO	Non-Governmental Organization
NPC	National Project Coordinator
NPM	National Project Manager
ORE	Office de Régulation de l'Electricité
PEPP	Public Private Platform
PIF	Project Identification Form
PIR	Project Implementation Review
PMU	Project Management Unit
PRF	Project Results Framework
PSC	Project Steering Committee
SHP	Small Hydropower Plant
SME	Small and Medium Enterprise
TOC	Theory of Change
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
WB	World Bank

Executive Summary

The full-size project "Increased energy access for productive uses through the development of small hydropower in rural areas", funded by the Global Environment Facility, was implemented from May 2015 to June 2023 by the United Nations Industrial Development Organization. The main national counterparts were the Ministry of Energy and Hydrocarbons, Agence de Développement et l'Electrification Rurale, and Office de Régulation de l'Electricité.
The main objective of the project was to stimulate the use of small hydropower to reduce GHG emissions and trigger productive use for income generation in line with priorities of GoM, with the overall aim to increase the competitiveness of the Madagascan SME sector and reduce its dependency on fossil fuels. The evaluation covered the whole duration of the project.

Key Evaluation Findings

The in-depth evaluation included: a review of project documents; country visit; and, using a participatory approach, interviews with project personnel, intended beneficiaries, project partners, and other stakeholders involved in the project. Field visit to one of the project sites was also undertaken during the country visit. In addition, the evaluation remotely interviewed some key project partners using available apps. Based on the information available and the findings of the discussions held, the evaluation made the following conclusions:

Relevance: The project is highly relevant to the long-term development plan of Madagascar, and was designed to assist the country to fulfill its obligations towards to United Nations Framework Convention on Climate Change. The project is aligned with GEF strategic priorities in the climate change focal area and with UNIDO`s priorities and mandates.

Effectiveness: Most of the stated project objectives have been achieved. The project has successfully strengthened the policy and regulatory framework for the energy sector. The electricity code, the law on National Sustainable Energy Fund, technical and other guidelines have been developed / adopted. The MRV tool for carbon registry has been developed for all renewable sources. The significant cash co-financing would allow to install SHP capacity for 8.8 MW surpassing the 2 MW capacity planned at design. This much higher capacity would allow the project to exceed the original target for the emission of CO_2 equivalent avoided by more than four times (886,541 tons avoided CO_2eq realized against 112,400 tons avoided CO_2eq planned). The project has also satisfactorily built national capacity and contributed to put in place the financial mechanism for the sustainable SHP replication in the country.

Efficiency: The project duration was originally designed for 5 years, but due delays it was extended by 3 years. The delays were mainly due to a weakness in the design in that the budget allocation for the SHP establishment was largely underestimated. It took time, more than two years, for the project team to secure the co-funding required. In the end, they were very successful as the co-financing secured would allow to install a much higher SHP capacity (8.8 MW against 2 MW). The Covid19 pandemic also delayed the implementation process. On the other hand, the project succeeded in creating synergies with on-going initiatives for the reform of the policy and regulatory framework. The adoption of cost-effective measures, such as applying best options for procurement of goods and equipment or contracting service providers, contributed to cost effectiveness.

Sustainability: As no risks that may jeopardize the project benefits have been identified, the sustainability of project benefits is considered likely. For instance, to ensure the financial sustainability of the SHPs, business plans have been developed taking into consideration all the different economic aspects including the number of potential electricity consumers, electricity tariff, and the operational costs.

UNIDO Backstopping: The role of UNIDO was crucial for the project to meet its objectives. It has taken timely and critical actions and provided technical backstopping by hiring high-quality international and national consultants. In particular, the project was very efficiently and effectively managed by a committed project team led by a dedicated and proactive national project coordinator under the adequate guidance and supervision of the UNIDO PMs.

Cross-cutting issues:
The project made good effort to mainstream the gender dimension in project activities during implementation. A satisfactory involvement and participation of women was evident.

Regarding M&E, the SMART indicators, proposed in the project results framework of the project document, were adequate to allow for proper monitoring and tracking of project results. All PSC meetings and other M&E activities were undertaken, and the relevant reports were submitted in a timely manner. Monitoring of core project indicators was also done.

	Evaluation criteria	**Rating**
A	**Impact (progress toward impact)**	**S**
B	**Project design**	**S**
1	• Overall design	S
2	• Logframe	S
C	**Project performance**	**HS**
1	• Relevance	HS
2	• Coherence	HS
3	• Effectiveness	S
4	• Efficiency	HS
5	• Sustainability of benefits	L
D	**Cross-cutting performance criteria**	**S**
1	• Gender mainstreaming	S
2	• M&E: ✓ M&E design ✓ M&E implementation	S
3	• Results-based Management (RBM)	S
E	**Performance of partners**	HS
1	• UNIDO	HS
2	• National counterparts	HS
3	• Private partners	S
4	• Donor	S
F	**Environmental and Social Safeguards, disability and human rights**	S
	• Environmental & Social safeguards	S
	• Disability and human rights	N/A
G	**Overall assessment**	S

Key Recommendations

Recommendation 1:

Develop a follow up initiative to consolidate the results already achieved for further capacity building and SHP replication.

Recommendation 2:

Involve the Country Offices in the development and implementation of the project to improve the results. This is directly linked to Recommendation 4.

Recommendation 3:

Consider establishing a knowledge hub (e.g. platform linked to UNIDO website) where the results, lessons, and good practices generated through all these initiatives could be uploaded and shared to the international community.

Recommendation 4:

UNIDO, through its Country Office, and the national authorities should closely monitor the construction of the SHPs until completion.

Recommendation 5:

Take the necessary steps to entice MEH and MESD to implement the agreement to create a project website to share project information, results, and lessons.

Recommendation 6:

Collaborate with the authorities to take necessary action to operationalize the FNED, one of the financial instruments proposed, and ensure that the agreed funds are available.

Recommendation 7:

In relation to Recommendation 6, the authorities should consider promoting the project results and lessons in view of encouraging the private sector to invest in the hydroelectricity sector.

Recommendation 8:

Follow-up with MESD/BNCC to put an appropriate mechanism/system in place, for example the training of other officers on the use of the MRV tool – training of trainers - in order to capture data on GHG emissions in the industrial and renewable energy sectors.

Key Lessons Learned

Two key lessons that emerged:
1. A very high sense of ownership was seen among the stakeholders, local authorities, and partners of the project. Involving key project partners and stakeholders early in the implementation process facilitates their support and ensures their commitment. **2**. The project was considerably delayed due to the budgetary requirements outlined in the project design. (Grants: 20% and private sector: 80%). The current practice in Madagascar is the opposite (Grants: 80% and private sector: 20%). It took time for the project to identify co-financiers to secure the short fall of funds. The key lesson is that during the project design stage local specificities in terms of funding culture need to be taken into account in order to avoid such situations.

2. Introduction

2.1 Evaluation objectives and scope

The purpose of the evaluation was to independently assess the project to help UNIDO improve performance and results of ongoing and future programmes and projects. The terminal evaluation (TE) covered the whole duration of the project from its starting date in July 2015 to the estimated completion date in July 2023.

This terminal evaluation had two main objectives. The first was to assess the project's performance based on the criteria of relevance, effectiveness, efficiency, sustainability, and impact. The second was to develop a series of findings, lessons, and recommendations for enhancing the design of new projects and implementation of ongoing projects by UNIDO. The assessment included an analysis of the completion of project activities, delivery of outputs, occurrence of outcomes, and of risk management. The key question was whether the project has achieved or is likely to achieve the main objective "to stimulate the use of small hydropower (SHP) to reduce GHG emissions and trigger productive use for income generation in line with priorities of Government of Madagascar (GoM), with the overall aim to increase the competitiveness of the Madagascan SME sector and reduce its dependency on fossil fuels" in Madagascar. This question was addressed by assessing the extent to which the project contributed to put in place the necessary conditions and conducive environment for the establishment of small hydroelectric power plants through the strengthening of the policy and regulatory framework and building the capacities of the key stakeholders, partners, and beneficiaries.

2.2. Project context

Madagascar has a population of about 28 million (2020) inhabitants and one of the world's highest poverty rates. The country has had a stable government since January 2019 with 30 ministers, 9 of whom are women[1]. New elections are due in 2023. Between 2013 and the onset of the pandemic in 2020 Madagascar's growth averaged 3.5%[2]. According to the World Bank, Madagascar's recession following the pandemic was three times deeper than in other Sub-Saharan African countries and the economy contracted by 7.1%. As a result of the

[1] WB, 2012
[2] https://www.worldbank.org/en/country/madagascar/overview

pandemic and the impact of the war in Ukraine, which affects Madagascar's main trading partner, the European Union, the poverty rate reached a record high. In July 2022, fuel prices had to be raised, which further implicates the population. According to the World Food Programme (WFP), by March 2023 more than 11 million people could be food insecure in Madagascar[3].

The project was developed in a context where Madagascar experienced a period of political transition (2009 - 2013) while implementation started under a new democratic regime in 2014. Since then, the electricity sector became a strategic priority, especially with the objective to improve and extent electricity facilities to rural areas[4].

The Project Identification Form (PIF) was submitted to GEF on 22 February 2013 and identified the following problem: "Madagascar has a considerable land area (587,040 km^2) and heavy annual rainfall (up to 3600 mm)[5] mainly concentrated in the middle, north and north- west of the country. Therefore, the potential for hydropower is correspondingly large: estimated at 7,800 MW, which is the fifth largest hydro potential in the African continent. Yet, just 250 MW is exploited so far which represent only 3% of the potential[6] (ADER). Although in principle several conditions are present to reverse the trend in favor of small hydropower over the fossil-fuel-based alternative (i.e. the political awareness, initial steps in incentive schemes), a number of barriers still prevent an increased uptake of small hydropower (SHP) as viable economic solutions."

Since 2015, the Government has launched together with technical and financial partners (PTF) several reforms in the energy sector. This included a new energy policy and an electricity and grid code. The implementation of this project falls into this reform period and the project hopes to make its best possible contribution to it. Madagascar's main strategic focus for the energy sector lies in its decision to opt for the development of an energy mix based on renewable energy, which includes hydropower (MTR, 2019).

As the MTR states: "It is important to underline that the project was designed and partly implemented in a context of political difficulties which saw amongst others insufficient electricity supply for the country : Malagasy cities served by the Malagasy State Water and Electricity Company "Jiro sy rano Malagasy" (JIRAMA) network have been victims of frequent power cuts and the rural electrification efforts carried out for example by one of the main partners of this project, Agence de Développement de l'Eléctrification Rurale (ADER), has received an increased interest from several PTFs (e.g. the Gesellschaft für Internationale Zusammenarbeit (GIZ)): between 2009 – 2015, 37 electrification projects, 10 of which concern small hydropower projects with mostly less than 150 kW run by eight private operators, were commissioned. Nevertheless, there were only two small of 32 hydro-power plants between 500 -700 kW, further demonstrating the lack of experience for building higher capacity small hydro-power (SHP) plants[7].

[3] https://www.worldbank.org/en/country/madagascar/overview/food
[4] Source the Midterm Evaluation
[5] World Energy, 2010
[6] Source: ADER
[7] https://ader.mg/#help

2.3. Project overview

The project was funded through a GEF grant, amounting to USD 2,855,000 and a total co-financing of USD 14,305,000 (cash and in-kind), which amounted to a total project budget of USD 17,160,000.

The main objective of the project was to stimulate the use of small hydropower (SHP) to reduce GHG emissions and trigger productive use for income generation in line with priorities of GoM, with the overall aim to increase the competitiveness of the Madagascan SME sector and reduce its dependency on fossil fuels. To achieve this objective, the project design proposed three components on policy and regulatory framework, private-led SHP technology demonstration, and capacity strengthened to ensure sustainable replication, which were expected to achieve the following three outcomes:

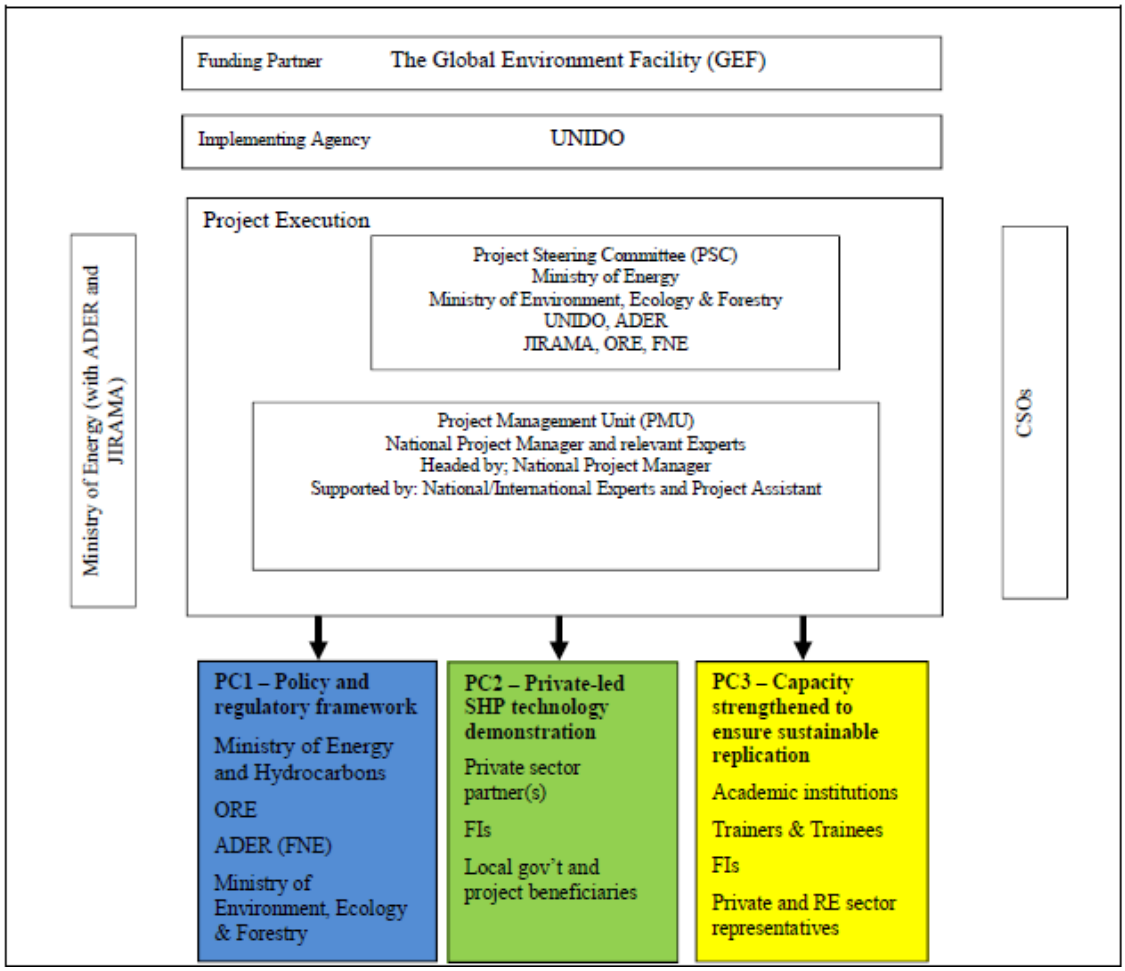
- National Low-Carbon Energy Development Plan developed and tailored initiatives to support SHP in place;
- Construction of SHP based mini-grids for productive use and income generation;
- BAT/BEP implemented in open burning sources; and,

With regard to implementation arrangements, UNIDO was the Implementing Agency (IA) for the project. The Ministry of Energy and Hydrocarbons (MEH), Ministry of Environment and Sustainable Development (MESD), ADER, and the 'Office de Régulation de l'Electricité' (ORE) were foreseen as the main counterparts.

A national Project Management Unit (PMU) was to be established, and was expected to be headed the National Project Manager (NPM). The unit would include other relevant experts such as a technical, financial and capacity building expert would be added as required.

A Project Steering Committee (PSC) was to be established, and was expected to be chaired by MEH. The PSC would include representation from MEEF (i.e. the GEF Operational Focal Point), ORE, and FNED. The figure below summarizes the envisaged project implementation structure.

Figure 1 – Project Implementation Structure



Source: CEO Endorsement document

Project factsheet

Project title	Increased energy access for productive use through small hydropower development in rural areas
UNIDO ID	120094
GEF Project ID	5317
Country(ies)	Madagascar
Project donor(s)	GEF-5
Project approval date/GEF CEO endorsement date	5/27/2015
Planned project start date (as indicated in project document/or GEF CEO endorsement document)	05-27-2015
Actual project start date (First PAD issuance date)	07-24-2015
Planned project completion date (as indicated in project document/or GEF CEO endorsement document)	07-24-2020

Actual project completion date (as indicated in UNIDO ERP system)	07-31-2023
Project duration: Planned: Actual:	5 years 8 years
GEF Focal Areas and Operational Prog.	Climate Change Mitigation (CCM)
Implementing agency(ies)	UNIDO, Energy Technologies and Industrial Applications Division
Government coordinating agency	N/A
Executing Partners	Ministry of Energy and Hydrocarbons (MEH); Ministry of Environment, Ecology, Sea and Forestry (MEEMF), Rural Electrification Development Agency (ADER)
Donor funding	GEF
UNIDO input (in kind, USD)	60,000 (cash) + 60,000 (in-kind)
Co-financing at CEO Endorsement, as applicable	$14,305,000
Total project cost (USD), excluding support costs	$ 2,855,000
Mid-term review date	March – May 2019
Planned terminal evaluation date	May – July 2023

2.4. Theory of change: assessment of the intervention logic

As a GEF5 project, providing a theory of change (TOC), which is a methodology or management tool that explains the process of change by outlining causal linkages in the initiative (its shorter-term, intermediate, and longer-term outcomes), in the project document was not a requirement. Based on the project documentation, the evaluation team developed the TOC displayed below (Figure 1).

The seven outputs as well as the three substantive outcomes included in the TOC are those initially proposed in the project document. The evaluation team has proposed three intermediate states that indicate progress to longer-term impact. It is anticipated that following the project interventions, a clear mechanism/process would be in place that would assist potential investors in the setting up of SHP, and the government of Madagascar would be fully committed to promoting the National Low-Carbon Energy Development Plan (Intermediate State 1). Once the SHP is constructed, it is anticipated that it would be fully operational, providing clean energy at a reasonable price to local communities (Intermediate State 2). It is also foreseen that the private sector, convinced by the business opportunity that the SHP sector represents, benefitting from the incentive mechanisms, would invest to establish SHPs in other rural areas of Madagascar (Intermediate State 3). In the medium-to-long term, it is expected significant climate change mitigation through CO2 reduction, and improvement of the livelihood of rural communities and economic development via access to clean energy (Impact statement).

Three key assumptions have been proposed in the TOC (Figure 1), and they relate to: sustained Government of Madagascar support and leadership from key stakeholders;

private sector has technical and financial ability to help realize demonstration projects, and local communities adhere to the project; and interest from financial institutions (local and international) in financing SHP projects, and interest from educational institutions to provide high quality training in the sector. Three important drivers identified by the evaluation relate to: project providing the necessary support and assistance for development of policy framework and incentive mechanisms on RE and SHP; project providing the necessary support and assistance for the establishment of SHP; and project contributing to put in place enabling environment for sustainable SHP replication.

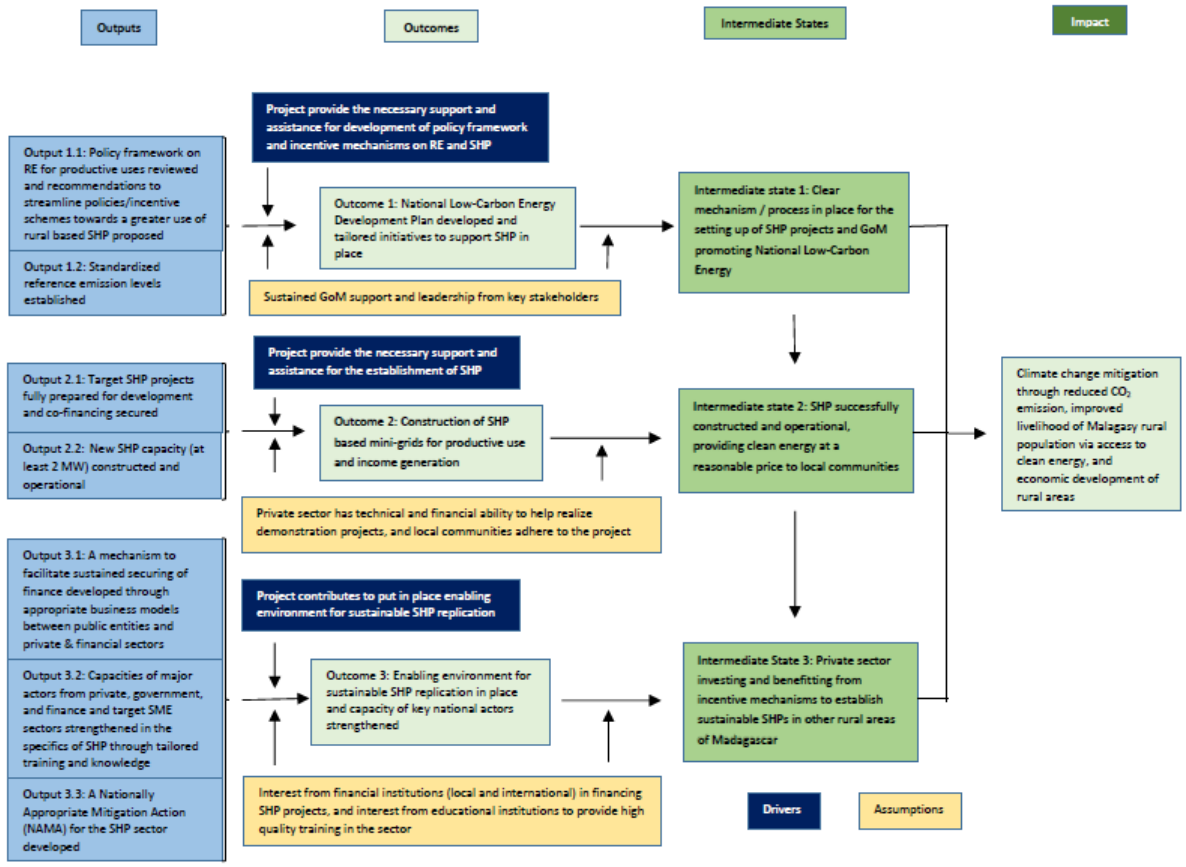


Figure 2– Theory of Change

2.5. Evaluation methodology

The TE was conducted in accordance with the UNIDO Evaluation Policy[8], the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle[9], 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 were applied.

A participatory approach that sought to keep informed and consult all key stakeholders of the project was used throughout the evaluation process. Where appropriate, both

[8] UNIDO (2018). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2018/08)
[9] 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)

quantitative and qualitative evaluation methods were used to determine project achievements against the expected outputs, outcomes, and impacts. The evaluation team consisted of Nee Sun Choong Kwet Yive, senior evaluation consultant (team leader), and Manitra Rakotoarivelo, national evaluation consultant.

The evaluation was carried out from May to July 2023. As per the terms of reference for this TE, the evaluation team proposed a theory of change (TOC) (cf. Section 1.4) that was used to identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, drivers, and assumptions to achieve them. In particular, the evaluation assessed the extent to which the project contributed to put in place the conditions necessary to trigger the occurrence of the intermediate states, proposed in the TOC, to achieve the overall objective of the project.

A combination of methods was used to deliver evidence-based qualitative and quantitative information from various sources: desk studies, individual interviews, focus group meetings, and direct observation during the country mission. The planning of the country visit and the persons to be interviewed were done in close consultation with the UNIDO Evaluation Office and the UNIDO Project Manager (PM). The country mission took place between 10 and 17 June 2023, during which the evaluation team could interview the key stakeholders, partners, and beneficiaries of the project. Remote[10] interviews were undertaken after the mission as some of the stakeholders/partners were out of country. During the mission, a field visit was made to one of the project site at Mandialaza, where the evaluation team could meet and discuss with the local authorities, SIER, the private partner, who invested to establish the SHP, the NGO Centre Ecologique Albert Schweitzer (CEAS), one of the key co-financier of the project, and local communities. The full list of persons interviewed is given in Annex 3. Prior to all the interviews (whether during the mission or remotely), specific questionnaires[11] were developed and emailed to all interviewees at least one week before the scheduled interview. They were requested to fill out and email them back before the interviews. In preparing for interviews and for the country visit, the evaluation team reviewed the documentation provided by the national project coordinator (NPC). These included among others the project document, the independent midterm evaluation report, minutes of the Project Steering Committee (PSC) meetings, and Project Implementation Reports (PIR).

The use of the theory of change approach, face-to-face as well as online interviews and desk review of the project documents allowed the evaluators to assess causality, explain why objectives were achieved or not, and to triangulate information.

2.6. Limitations of the evaluation

No major limitations in terms of access to information were encountered. As aforementioned, the NPC provided some documentation before the mission. He complemented these with a substantive set of other documents during the country mission

[10] Using available communication means such as Zoom or Microsoft Team
[11] Annex 5 for set of questionnaires developed by the evaluation

(Annex 2). Furthermore, the evaluation team could interview all the selected stakeholders, partners, and beneficiaries as well as consultants either during the mission or remotely.

3. Project assessment

3.1. Project's contribution to development results - effectiveness and impact

3.1.1. Project's achieved results and overall effectiveness

Overall effectiveness is assessed on the extent to which the outputs have been successfully delivered and the outcomes achieved, and whether the objective of project has been met. To meet the objective of the project, seventeen activities were planned to deliver seven outputs that would contribute to three substantive outcomes. The assessment of the delivery of outputs as well as achievement of outcomes and project objective was based on whether their indicators proposed in the Project Results Framework (PRF)[12] are available. The scale used for rating ranges from **Highly Satisfactory** (**HS**) to **Highly Unsatisfactory** (**HU**)[13].

3.1.1.1. Delivery of outputs

Despite challenges faced, discussed later, including the Covid19 pandemic, which caused significant delays, the project has performed quite satisfactorily in terms of delivery of outputs. As reported in Table 1, of the seven outputs, two have been rated **HS**, four **Satisfactory** (**S**) and the last one **Moderately Satisfactory** (**MS**). To rate the components and achievement of outputs, the ratings have been converted to scores. Then the average score for all the outputs have been calculated and reconverted to a rating again (see Table 2). The assessment, which is summarized below, was based on whether the target for indicators of the respective output has been achieved.

Component 1: Policy and Regulatory Framework Strengthened. Two outputs were designed for this component. For **Output 1.1** targets have been fully achieved and this output has thus been rated **S** (Table 1). It should be however pointed out that for this output, the project did not undertake the planned activities. At the start of the project in 2015, MEH was undertaking the same regulatory framework reform under other initiatives funded by other donors: GIZ (PERER I and PERER II projects), WB (PAGOSE project), and EU (PHEDER project). Through a decision taken at the first PSC meeting, it was decided not to undertake the planned activities for Component 1, but rather to participate and contribute in the other initiatives led by MEH to achieve these reforms. A co-financing letter from GIZ for EUR 20.3 Million was signed and provided to UNIDO/GEF project to express the co-financing available to support the reform of the legal framework of renewable energy and electricity sector in Madagascar. The project team participated actively in all workshops organized under the other initiatives over the period 2015 / 2016 for the elaboration of the New Energy Policy (NEP), and proposed improvements and technical inputs that were taken into account. It also participated actively in the establishment of the electricity code n° 2017-020 and the

[12] Annex A of the project document

[13] HS: highly satisfactory; S: satisfactory; MS: moderately satisfactory; MU: moderately unsatisfactory; U: unsatisfactory; and HU: highly unsatisfactory

elaboration of the Electrical Grid code. The project also, from a decision of the third PSC meeting, financed a study on the determination of environmental flows adapted to the Madagascar context for hydropower projects, which is very relevant to water, energy, and environment laws. International Small Hydropower technical guidelines have been elaborated under the leadership of the International Center on Small Hydropower (ICSHP), in which two representatives of Madagascar (from MEH and National Office for Standards) participated actively. A Public Private Platform (PEPP) for rural electrification including SHP was set up in 2016 with support from the project, GIZ and EU. This PEPP was, and still is, an excellent opportunity for the authorities, donors (GIZ, Kfw, WB, etc.), private sector, and other stakeholders to meet, discuss and share information and good practices to find solutions to pull down barriers (technical and financial) for the development of the renewable energy sector in Madagascar. Since, its establishment, nine meetings have taken place. Target for **Output 1.2** has been exceeded, and has thus been rated **HS**. Following a decision of the second PSC, in 2017, the international consultancy office "Perspective Climate Group" was recruited to develop a Measurable Reportable and Verification (MRV) tool for the renewable energy sector / electricity in Madagascar. This tool, which was validated by Government of Madagascar in 2018, was designed following the UNFCCC methodology (Clean Development Mechanism) for reduction carbon emission calculation with baseline reference from 2015 (following Paris Agreement and NDC Malagasy Engagements). This achievement was beyond the target at design as the MRV tool is available for all renewables energies technologies for electricity production (solar, biomass, wind, and hydropower). The project-supported MRV tool is the first of its kind in Madagascar, which paves the way for the estimation of carbon emission reduction in other sectors. According to available information, the MRV tool has not much been used due to a lack of reliable data, and the challenge remains the difficulty in collecting data from operators in a reasonable time frame. Although some government officers have been trained on the operation/use of the MRV tool, in the long run, if these officers do not use the tool, are transferred, or retire, this knowledge might be lost. In that regard, the authorities (MEH and MESD) should consider putting in place a system such as training other officers on the use of the tool to avoid such a situation. Given the achievements for its outputs, **Component 1** has been rated **HS** (see Table 2).

Component 2: Private-led SHP technology demonstration. This component sought to demonstrate the technical and commercial viability of at least 2 MW of new SHP capacity. Delivery for this component was significantly delayed due to a weakness in the design. It was planned that the project would provide as GEF grant approximately 20-25% of the cost for the private partner to move into SHP, and the rest of the investment would be provided by the private partner (through loan or equity or a combination)[14]. However, this assumption was highly underestimated as the 20-25% was largely insufficient. In Madagascar, the average grant is minimum around 80% grant[15] for rural electrification projects including the technical and feasibility studies. In that context, right from the start the project team had to look for co-financing partners. With the help of ADER, the project succeeded in securing co-financing from KfW for an amount of Euro 31.4 million in 2018[16], and $450,000 from CEAS in 2019 respectively. For these reasons, implementation was considerably delayed. Furthermore, for various reasons, there have been changes of sites for SHP

[14] First paragraph on page 17 of the project document
[15] Grants can be from any sources such as GEF, EU, National Government, and other multi- or bi-lateral cooperations
[16] Letter of co-financing commitment available.

development/construction. In the end, in consultation with ADER and other partners, and after several calls for projects, the three selected sites were: Belaoko Lokoho, SAVA, (8 MW), Andriamanjavona, SAVA (0.6 MW), and Mandialaza, Alaotra Mangoro (0.2 MW). The outbreak of Covid19 further delayed implementation as the partners could not undertake visits to the selected SHP sites. The target for Output **2.1** has been exceeded, and has therefore been rated **HS**. Indeed instead of 2 MW, the project is supporting the implementation SHP projects at the three sites amounting to a total capacity of 8.7 MW. The private partners are HIER, MASHAYA and SIER GC respectively (Table 1). For **Output 2.2**, the construction works for the SHPs have not started yet, but co-financing have already been secured, and agreements signed with KfW and CEAS. Also activities have started, ESIA and other studies have been completed, and the project has already procured the turbine and other equipment for the Mandialaza project. As the SHPs are not yet constructed, **Output 2.2** has been rated **MS**. Overall, **Component 2** obtained an **S** rating (Table 2).

Component 3: Capacity strengthened to ensure sustainable replication. The purpose of this component was to put in place an enabling environment for sustainable SHP replication and to strengthen the capacity of key national actors. The project performed satisfactorily for this component. Targets for **Output 3.1** have been fully met, and the output is rated **S**. The financial mechanism has been set up and funds have already been committed. The FNED, which is a national financial instrument to facilitate access to financing for rural electrification projects through various financial products such as guarantees, loans, financing, insurance, and subsidies, has been reactivated. A consultation workshop was held on May 16, 2023, bringing together MEH, ADER, ORE, and financial partners to discuss the decree to operationalize the FNED[17]. KfW has already committed to assist Madagascar in the renewable energy sector with a grant of Euro 18 M for the period 2024 – 2026 under PERER 3, and CEAS is also willing to continue to assist in the sector[18]. A business plan model based on the productive use of electricity has been established, and an atlas of potential sites in the Vatovavy Fitovinany region has also been established: 63 sites identified for future SHP projects. Serious issues were reported during the development of the atlas, the contract of the consultants was terminated as the report they submitted was considered not properly done, and they refused to do further work to improve the report. With the assistance of the Department of the Meteorology, the atlas was in the end improved and validated. Currently, in the pipeline, there are four hydrological studies for four potential projects at Mandalobe in the Bongolava region, Marobakoly and Maevarano in the Sofia region, and at Efaho in the Anosy region.

The following have been successfully achieved for **Output 3.2**: fifteen technicians trained on hydroelectricity technology at International Center for Small Hydropower Plant (ICSHP) in China, four international visit/trips between local actors and international centers and technology providers, ten meetings of PEPP, two universities identified to develop curricula in hydroelectricity technology, and one curriculum created for a master degree on hydroelectricity and programme already offered, nine conferences on hydropower given to universities (e.g. Ecole National Superieure d'Antananarivo – ESPA and Institut Supérieur de Management et de Technologie - ISMT) by project experts, ten graduate students having done internship within the UNIDO energy group, Twelve (12) students make up the 1st class to follow the hydroelectricity master's course in January 2023, one enterprise, Bureau

[17] https://meh.mg/fonds-national-de-lenergie-durable-fned/
[18] Interview data

d'Etudes et de Travaux de Construction (BETC) Nanala, identified and receiving capacity building on local manufacture of concrete pole, and ten SMEs sensitized on the building turbine. Furthermore, the project has participated to thirty-three events and produced a number of awareness raising materials such pamphlets and posters, and has regularly produced newsletters and factsheets[19]. Regarding knowledge management, initially, it was planned to set up a website (online platform) in order to provide support and information beyond the scope of the project. Instead, it was afterwards decided to initiate and set up the PEPP platform focusing on rural electrification, under the leadership of ADER. Project information and results are nevertheless shared on the website of MEH. Given the above mentioned achievements, Output 3.2 has been rated **S**. **Output 3.3** has also been rated **S** as a Nationally Appropriate Mitigation Action (NAMA) document was produced jointly with GIZ and MEH/MEEF for inclusion in the NAMA Facility and other opportunities. NAMA Facility did not retain the proposal mainly because of the absence of FNED at that time.
Based on the achievements described in the earlier paragraphs (see also Table 2), **delivery of outputs** is rated **Satisfactory**.

Table 1: Delivery of outputs

Outputs	Indicators / target at design	Target/Indicators achieved	Comments	Rating
Output 1.1: Policy framework on RE for productive use reviewed and recommendations to streamline policies/incentive schemes towards a greater use of rural-based SHP proposed	National Low-Carbon Energy Development Plan (NLCEDP) in place by 2017, to harmonize and improve existing legislation for SHP and RE in general Development of a Policy Document Legislative Code as support for SHP carried through as part of the NLCEDP, that is also gender responsive	1. A strategic note on the determination of in-stream flows adapted to the Madagascar context established. 2. Guideline on small hydroelectricity available 3. Platform energy/climat between ministry of energy, ministry of environment and direction of meteorology set up. 4. Strong contribution of the project during the process of establishment of the various texts: • Electricity code and related decree adopted. • Law on FNED adopted.	Targets fully achieved with support from GIZ, WB, and EU under other initiatives. Two (2) participations of Madagascar (MEH and Standard office) in the exchanges to establish the small hydropower guidelines (IWA 33) organized by the International Center for Small Hydropower (ICSHP) in China.	S
Output 1.2: Standardised reference emission levels established	Calculation tool in place agreed by stakeholders by mid-2016	One tool established and shared to the Ministry of Energy and Hydrocarbon: Measurable, Reportable and Verification (MRV) tool for Renewable Energy	Target exceeded, MRV tool developed not only for hydropower but also for other renewable energies: wind, solar and biomass.	HS
Output 2.1: Target SHP projects fully prepared for development and co-financing secured	At least 2 specification documents assessed as appropriate for presentation for co-financing	1. Three (3) sites supported with total power of 8,7MW ✓ Belaoka Lokoho (8MW) by HIER ✓ Andriamanjavona (600kW) by MASHAYA ✓ Mandialaza (200kW) by SIER GC 2. Project Belaoka Lokoho and Mandialaza: Construction company under selection, Environmental impact survey done, technical and financial feasibility survey done.	In 2017, co-financing from KfW complementary to the UNIDO/GEF project fund was mobilized for the 2 projects in SAVA region (Belaoka Lokoho and Andriamanjavona). The Mandialaza project is being co-financed by CEAS to support the operator SIER GC. Target exceeded: 8.8 MW instead of 2 MW	HS

[19] Copies of pamphlets, brochures, and newsletters were submitted to the evaluation team during the mission in Madagascar.

		3. Project Andriamanjavona : Environmental impact survey done, technical and financial feasibility survey done		
Output 2.2: SHP capacity of 2 MW on preselected sites realised	At least 2 MW of SHP capacity realised with direct support from GEF	1. No power plant operational but the total power of the three (3) sites amount to a total 8,8MW, much more than the 2MW planned at design scheduled.	Power plant construction will start in 2024	MS
Output 3.1: A mechanism to facilitate sustained securing of finance set up through development of appropriate business models between public entities and private & financial sectors developed	Matrix of appropriate financial tools based on business models Financial due diligence guidelines for SHP projects Standardised financial and technical parameters for reporting against	1. Financing instrument to facilitate scale up: Law on FNED 2. Risk mitigation: Business plan based of the productive use of electricity established. 3. Pipeline de projet : • Atlas of potential sites in the Vatovavy Fitovinany Region established: 63 sites identified for future SHP project. • Four (4) hydrological studies for 4 potential projects: Mandalobe in the Bongolava region, Marobakoly and Maevarano in the Sofia region, Efaho in the Anosy region	Target achieved	S
Output 3.2: Capacities of major actors from private, government, and finance and target SME sectors strengthened in the specifics of SHP through tailored training(s) and knowledge management	Training material developed for different target audiences – i) vocational training for utilisation of SHP for productive uses, ii) for financiers 2 productive use training workshops conducted including on social aspects 20 trained SMEs and academic institutions At least 30% of participants women Reports and flyers published for each project Tailored university course in at least 1 university or polytechnic institute in Madagascar Public awareness raising, marketing and training material developed and made available South-south SHP co-operation visit conducted Trainings held on turbine and concrete pole manufacturing All communication and training materials will be gender responsive	1. Fifteen (15) technicians trained on hydroelectricity technology at ICSHP in China 2. Four (4) international visit/trips between local actors and international centres and technology providers 3. Ten (10) meetings of the Platform for Public-Private Exchange (PEPP). 4. Two (2) universities identified to develop curricula in hydroelectricity technology. 5. One (1) curriculum created on MASTER graduation on hydroelectricity. Twelve (12) students started the 1rst class in January 2023 6. Nine (9) conferences on hydropower given to universities (ESPA, IST, IME) by UNIDO/GEF project experts. 7. Ten (10) interns recruited to UNIDO's energy team. 8. One (1) entreprise (BETC Nanala) identified and receiving capacity building on local manufacture of concrete pole. 9. Ten (10) SMEs sensitized on the building turbine	1. Sustainable Energy Leadership Program en Inde (2016), Vienna Energy Forum (2016 and 2018), Centre International de la Petites Hydroélectricité, Chine (2018) . 2. ESPA (Polytechnic School Antananarivo), IST (Superior Institute of technology), IME (Institute for Energy Management) are both public entities 3. For local turbine manufacture: difficulty in sourcing quality alloy from existing foundries. 4. An internal note stress on a strategy to foster local manufacture of Banki Turbine / Crossflow Target achieved	S

	20% female trainers/ facilitators (where appropriate and feasible)			
Output 3.3: A Nationally Appropriate Mitigation Action (NAMA) for the SHP sector developed	NAMA developed for inclusion in the NAMA Facility	A Nationally Appropriate Mitigation Action (NAMA) document established for inclusion in the NAMA Facility and other opportunity	Target reached	S

Table 2: Rating of components and overall rating for achievement of outputs

Component	Outputs	Rating	Score*	Average score	Component Rating
Component 1	Output 1.1	S	5	5.5	HS
	Output 1.2	HS	6		
Component 2	Output 2.1	HS	6	5	S
	Output 2.2	MS	4		
Component 3	Output 3.1	S	5	5	S
	Output 3.2	S	5		
	Output 3.3	S	5		
Total and average score/Overall rating**			36	5.1	**S**

*HS: 6; S: 5; MS: 4; MU: 3; U: 2; HU: 1; **Total score and average score for outputs and overall rating for achievement of outputs

3.1.1.2. Achievement of outcomes and project objective

Similar to the delivery of outputs, the assessment of project objective and outcomes was based on the availability of the indicators proposed in the PRF of the project document. And the rating scale used was also from **HS** to **HU**. Table 3, which summarizes this assessment, indicates a satisfactory achievement of results. Noting that funds have already been secured (refer to indicators for **Outcome 2**, Table 3), the construction of the three SHPs are likely be successfully completed by 2024/2025, and operational, in which case targets for the project objective would be fully achieved, justifying the **Satisfactory** rating attributed to project objective. In particular, the target for reduction in CO_2 emission would be largely exceeded, 886 541 tons CO_2 equivalent achieved against 131,400 tons expected at design. The project has performed also satisfactorily for outcomes. Under **Outcome 1**, the project has contributed to successfully put in place the Low-Carbon Energy Development Plan and tailored initiatives to support SHP. For instance, the new energy policy targeting 80% of energy mix from hydro and renewable sources by 2030 has been adopted in 2015, the electricity code has been revised and adopted in 2018, and the law on FNED enacted in 2017. As all targets have been achieved, **Outcome 1** has been rated **S**.

Outcome 2 relates to the availability of SHP based mini grids for productive use and income generation. Although the three SHPs have not yet materialized, the project has nevertheless managed to successfully secure the required amount of co-funding ($43,181,800, Table 3) for their construction. The three SHPs would generate a total capacity of 8.8 MW surpassing the planned capacity (2 MW at design) by more than four times. And once operational (likely by 2024/2025), it is anticipated that they contribute to avoid the emission of an estimated amount of 886 541 tons of CO_2 equivalent. Given the achievement foreseen, **Outcome 2** is rated **Satisfactory**. **Outcome 3** has been rated **Satisfactory** as well given that targets have been met for most of the indicators.

Achievement of Outcomes and Project Objective is rated **Satisfactory**.

Table 3: Achievement of Outcomes and Project Objective

Project objective	Target/indicators at design	Target/Indicators achieved	Comments	Rating
To stimulate the use of SHP to reduce GHG emissions and trigger productive use for income generation in line with priorities of GoM, with the overall aim to increase the competitiveness of the Madagascan SME sector and reduce its dependency on fossil fuels	1. SHP capacity of at least 2 MW realised 2. Energy generated annually from SHP through demonstration projects = 13,140 MWh per year, operating from 2018 to 2038 3. Direct emission reduction of 131,400 tons,	Three hydropower plants under construction: • Belaoka Lokoho (8MW) • Andriamanjavona (600kW) • Mandialaza (200kW) Energy generated scheduled from SHP technology: 53 300 MWh/year*. Direct CO_2 emissions reduced (estimation for 20 years): 886 541 tons CO_2eq	If construction of SHPs successful and operational by 2026, target would be largely exceeded	S
Outcome	**Target/indicators at design**	**Target/Indicators achieved**	**Comments**	**Rating**
Outcome 1: National Low-Carbon Energy Development Plan developed and tailored initiatives to support SHP in place	NLCEDP discussed, drafted and put in place Legislation reviewed to allow increased development of SHP in rural areas with clarity for other RE	New Energy Policy adopted in 2015 Electricity code Law 2017 020 adopted in 2018 Law on FNED adopted in 2017 Tools to manage and monitor hydroprower performance: guideline and Monitoring Result Verification (MRV)	Target achieved	S
Outcome 2: Construction of SHP based mini grids for productive use and income generation.	SHP capacity of at least 2 MW realised USD 7 million mobilised through private sector Approx. 131,400 tCO2eq of direct emissions avoided	Three hydropower projects under installation construction Volume of investment mobilized: • Private operators: $ 8,287,800 • Co-financiers (CEAS & KfW): $ 34,894,000 Estimated 886,541 tons of CO_2eq avoided**	When SHP operational, target regarding capacity and direct CO_2 emissions largely exceeded Funds mobilized already largely exceeded	S
Outcome 3: Appropriate financial measures to create conditions for SHP project replication developed and operational Capacity of project developers on technical, productive use aspects and financial viability of SHP enhanced and local capacity to manufacture SHP equipment strengthened	A financing facility established with initial funds (estimate USD 5 million) identified as partial risk guarantee At least 5 private sector players apply for future SHP financing 6 training workshops designed based on TNA (including the gender dimension) and conducted 250 trained people - at least 30% women	Law on FNED adopted 900 people trained (25% women) over the 8 years during different workshops / conferences. 9 conferences at universities 1 training on concrete pole 1 training on local manufacture 3 general training on SHP technologies	Targets satisfactorily achieved	S

* Concession are for 25 years, SHPs expected to operate from 2026 to 2049 excluding the 2 years of construction, **Estimation done following MRV/UNFCC methodology

3.1.2. Progress towards impact (economy, environment, social)

Impact was assessed on the extent to which the project interventions have brought about changes in the human condition or to the environment. Whether intended or unintended, changes can be positive or negative. For this project, there was no evidence of negative impacts on human health or the environment. On the contrary, as discussed in the earlier section, it is anticipated that the project would contribute to build capacity for the production of 8.7 MW of clean energy, and at the same time avoid the emission of an estimated amount of 886 541 tons of CO_2 equivalent over a period of 20 years. Progress towards long term impact has been discussed at three levels: (i) Behavioral changes; (ii) Broader adoption; and, (iii) Emergence of the TOC intermediate states.

3.1.3. Behavioral changes

Behavioral changes have been discussed according to the following three aspects: (i) Economically competitive – Advancing economic competitiveness; (ii) Environmentally sound – Safeguarding environment; and, (iii) Socially inclusive – Creating shared prosperity; which are discussed below:

Economically competitive – This aspect of change is directly relevant to the establishment of SHPs in remote rural areas where the local communities do not have access to electricity. To encourage private operators to establish SHPs in these remote areas, the practice in Madagascar is that 80% of the required funding is provided as grant coming from different sources, GEF, KfW, and CEAS for this initiative, and the private operators need to invest only 20%. This financial arrangement in itself is very economically competitive. Furthermore, the business plan developed for each SHP project anticipates a return on investment between 7 to 15 years for the private operators, which is quite competitive. In the rural areas, it is foreseen that access to electricity would contribute to the development of income generating activities (IGA). At Belaoka Lokoho, it is expected about 3500 such activities, and about 350 at Mandialaza. For example at the Mandialaza site, there are about 250 ginger producers, who transform the ginger into different products, which they sell to Sahanala, a company engaged in exporting artisanal products including these ginger products world-wide. According to information gathered during the field mission at Mandialaza[20], access to electricity would definitely help these ginger producers increase their productivity as some of the tasks to transform the ginger could be mechanized.

Environmentally sound – The project is considered environmentally sound as it is aiming at promoting the production of electricity through SHPs to reduce GHG emissions. In that context, the New Energy Policy, which aims at 80% of renewable energy in the mix energetic by 2030, has been adopted in 2015. Furthermore, for all SHP projects, there is need to undertake an environmental and social impact assessment (ESIA) during the preliminary phases. It is during one of these assessments at the Andriamanjavona dam that made it possible to modify the development plan in order to preserve an endangered aquatic species, the bedotia fish, which is endemic to Madagascar. At Mandialaza, the local authorities[21] is committed to protect the river source, where the dam for the SHP will be constructed. A municipal decision would be taken in this direction through the designation of the forest area upstream of the river as a protected area. To do this, the local authority municipality would collaborate closely with the NGO Fanamby for the setting up this protected area.

Socially inclusive – As discussed earlier, there is need to undertake an ESIA before approval for the construction of SHPs at selected sites. Along with the ESIA, a resettlement action plan need also to be developed as it is required to compensate the communities that would be affected by the construction of the SHP. The national authorities (MEH) has already budgeted 1 M Euros to compensate communities that would be impacted by the SHP projects. At the Mandialaza site for example, the local authorities would compensate the people affected by amount of 10 M Ariary[22], half of which has already been paid[23].

During the evaluation mission at Mandialaza, the feedback gathered was very positive. All the stakeholders interviewed that included the president of the village council, the deputy

[20] On 12 June 2023
[21] Interview data
[22] Equivalent to about $2,200
[23] Interview data

mayor, the secretary of the council, and some representatives of the local community, agreed that access to electricity would definitely improve their livelihood: improvement of the health service: health centers functioning better; improved security at night with street lamps; development of income-generating activities such as chicken breeding, shops, repair workshops, etc.; access to information and leisure: radio, television via satellite dish/satellite; better food preservation with refrigerators, freezers, etc. They were all looking forward for the construction of SHP with eagerness, which is expected to be completed and operational by the second quarter of 2024[24].

3.1.4. Broader adoption

This section addresses the catalytic effect of the project and describes the extent to which the project's interventions have been adopted within a country or regionally, or beyond the domains and scales originally targeted. The three mechanisms, namely mainstreaming, replication, and scaling-up, and which are frequently used to promote the broader adoption of project interventions and innovations, are discussed below.

Mainstreaming occurs when information, lessons or specific results generated by the project are incorporated into broader institutional mandates and operations, such as laws, policies, regulations, and programs. The evaluation found tangible evidence that mainstreaming already took place. The National Energy Policy, the Law on the Electricity Code, and the FNED law developed in the context of the project have all been adopted by the national government. Similarly, all the technical guidelines on hydroelectricity, the atlas of potential sites for SHP development, and other relevant documents have all been adopted as official documents.

Replication occurs when the initiatives, technologies or innovations supported by the project are reproduced or adopted on a comparable scale. Replication as well as scaling-up was already included in the design. The whole of **Component 3** was developed to build national capacity as well as putting in place enabling environment for the sustainable replication and scaling-up of SHP across the country. Furthermore, the implementation of **Component 2** enabled MEH and ADER to strengthen their knowledge of the process of setting up an SHP as well as the necessary collaboration required between the different stakeholders.

Scaling-up takes place when the project-supported interventions are implemented at a larger scale, which can be administrative, geopolitical, ecological or business scales. Refer to the earlier paragraph on **Replication**.

3.1.5. Emergence of TOC intermediate states

Impact was also assessed on the extent to which the three Intermediate States proposed in the TOC (Figure 1) were seen to be emerging in Madagascar. The likelihood of impact was supported by the assessment of whether the proposed necessary assumptions and drivers in the TOC have shown to hold. The assessment is reported in Table 4.

Intermediate State 1 (Clear mechanism / process in place for the setting up of SHP projects and GoM promoting National Low-Carbon Energy) has already emerged. The same procedure applied for the three selected SHP projects under construction will be applied:

[24] Interview data

call for project proposals led by ADER, selection of proposals, preliminaries studies, funding commitment of bidders, business plan developed, financing partners/sources (PNED, co-financiers e.g. KfW, CEAS, financial institutions, etc.). A committee comprised of the same members as the PSC except UNIDO will be set up to select / appraise the proposals as well as to monitor the establishment of SHPs including the three under construction in the context of the project[25]. According to feedback gathered the evaluation mission, the government of Madagascar is committed to prioritize renewable, clean and affordable energy in line with the National Energy Policy to reduce dependence on fossil energy[26]. In view of the above, **Intermediate State** 1 is rated **Satisfactory**.

Intermediate State 2 (SHPs successfully constructed and operational, providing clean energy at a reasonable price to local communities) has not emerged yet as the construction of the three SHPs have not started, and has been rated **MS**. For the Belaoka Lokoho and Mandialaza projects, the construction company is under selection, and the EEIA as well as the technical and financial feasibility studies have been completed. For the Andriamanjavona project, the ESIA and the feasibility studies are also completed, but the bidding exercise for selection of the construction company has not been done yet. The monitoring of the construction of the SHPs would be done by the committee mentioned in the earlier paragraph.

Intermediate State 3 (Private sector investing and benefitting from incentive mechanisms to establish sustainable SHPs in other rural areas of Madagascar) has not emerged yet. However, there are indications that its emergence will likely happen. Prior to the project, the three private operators (Sier GC, Mashaya and HIER) were already in the sector, they have established SHPs in rural areas and have been supplying electricity to the local communities. They all indicated that they would be willing to further invest in the sector if opportunities arise. Thanks to the coming decree, there are high chances that FNED funds would be operational, and as early discussed (cf. Section 2.1.1 under **Output 3.1**), KfW has already committed Euro 18 M for period 2024 – 2026 under ERER 3, and CEAS is also willing to continue assist Madagascar. **Intermediate State 3** is thus rated **S**.

The three assumptions proposed in the TOC have been found to hold, and for that reason, they have been highly rated: **HS** for Assumption 1, and **S** for the other two others (Table 4). All the drivers were in place during project implementation, and have been also highly rated. Given the status of intermediates, assumptions, and drivers, progress towards impact is considered **Satisfactory**.

Table 4: Status of intermediate states, assumptions and drivers

Intermediate State	Observation/findings	Rating*
Intermediate state 1: Intermediate state 1: Clear mechanism / process in place for the setting up of SHP projects and GoM promoting National Low-Carbon Energy	Same procedure applied for the three selected SHP projects under construction will applied: call for project proposals by ADER, selection of proposals, preliminaries studies, funding commitment of bidders, business plan developed, co-financing (PNED, co-financiers e.g. KfW, CEAS, other)	**S**
Intermediate State 2: SHP successfully constructed and operational, providing clean energy at a reasonable price to local communities	Still at the level of call for tenders or studies. Construction will start most likely in 2024 for the three SHPs.	**MS**

[25] Interview data
[26] Interview data

Intermediate State	Observation/findings	Rating*
Intermediate State 3: Private sector investing and benefitting from incentive mechanisms to establish sustainable SHPs in other rural areas of Madagascar	Private operators involved in the 3 SHP projects already in the sector before the project, and indicated that if opportunities arise they will further invest. FNED funds available, KfW already committed to assist Madagascar (Euro 18 M) in the renewable energy sector for period 2024 – 2026 under ERER 3, and CEAS willing to continue assisting in the sector	**S**
Assumptions	**Observations/findings**	**Rating**
1. Sustained GoM support and leadership from key stakeholders	MEH, ADER and ORE showed strong leadership. Very good involvement of other national and local stakeholders	**HS**
2. Private sector has technical and financial capacity to help realize demonstration projects, and local communities adhere to the project	The three (3) private operators provided the funding requested, two already in the sector. Local communities very much involved and looking forward to get access to electricity	**S**
3. Interest from financial institutions (local and international) in financing SHP projects, and interest from educational institutions to provide high quality training in the sector	Consultation workshop held on May 16, 2023 bringing together the MEH, ADER, ORE, and financial partners & institutions to discuss the establishment and mechanism of this FNED. MSc programme on hydroelectricity offered by ESPA since 2022	**S**
Drivers	Observations/findings	Rating
1. Project provide the necessary support and assistance for development of policy framework and incentive mechanisms on RE and SHP	The project with the support of GIZ, WB and EU developed the necessary pieces of legislation and policies that have been adopted by the government. Law on FNED adopted, discussions on its establishment and mechanism of FNED on-going (Decree)	**HS**
2. Project provide the necessary support and assistance for the establishment of SHP	Necessary support both technical and financial provided, but construction of SHPs not yet started	**S**
3. Project contributes to put in place enabling environment for sustainable SHP replication	Project contributed significantly to put in place enabling environment for sustainable SHP replication	**HS**

***HS**: Highly Satisfactory, **S**: Satisfactory, **MS**: Moderately Satisfactory, **MU**: Moderately Unsatisfactory, **U**: Unsatisfactory, **HU**: Highly Unsatisfactory

The project has satisfactorily delivered most of the planned outputs, and achieved the outcomes. Once the construction of the SHPs completed by 2025, it is anticipated that the targets for the project objective would be largely exceeded. For these reasons, the rating for overall **Effectiveness** is **Satisfactory**.

3.2. Project's quality and performance

3.2.1. Design

The evaluation acknowledges several strengths in the design of the project. The project was developed through a participatory approach involving the key stakeholders such as MEH, ADER, and ORE. In particular, the logical framework approach was used, which led to the establishment of a PRF[27] and the main elements of the project, i.e., the overall objective, outcomes, outputs, as well as indicators, their means of verification, and the assumptions.

The evaluation found the project design to be adequate to address the problems at hand. In particular, a comprehensive baseline analysis of Madagascar's energy balance, showed that about 80% of its overall energy consumption was based on biomass (mainly firewood 68%, charcoal 10%, and other biomass 2%), 17% on petrol (transport), 2% on electricity (hydropower and diesel power plants) and 1% on coal. This high rate of biomass-based energy consumption was contributing to deforestation, with Madagascar's rainforests being deforested at an annual rate in the range 0.5% to 1.3%. The analysis revealed major barriers

[27] Annex A of the project document

including the lack of affordable financing, and limited technical capacity on the ground, as well as a lack of a demonstrated approach for implementation of small hydro projects through a public private partnership.

Based on the situational analyses and the needs assessment done, a clear thematically-focused development objective has been proposed, and the causal pathways from project outputs through outcomes towards impacts have been clearly described in the PRF. Moreover, the proposed set of SMART[28] indicators as well as their means of verification are considered adequate to monitor progress at both output and results levels. However, the PRF could have benefitted from midterm targets for both outputs and outcomes, which would have better guided the implementers of the project for monitoring and evaluation (M&E). On the other hand, an adequate budgeted M&E plan[29] has been proposed.

Relevant socioeconomic benefits to be delivered by the project as well as consideration of gender dimensions have been adequately described in the project document[30]. In particular, the project document mentions that the guiding principle of the project would be to ensure that both women and men are provided equal opportunities to access, participate in, and benefit from the project, without compromising the technical quality of the project results.

Adequate institutional arrangement for project implementation and coordination has been proposed. Relevant national stakeholders such as MEH and ADER, private sector, and NGOs are mentioned, and their foreseen involvement described[31].

The evaluation has noted one weakness in the design. As discussed earlier in Section 2.1.1 under **Component 2**, it was designed that the private partner would invest about 80% of the total costs for the construction of the SHP, and the project would provide as grant the remaining 20%[32]. However, the 20% grant was largely insufficient as in Madagascar, the average grant was about 80%[33] for rural electrification projects including the technical and feasibility studies. Given the significant shortfall in cash funding, it took time for the project team to look for co-financing partners, which considerably delayed implementation.

Despite the weakness identified, **Project Design** is rated **Satisfactory**.

3.2.2. Relevance

The project is assisting Madagascar to fulfill its obligations towards to United Nations Framework Convention on Climate Change (UNFCCC), to which it is a party. In particular, it is assisting the country to achieve Goal 7: Affordable and Clean Energy and Goal 13: Climate Action of the Sustainable Development Goals of UNFCCC. Furthermore, the project is very

[28] SMART: specific, measurable, achievable, relevant and time-bound indicators
[29] Part II Section C of the project document
[30] Part II Sections B.2, B.2.1, and B.2.2 of the project document
[31] Part II Section B.1 of the project document
[32] First paragraph on page 17 of the project document
[33] See footnote 15

relevant to the long-term development of the country as well as achieving one of the targets in the Millennium Development Goals (MDGs), which is to increase the electricity access rate to 74% in urban areas, and 10% in rural areas with focus on renewable energies (wind, solar, hydro, and non-traditional biomass).

The project is very relevant with the GEF5 Climate Change Focal Area. In particular, it is in line with the Climate Change Objective 3: Promote investment in renewable energy technologies, and the Climate Change Objective 6: Support enabling activities and capacity building project, more specifically to help create enabling legal and regulatory environments for climate change mitigation.

The project is clearly in line UNIDO's mandates and priorities for action for development of industrial support programs. In the field of renewable energies in particular, UNIDO's strategies are to create commercial and business opportunities through improved access to electricity by setting up autonomous mini-grids; to integrate the use of renewable energies into industrial applications, especially for MMEs and SMEs, and to support innovative business models for the promotion of renewable energies as a business sector. In particular, UNIDO has successfully implemented SHP projects in Rwanda, Zambia and Kenya.

In light of the above discussion, rating on **Relevance** is **Highly Satisfactory**.

3.2.3. Coherence

The project is well aligned with the Government's policy: MEH and ADER to increase access to energy and with the MESD focusing on the reduction of GHG emissions. The project is integrated with the various initiatives of technical and financial partners in the energy sector: GIZ, World Bank, EU, and CEAS. Prior to the project, the latter were already major partners of Madagascar; they were providing support in the hydroelectricity sector. CEAS started its cooperation in 2008 and has financed and implemented many projects including four SHPs, the first one in 2013. Currently, it is implementing eight projects including the Mandialaza one. GIZ started to assist Madagascar in the hydro sector since 2013. It supported ADER to collate more detailed hydrological studies for sites to validate their potential. In consultation with ADER, UNIDO used this information to pre-select some of these locations as part of the GEF project. As discussed earlier (Section 2.1.1 under **Output 1.1**), instead of duplicating efforts, the project cooperated with GIZ, which had already started the work (under PERER I and PERER II), to successfully strengthen the regulatory and policy framework for the renewable energy sector. For **Component 2**, in view of the significant shortfall of funds, the project team succeeded to secure significant cash co-financing from KfW and CEAS for the establishment of three SHPs.

Originally, the MRV tool was supposed to be designed for hydroelectricity only, the project took the decision to develop the tool to include the other renewable energy sources as well: wind, solar, and biomass. Given the efforts made by the project, **Coherence** is rated **Highly Satisfactory**.

3.2.4. Efficiency

The CEO endorsement date was on 27 May 2015 and project implementation started officially at UNIDO on 24 July 2015. The project was planned for a duration of 5 years and to end on 24 July 2020. As discussed earlier (Sections 2.1.1 and 3.1) project execution was delayed due to a weakness in the design. It took time for the project team to secure cash co-funding from KfW (in 2018) and CEAS (in 2019). The contracting procedures for carrying out studies that were too long on the UNIDO administration also delayed execution. In addition, the numerous stakeholders involved in all feasibility and other studies also slowed down the process: increased time taken for the analysis, reviewing and validation of deliverables. The outbreak of the Covid19 pandemic in March 2020 further delayed implementation, and the project was granted three years extension to close on 31 July 2023.

A full agency mode of execution was applied with UNIDO managing the GEF funds. The procurement of equipment and goods as well as the recruitment of consultants was done by UNIDO. Fund management was done according to the UNIDO internal procedures. For payments and fund disbursement, for example, the UNIDO PM ensured that all relevant documents and approvals were obtained before making requests[34].

There is a clear evidence that the project has used the most efficient options for the recruitment of consultants, for sub-contracting service providers, and for project execution. The selection and recruitment of consultants was done using the best options: either they had past experience with UNIDO or other UN agencies, or they were selected through a call for application. The selection of service providers for the construction of the SHPs is being done through bidding exercises.

As discussed earlier, the project succeeded to establish cooperation with on-going similar initiatives (PERER I and PERER II). Thus, the regulatory and policy framework was successfully strengthened thanks to synergies created with these initiatives (cf. Section 2.1.1 under **Output 1.1**). Given the shot fall in cash funding for **Component 2** (cf. Sections 2.1.1 and 3.1), the project successfully managed to leverage a much higher amount of co-financing than planned at design $ 68,698,800 against $14,305,000 (Table 5). With the amount leveraged for **Component 2** (Table 6), $ 43,181,800 (more than four times the amount initially pledged), once the three SHPs constructed and operational, the power capacity built would surpass the target set initially, 8.7 MW achieved against 2 MW planned.

Table 7 displays the budget allocated per component at design and the corresponding expenditures for each component. The figures clearly indicate that the delays encountered did not affect cost effectiveness as most of the substantive outputs have been successfully delivered within the total approved budget. It is worth noting that the construction of the three SHPs would be co-financed by KwF and CEAS, and agreements have already been signed. The constructions would start most probably by end 2023 / first quarter 2024. For this component, the project contributed mainly, in the procurement of the turbine and

[34] Interview data

other equipment for the Mandialaza project, and some feasibility studies for the other projects. As of 21 June 2023 February 2022, a total of amount of $2,858,272 has been disbursed with an unspent balance of $196,727 corresponding to budgets for a few remaining activities for **Component 2** mainly. In general, there were no significant budget re-allocations (cf. variance in Table 7), and the project management costs were kept within reasonable limits in light of the three years extension granted, and noting that a full time NPC was recruited for project management and coordination. These observations point to a cost-effective management of the project funds.

Although implementation was delayed, by adopting the strategic approach in creating synergies with other initiatives, taking adaptive actions to look for co-financing, and applying some cost-effective measures, the project has been able to successfully deliver all the outputs within the planned budget with a foreseen impact of avoiding the emission of 886 541 tons CO_2eq against 131,400 tons planned at design; efficiency is thus rated **Highly Satisfactory**.

Table 5: Co-financing at design and materialized

Co-financier	Type	Amount pledged at design ($)	Amount materialized ($)
MEH	Cash	4,000,000	?
MEEF	In-kind	160,000	?
Private Sector	Cash	6,500,000	8,287,800
Bank of Africa	Loan	3,535,000	-
UNIDO	Cash & in-kind	120,000	120,000
GIZ	Cash	-	25,397,000
KfW	Cash	-	34,444,000
CEAS	Cash	-	450,000
Total		**14,305,000**	**68,698,800**

Table 6: Co-financing per component

	Co-financing at design ($)	Co-financing materialized* ($)
Component 1	1,110,000	15,000,000
Component 2	9,000,000	43,181,800
Component 3	3,400,000	10,397,000
Total	**13,510,000**	**68,578,800**

*Excluding UNIDO co-funding

Table 7: Budget allocation and expenditure per component as at 28 February 2022

	Budget at design	Actual Budget	Expenditures	Unspent	Variance
Project components	**USD**	**USD**	**USD**	**USD**	**%**
Policy and regulatory framework	200,000	166,298	166,298	0	16.9
Private-led SHP technology demonstration	1,800,000	1,828,732	1,676,806	151,926	-1.6
Capacity strengthened to ensure sustainable replication	670,000	639,128	607,824	31,304	4.6
M & E	50,000	56,200	42,704	13,496	12.4
Project management cost	135,000	164,638	164,638	0	-22.0
Total	**2,855,000**	**2,855,000**	**2,658,272**	**196,727**	

3.2.5. Sustainability

Sustainability is understood as the likelihood of continued benefits after the project ends. Sustainability can be assessed in terms of the risks confronting the project; the higher the risks, the lower the likelihood of sustenance of project benefits. The four dimensions or aspects of risks to sustainability (as mentioned in the TOR, namely, sociopolitical, financial, environmental, and institutional frameworks and governance risks) are discussed below.

Sociopolitical risks – Madagascar is a party to UNFCCC. It ratified the Kyoto Protocol on 24 September 2003, and signed the Paris Agreement on 22 April 2016, which it ratified on 21 September 2016. For the period 1999 to 2023, Madagascar has benefitted a total GEF grant of $54,400,000 for 12 projects in the climate change focal area including the project under evaluation (Annex 6). In addition, the country has benefitted a further $98,200,000 of GEF grant during the same period for the implementation of 25 projects in the other GEF Focal Areas[35]. Over the past 15 years, the country has also benefitted from bilateral cooperation[36] to develop its renewable energy sector. These initiatives and cooperation clearly show that the past and the current governments of Madagascar have shown a strong commitment to developing its renewable energy sector as well as to fulfilling its obligations towards the UNFCCC and other international agreements. Furthermore, the New Energy Policy that was developed in the context of this project, aiming at achieving 80% of renewable energy of the mix energy sources by 2030, has already been adopted by the government in 2015. Although it has been reported many turnovers at the level of the Minister of MEH over the course of the project implementation[37], in view of the above discussions the evaluation does not foresee any particular reason the commitment of future governments to promote renewable would change, therefore **Socio-political Sustainability** is rated **Likely**.

Financial risks – Business plans for each SHP project have been developed, and these have been checked by ORE to assess the financial sustainability of the SHPs, and approved. The SHPs are expected to be constructed and operational by 2024/2025. Market surveys identified 30,100 households and 3 900 SMEs that could be potential electricity consumers at the three project sites. According to the business plans, the return on investment for the private operators of the three SHPs would be between 7 and 15 years depending on the number of consumers. One of the three SHP private operators was more optimistic and indicated that the return on investment would be 5 years[38]. With regard to funding for sustainable replication and scaling up SHPs planned under **Component 3**, discussions have been engaged among key stakeholders (MEH, ADER, ORE, and financial partners) to decide on the modalities and mechanism for the setting up and operation of the FNED. In the context of the on-going bilateral cooperation, KfW already approved a grant of Euro 18 M for the period 2024 – 2026, and CEAS is also willing to continue its assistance (cf. Section 2.1.1 under **Output 3.1**). The three private operators of the SHPs, already in the business, indicated that they would be willing to further invest in the sector (cf. Section 2.2.3 under **Intermediate State 3**). During the country mission, the evaluation team was informed that a PEPP meeting would be organized targeting big potential donors such as EU, GIZ, and WB

[35] https://www.thegef.org/projects-operations/database?project_search=madagascar&f%5B0%5D=project_country_national%3A98
[36] Germany (KfW, GIZ), EU, and Switzerland (CEAS)
[37] Interview data
[38] Interview data

to leverage substantial funds for SHP replication. In light of the above findings, the evaluation considers that financial risks are low, and thus **Financial Sustainability** is considered **Likely**.

Institutional framework and governance risks – Thanks to the support and contribution of the project the regulatory and policy framework for the renewable energy sector has been strengthened, and the corresponding laws, policies and guidelines have been developed and already adopted by government (cf. Section 2.1.1 under **Component 1**). Furthermore, the steering committee that was set up through a decree of MEH, was meant to monitor all SHP projects for rural electrification including those under construction for this project and future ones. Also, the key stakeholders, MEH, ADER, and ORE, who were directly involved in project execution, indicated that the implementation of project was a learning process whereby they could strengthen their capacity, which would be very useful during the replication phase planned under **Component 3**. In parallel, MEH and ADER benefitted support from GIZ under PERER I and PERER II initiatives for institutional strengthening such setting up of data base, digitization through procurement of equipment, technical support and advice for the improvement of allocation mechanisms, monitoring and data collection from operators, among others. In light of the above discussion, **institutional framework and governance sustainability** is rated **Likely**.

Environmental risks – The project is considered ecologically sustainable as it was designed to stimulate the use of small hydropower to reduce GHG emissions. In addition, for the establishment of SHPs, ESIAs need to be done to assess the impact of the project and to propose mitigation measures and compensation for the communities impacted by the project. For instance, at one of the proposed sites, the development plan had to be modified to preserve an endangered endemic fish species, the bedotia (cf. Section 2.2.1). As no environmental risk that can influence or affect the project's results and future flow of benefits has been identified, **Environmental Sustainability** is rated **Likely**.

Since all dimensions of risk are considered low, project **Sustainability** is rated **Likely**.

3.2.6. Gender mainstreaming

The project document mentioned that the guiding principle would be to ensure that both women and men would be provided equal opportunities to access, participate in, and benefit from the project, without compromising the technical quality of the project results. For instance, whenever possible existing staff would be trained and their awareness raised regarding gender issues. Sensitization would also be done for instance through workshops, trainings, etc. It is also mentioned that during decision-making processes including PSC meetings, the gender dimensions would be considered promoting gender equality and empowerment of women. The project document also mentioned that UNIDO's gender policies would be observed. There is documented evidence that efforts have been made to consider gender dimensions. For example, participation of women at PSC meetings was satisfactory. In the design of surveys for the electricity potential demand and baseline of all projects, specific gender energy consumption information had been considered. In general participation of women at workshops and conferences has been quite satisfactory.

During the project, 9 university conferences, 1 training on concrete pole, 1 training on local manufacture, and 3 general training on SHP technologies were undertaken. In total about 900 persons attended/participated at these events, and about 25% were women. Rating on **gender mainstreaming** is **Satisfactory**.

4. Performance of partners

4.1. UNIDO

UNIDO was the implementing agency. A project manager (PM), based at UNIDO Head Quarters in Vienna was nominated to manage the project, and he was supported by a project assistant. The change of UNIDO PM in February 2018 did not disrupt implementation. The incoming PM, who joined UNIDO in 2016, was a former staff of the international center for small hydropower in Hangzhou, China. The taking over was smooth as a proper handing over was done, and the past experience of SHP sector of the incoming PM greatly helped[39]. A national project coordinator (NPC) instead of national project manager (NPM), was recruited to coordinate activities with national counterparts and partners. The NPC led the PMU, which was constituted by a technical expert, and a project assistant. In general, UNIDO performed very well and showed its capacity to initiate, support, and facilitate the development the sector SHP in Madagascar. In particular, the NPC acted very professionally with great leadership, and was very pro-active in engaging the stakeholders, partners and PTFs, and succeeded to secure significant additional cash co-funding (KfW co-and CEAS), which resulted in surpassing the capacity of SHPs to be installed by more than four times than initially planned (cf. Section 2.1.1 under **Component 2** and Section 2.1.2). In addition, UNIDO's very good understanding of technical needs for the sector, the capacity building of the institutional and private sectors, and its diplomatic approach to federate all partners were key factors to achieve results. UNIDO was also able to bring on board all the major partners and stakeholders through the common platform PEPP (cf. Section 2.1.1 under **Component 1**). The UNIDO PMs participated in all of the PSC meetings except those of 2017 and 2023, where they were represented by the NPC or by a technical expert. They provided adequate and timely guidance and support that were well appreciated by the national stakeholders, who rated their performance satisfactorily (Table 8). In general, quality national and renowned international consultants that UNIDO recruited to provide technical support or service were well appreciated by the national counterparts (Table 7). One of the national consultants did not performed well however (cf. Section 2.1.1 under **Output 3.1**). The UNIDO Country Office also played an important role. It hosted the project management unit (PMU). The Country Representative facilitated communication with high level national counterparts, and she also participated in some PSC meetings and a few other events. UNIDO performance is rated **Highly Satisfactory**.

4.2. National counterparts

There is documented evidence that the key national counterparts, MEH, ADER, and ORE, already identified during the preparatory phase, fully played their roles. MEH, the main project counterpart, led the working group that undertook the legal and policy framework reform to put in place ideal conditions for the establishment of hydroelectric power plants

[39] Interview data

and encourage private operators. It also contributed to get customs duties exempted during importation of equipment procured by the project. Being the key institution for rural electrification in the country and the main counterpart, ADER was fully engaged in all the components of the project. Nationally, it was responsible for the call of proposals for SHP projects, and it would be the main counterpart responsible to follow up on the construction of the SHPs (**Component 2**). ORE, another key national counterpart, was responsible to approve the business plans for the SHPs and the tariff of the electricity. It was also actively involved in the calls for proposal, and during the construction phase in which its duties would be to check for compliance with national standards on safety issues, voltage supplied, and installation of cables. In addition to these responsibilities, the three counterparts were also active members of the PSC meetings. **National counterparts**' performance is rated **Highly Satisfactory.**

Table 8: Rating of UNIDO PM, NPC, consultants and national counterparts by respondents.

Entity	n*	Stakeholder ratings**					Average score	Overall rating***
		MU: 3	MS: 4	S: 5	HS: 6			
UNIDO	9	0	1	6	2		5.11	**S**
NPC	8	0	3	5	0		4.63	**S**
Consultants	7	0	3	2	2		4.86	**S**
MEH	3	0	2	1	0		4.33	**MS**
ADER	6	0	2	4	0		4.67	**S**
ORE	3	1	0	2	0		4.33	**MS**

*n is the number of stakeholders having rated the entity; **Ratings given by stakeholders to each entity; ***HS = **6**; **S** = **5**; **MS** = **4**; **MU** = **3**; **U** = **2**; **HU** = **1**

4.3. Private partners/subcontractors

The three private partners (HIER, MASAYA and SIER GC) have shown strong commitment throughout the entire project, from the moment they were notified as operators of the hydroelectric plants. They were heavily involved in putting together the project documents and in fund-raising. They worked in close collaboration with UNIDO and the experts

4.4. Donor

GEF was the main donor for the project. The funds were available, and fund transfers were timely and adequate. Rating is **Satisfactory**.

5. Factors facilitating or limiting the achievement of results

5.1. Project management and results-based management

Project Management. As discussed earlier (Section 4), the project has been very efficiently and effectively by the UNIDO PMs supported by a committed project team led by a dedicated NPC. Clearly, they have assumed their responsibilities and played fully their roles. The challenges the project faced (e.g. short comings for SHP financing and operational issues) were overcome thanks to the hard work and efforts of the NPC and his team under the adequate guidance of the PMs and also supported by high quality and experienced consultants. Without these commitments, hard work, and efforts, the project would not have reached the level of achievements seen, surpassing the project objectives in terms of SHP capacity installed and avoidance of GHG emission by more than 4 times. The good collaboration and strong support provided the counterparts (MEH, ADER, and ORE) throughout the implementation process were also key factors for achieving this level of accomplishment.

Results-Based Management – The findings clearly indicate that an RBM approach was adopted to implement the project. As discussed previously, the implementation of the project was based on the PRF, and the indicators mentioned therein were used to track progress at both output and outcome levels. There is documented evidence that, using a participatory approach, the PSC took decisions and made recommendations based on information provided by the PMU on project progress. Following these recommendations, adaptive and corrective measures were taken that allowed to achieve targets.

Rating on **Project Management & Results-Based Management** is **Highly Satisfactory**.

5.2. Monitoring and evaluation

M&E Design. The project document proposed an adequate detailed monitoring and evaluation (M&E) plan. This plan, with a total GEF budget of US$50,000, included all the monitoring and evaluation activities to be implemented within the project. It involved the undertaking of the inception work, the regular monitoring and analysis of performance indicators (technical, social, policy, environmental), the conduction of PSC meetings, and the drafting of PIRs as well as annual reports. These monitoring activities fell under the responsibilities of the UNIDO PM, the PMU and the PSC. The M&E included also the conduct of a midterm evaluation and an external terminal of the project. M&E design is rated Satisfactory.

M&E Implementation. As per the M&E plan, the PSC was established through a decree of MEH dated 27 January 2016. The inception workshop was not undertaken, but the first PSC meeting was held on 28 January 2016. The subsequent PSC meetings were held as planned, noting that the 5th one planned for 2020 did not take place due to the Covid19 pandemic.

There is documented evidence that the PSC was providing adequate guidance and making appropriate recommendations to adapt to unforeseen situations or to respond to challenges. For example, during the 5th meeting held on 30 June 2021, the PSC took the right decision to request a further extension of 18 months for the completion of project activities as implementation was delayed due to Covid19. It is clear that the project results framework (PRF) was used as basis for implementation, and the SMART verifiable indicators therein were used to track progress at both output and outcome levels. The midterm evaluation was carried out from March to May 2019, and most of the recommendations made were adequately addressed. In terms of reporting, all the PIR reports were timely submitted to GEF. **M&E implementation** is rated **Satisfactory**.

Monitoring of Core Project Indicators – Although the SHPs are not yet established, agreements with the co-financiers (KfW and CEAS) for their construction have been signed and activities have already started (cf. Section 2.1.1 under **Output 2.2**). When the SHPs would be operational by 2024/2025, based on estimations made, the project would have performed very well in terms of targets for three core indicators that would be largely exceeded (Table 9).

Budgeting and Funding for M&E activities. A total amount of USD 50,000 was budgeted for the midterm and terminal evaluations, while the other M&E activities were covered under project management costs. This budgeting arrangement is considered adequate. Budgeting and funding for M&E activities are rated **Satisfactory**.

Table 9: Project Core Indicators

Indicators	Target at design	Target realized
Capacity installed at SHPs (MW)	2	8.8
Annual energy production at SHPs (MWh)	13,140	53,300
Avoidance of GHG emission (tons of CO_2 equivalent)*	131,400	886,541*

*Estimation over 25 years of operation of the SHPs

Rating on **M&E** is **Satisfactory**.

5.3. Stakeholder Engagement, Communication and Knowledge Management

Stakeholder Engagement – As previously discussed, the key stakeholders (MEH, ORE, and ADER) were very much engaged in project execution (cf. Section 4.2). In addition, officials from different governmental departments were very much involved in the following project activities: (i) participation at PSC meeting; (ii) significant participation in various training, capacity building, and field visits at SHP sites; (iii) involvement of relevant officials in international travel and visits; (iv) provision of available data, although some reluctance was noted from the Department of Meteorology; and (v) sharing of information concerning the hydropower in Madagascar as part of the services provided by the consultants: MRV, NAMA, hydrological measures. It is worth noting that the Department of Meteorology greatly contributed to the establishment of the atlas of SHP sites (cf. Section 2.1.1 under **Output 3.1**). Given the nature and scope of the project, the evaluation considers that the involvement of MEEF/BNCC was minimal.

The local authorities were also very much involved in the project. The Mayor of the municipality of Belaoko Lokoho has greatly contributed to get the acceptance of the local communities for the development of the SHP project. At Mandialaza, the involvement of mayor in the negotiations was key to convince the owners to sell their land for the construction of SHP. **Stakeholder engagement** is rated **Satisfactory**.

Communication and Knowledge Management – A project website was planned to be created under **Output 3.2**, and would have been served as a centralized and networking platform to provide relevant information and easy links to all the relevant stakeholders and partners of the sector. Discussions were held to create a Department of Hydropower within MEH that would host the project website. This department did not materialized, mainly due to frequent changes of the Ministers and high level officers at MEH[40], and the website was not created. MEH and MEEF agreed to share project information, results and lessons on their respective websites. However, the evaluation could not see or retrieve any information about the project on/from these two websites[41]. It is recommended that MEH and MEEF need to consider promoting the project results and lessons on their respective website. On the other hand, the establishment of the PEPP gave an excellent opportunity to bring together the stakeholders, partners, PTFs, and private operators of the sector to share information, knowledge and experience.

Communication between stakeholders and partners occurred mainly during the PSC meetings where progress and results were discussed, and also during technical meetings and workshops. In an effort to promote the project results and for better visibility, annual newsletters and project factsheets were produced and widely distributed. The project was also promoted through national and international events: ten PEPP meetings, three Vienna Energy Forum, Austria; five World Energy Day Forum; four International Energy Day Forum; and four UN Day Forum among others. **Communication and Knowledge Management** is rated **Satisfactory**.

Overall, **Stakeholder Engagement, Communication and Knowledge Management** is rated **Satisfactory**.

6. Environmental and Social Safeguards, Disability and Human Rights

6.1 Environmental Safeguard

This aspect has been covered earlier in the report (see Section 3.1.3. under **Environmentally Sound**)

[40] Change of 8 Ministers and 5 Director General during the project duration
[41] https://meh.mg/ ; https://www.environnement.mg/

6.2 Social Safeguards, Disability and Human Rights

While the aspect of social safeguards has been discussed earlier in the document (cf. Section 3.1.3. under **Socially Inclusive**), the project document did not include disability and human rights dimensions.

7. Overarching assessment and rating table

Table 10 below summarizes the assessment of the project.

Table 10: Summary of Assessment and Ratings for the project

	Evaluation criteria	Evaluator's summary comments	Rating
A	**Impact (progress toward impact)**	Capacity of key partners built, and although SHP not yet construction, co-financing agreements already signed, and when operational project goals surpassed in terms of SHP capacity installed and avoidance of CO**2** emissions:	**S**
B	**Project design**		**S**
1	• Overall design	Participatory approach adopted to develop project. Designed components and interventions adequate and relevant to the achievement of project objectives in response to the country needs for clean energy in rural areas. One identified weakness in the underestimation budget allocation for SHP construction	S
2	• Logframe	Logical framework approach adopted. Baseline and target values as well as well-defined SMART indicators for project objective, outputs and outcomes provided to monitor progress and track results	S
C	**Project performance**	**All stated objectives achieved**	**HS**
1	• Relevance	Project assisting Madagascar to fulfill its obligations towards UNFCCC and relevant to national energy policy, and aligned with GEF Focal areas and UNIDO mandates	HS
2	• Coherence	Project created synergies with other initiatives and established fruitful collaboration for successful legal and policy framework reform	HS
3	• Effectiveness	Most stated objectives achieved. Legal and policy reform achieved, SHP construction on the right track, conducive environment in place for sustainable SHP replication	S
4	• Efficiency	Despite delays, most activities completed and outputs within budget and construction of SHP funded by co-financing on the right track. Materialized co-financing largely exceed pledged amount at design	HS
5	• Sustainability of benefits	No socio-political, institutional framework & governance, financial and environmental	L

	Evaluation criteria	Evaluator's summary comments	Rating
		risks identified, sustainability of project benefits considered likely.	
D	**Cross-cutting performance criteria**		**S**
1	• Gender mainstreaming	Adequate effort done by project team to mainstream gender dimension during implementation. Satisfactory involvement and participation of women seen in project activities	S
2	• M&E: ✓ M&E design ✓ M&E implementation	Adequate budgeted M&E plan available. Proper project monitoring and tracking of results done using SMART proposed in the PRF. All PSC meetings held and relevant reports (e.g. PIRs) submitted timely.	S
3	• Results-based Management (RBM)	RBM approach adopted and proper monitoring of project progress done during PSC meetings involving all key stakeholders.	S
E	**Performance of partners**		HS
1	• UNIDO	Role of UNIDO crucial for project to achieve success. Timely and critical actions taken, and technical back-stopping provided through high quality international and national experts.	HS
2	• National counterparts	Key national counterparts (MEH, ADER and ORE) fully played their roles, actively involved in project activities and supported by local authorities.	HS
3	• Private partners	Strong commitment showed by HIER, MASAYA, and SIER GC, the three operators.	S
4	• Donor	GEF funds available, and materialization of very significant co-financing contributing to exceed expected project goals.	S
F	**Environmental and Social Safeguards, disability and human rights**		S
	• Environmental & Social safeguards	Adequately addressed	S
	• Disability and human rights	Not considered in the design	N/A
G	**Overall assessment**		S

RATING OF PROJECT OBJECTIVES AND RESULTS

- Highly satisfactory (HS): The project had no shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Satisfactory (S): The project had minor shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Moderately satisfactory (MS): The project had moderate shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Moderately unsatisfactory (MU): The project had significant shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Unsatisfactory (U) The project had major shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Highly unsatisfactory (HU): The project had severe shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.
- Likely (L): There are no risks affecting this dimension of sustainability.
- Moderately likely (ML). There are moderate risks that affect this dimension of sustainability.
- Moderately unlikely (MU): There are significant risks that affect this dimension of sustainability.
- Unlikely (U): There are severe risks that affect this dimension of sustainability.

8. Conclusions, recommendation, lessons learned and good practices

8.1. Conclusions

This highly relevant project was very efficiently and effectively managed by a committed project management unit led by a dedicated and pro-active national project coordinator under the adequate guidance and supervision of the UNIDO PMs. Due to an underestimation of budget allocation at design, there was a significant short fall of funds for the establishment of the SHPs. The decision was thus taken to identify potential co-financiers. This took time, but in the end the project team successfully managed to leverage cash co-financing more than five times the amount pledged at design. Although the implementation was delayed by three years, the significant co-financing would contribute to the establishment of SHPs with more than quadruple the capacity initially planned, which would allow the avoidance of CO2equivalent emission by more than six times than the amount anticipated at design. Noting that the construction of the SHPs, financed by the co-funds leveraged, have not yet started, but the co-financing agreements have already been signed and tenders for the construction already done. The active involvement of key partners and stakeholders as well as their support contributed to an effective implementation and the achievements of all targets. As no risks that can jeopardize the projects outcomes and future flow of projects benefits have been identified, the sustainability of project is considered likely.

8.2. Recommendations

For continued relevance, sustainability of the project results and impact, the following recommendations are addressed to various key stakeholders of the project.

Recommendation 1: To UNIDO

1. Although the SHPs have not been established yet, the project performed very well in successfully completing all the other activities, and achieved most of completed stated objectives. In particular, when the SHP would operational, the anticipated core indicators would be largely surpassed. However, although capacities have been built, Madagascar still needs support and assistance given the still low electrification of the rural areas. It is in that context that the country has already obtained financial support from the German bilateral cooperation for the period 2024 – 2026. UNIDO could take advantage of the good lessons learned from this project and the momentum built so far to develop a follow up initiative to consolidate the results already achieved for further capacity building and SHP replication.

2. The UNIDO Country Office supported the project by hosting the project team and facilitating communication with counterpart at high levels. For future projects and where relevant, UNIDO could consider also the involving the Country Offices in the development and implementation of the project to some extent, which would definitely contribute to better results. This is directly linked to Recommendation 4.

3. In addition to Recommendation 5 and also relevant to all projects already implemented in all GEF Focal Areas, UNIDO could consider establishing a knowledge hub (e.g. platform linked to UNIDO website) where the results, lessons, and good practices generated through all these initiatives could be uploaded and shared to the international community.

Recommendation 2: To UNIDO and national authorities

4. The establishment of the SHPs, which would be funded by already secured co-financing from KfW and CEAS, has not been completed yet. UNIDO, through its Country Office, and the national authorities should closely monitor the construction of the SHPs until completion.

Recommendation 3: To National authorities

5. As a project website was not created, it was agreed that MEH and MEEF would share project information, results, and lessons on their respective websites. This has not happened thus far. It is recommended that the concerned authorities take the necessary steps to remediate this situation.

6. The project has been successfully completed and produced tangible results and good lessons. The design included a replication phase (Component 3), for which capacity has been built/strengthened and a financial mechanism has been put in place. It is recommended that the authorities take necessary action to operationalize the FNED, one of the financial instruments proposed, and ensure that the agreed funds are available.

7. In relation to Recommendation 6, the authorities should consider promoting the project results and lessons in view of encouraging the private sector to invest in the hydroelectricity sector.

8. The MRV, a very valuable tool for the estimation of GHG emissions, has been developed by the project. This tool can be used for all renewable sources of energy and other industrial sectors. However, this tool has not been used due to a lack of reliable data. Although, some government officers have been trained on its use, for various reasons (trained officers retiring or changing positions) this knowledge will be lost in the long run. It is recommended that the relevant authorities (MEEF/BNCC) take the necessary actions so that such loss of knowledge does not occur by putting an appropriate mechanism/system in place, for example the training of other officers on the use of the MRV tool – training of trainers.

8.3. Lessons learned

The project has been successfully completed and the following key lessons stemmed out

Two key lessons that emerged:
1. A very high sense of ownership was seen among the stakeholders, local authorities, and partners of the project. Involving key project partners and stakeholders early in the implementation process would facilitate their support and ensure their commitment. 2. The project was considerably delayed due to the inappropriate allocation of budgets for the establishment of budgets (Grants: 20% and private sector: 80%). The current practice in Madagascar was the opposite (Grants: 80% and private sector: 20%). It took time for the project to identify co-financiers to secure the short fall of funds. The key lesson is that while design projects, developers need

to take into consideration the prevailing local context in order to avoid such situations.

9. Annexes

9.1. Annex 1: ToR of the evaluation

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE

Independent terminal evaluation of project

Increased energy access for productive use through small hydropower development in rural areas in Madagascar

UNIDO ID: 120094
GEF Project ID: 5317

04/2023

Contents

I. Project background and context

1. Project factsheet[42][43]

Project title	Increased energy access for productive use through small hydropower development in rural areas
UNIDO project No. and/or ID	120094
GEF project ID	5317
Region	Africa
Country	Madagascar
Planned implementation start date (for GEF projects, as indicated in CEO endorsement/Approval document)	05/05/2015
Planned implementation end date (for GEF projects, as indicated in CEO endorsement/Approval document)	05/2020
Actual implementation start date	07/2015
Actual implementation end date	07/2023
GEF Focal Areas and Operational Project (in addition, also indicate whether the project is linked to a GEF programme)	Climate Change (CCM)
Implementing agency(ies)	UNIDO
Executing partner(s)/entity(ies)	Ministry of Energy and Hydrocarbons; Ministry of Environment and Sustainable Development; Rural Electrification Development Agency
Donor(s):	GEF
Total project allotment (for GEF: project grant)	$ 2,855,000
Total co-financing at design (in cash and in-kind)	Cash: $ 220,000 In-kind: $ 14,085,000
Materialized co-financing at project completion (in cash and in -kind)	Cash: $ 59 504 124 In-kind: $ 160 000
Mid-term review date	06/2019

(Source: GEF CEO Endorsement)

[42] Data to be validated by the Consultant

2. Project context

Country background information

Madagascar has a population of about 28 mio. (2020) inhabitants and one of the world's highest poverty rates (WB, 2022). The country has had a stable government since January 2019 with 30 ministers, 9 of whom are women (status Oct. 2022, WB). New elections are due in 2023. Between 2013 and the onset of the pandemic in 2020 Madagascar's growth averaged 3.5%.[44] According to the World Bank, Madagascar's recession following the pandemic was three times deeper than in other Sub-Saharan African countries and the economy contracted by 7.1%. As a result of the pandemic and the impact of the war in Ukraine, which affects Madagascar's main trading partner, the European Union, the poverty rate reached a record high. In July 2022, fuel prices had to be raised, which further implicates the population. According to the World Food Programme (WFP), by March 2023 more than 11 mio. people could be food insecure in Madagascar.[45]

Project information

The project was developed in a context where Madagascar experienced a period of political transition (2009 - 2013) while implementation started under a new democratic regime in 2014. Since then, the electricity sector became a strategic priority, especially with the objective to improve and extent electricity facilities to rural areas. (MTR, 2019)

The PIF was submitted to GEF on 22 February 2013 and identified the following problem: "Madagascar has a considerable land area (587,040 km2) and heavy annual rainfall (up to 3600 mm) (World Energy 2010) mainly concentrated in the middle, north and north- west of the country. Therefore, the potential for hydropower is correspondingly large: estimated at 7,800 MW (Ravina & Bolgar 2009), which is the fifth largest hydro potential in the African continent. Yet, just 250 MW is exploited so far which represent only 3% of the potential (ADER). Although in principle several conditions are present to reverse the trend in favor of small hydropower over the fossil-fuel based alternative (i.e. the political awareness, initial steps in incentive schemes), a number of barriers still prevent an increased uptake of small hydropower (SHP) as viable economic solutions."

Since 2015, the Government has launched together with technical and financial partners (PTF) several reforms in the energy sector. This included a new energy policy and an electricity and grid code. The implementation of this project falls into this reform period and the project hopes to make its best possible contribution to it. Madagascar's main strategic focus for the energy sector lays in its decision to opt for the development of an energy mix based on renewable energy, which includes hydropower. (MTR, 2019)

As the MTR states: "It is important to underline that the project was designed and partly implemented in a context of political difficulties which saw amongst others insufficient electricity supply for the country : Malagasy cities served by the Malagasy State Water and Electricity Company "Jiro sy rano Malagasy" (Jirama) network have been victims of frequent power cuts and the rural electrification efforts carried out for example by one of the main partners of this project, the Development Agency for rural electrification, ADER (Agence de Développement de l'Eléctrification Rurale), has received as an result an increased interest from several PTFs (e.g. the Gesellschaft für Internationale Zusammenarbeit (GIZ)): between

[44] https://www.worldbank.org/en/country/madagascar/overview
[45] https://www.worldbank.org/en/country/madagascar/overview/food

2009-2015, 37 electrification projects, 10 of which concern small hydropower projects with mostly less than 150 kW run by eight private operators, were commissioned. Nevertheless, there were only two small hydro-power plants between 500 -700 kW, further demonstrating the lack of experience for building higher capacity small hydro-power (SHP) plants.[46]

With a total budget of USD 2,855,000 and USD 14,305,000 of co-financing , the project aims to stimulate the use of small hydro-power (SHP) in Madagascar to reduce Greenhouse Gas (GHG) emissions, to trigger productive use for sustainable income generation for women and men in the target areas, in alignment with strategic and policy priorities of the Government of Madagascar (GOM).

Project implementation started in July 2015 and the initial project end date was planned for May 2020. Actual implementation end date is July 2023.

The project document foresaw regular monitoring, an independent mid-term review (MTR) and a terminal evaluation (TE). An independent MTR was carried out between March to May 2019 (MTE report, July 2019), and included a field mission to Antananarivo, Madagascar in March 2019.

3. Project objective and expected outcomes

The project aims to stimulate the use of small hydro-power in Madagascar to reduce Greenhouse Gas (GHG) emissions, to trigger productive use for sustainable income generation for women and men in the target areas, in alignment with strategic and policy priorities of the Government of Madagascar (GOM). The project will support this by triggering private sector investment in combination with public funding through market demonstration, development of appropriate financial instruments, establishment of technical specifications, capacity building (for small and medium-sized enterprises (SME), academic institutions, policy makers & financial sector) and by strengthening the policy and regulatory framework in Madagascar, certainly aligned with strategic and policy priorities of its GOM.

In the following, the main project components, outcomes and outputs are briefly presented:

Component 1: Policy and regulatory framework: This component aims to strengthen the policy and the legal and institutional framework in Madagascar in order to promote the development of renewable energy projects, especially SHP, for productive use in rural areas. Furthermore, the project will set up tools to monitor the CO_2 emissions from SHP, in a format that is recognised as per international standard with the objective to help stakeholders to assess the potential reduction of GHG emissions generated by SHP plant.

a. **Expected outcome 1:** National Low-Carbon Energy Development Plan developed and tailored initiatives to support SHP in place;
b. **Expected output 1.1:** Policy framework on RE for productive uses reviewed and recommendations to streamline policies/incentive schemes towards a greater use of rural based SHP proposed;
c. **Expected output 1.2:** Standardized reference emission levels established.

Component 2: Private-led SHP technology demonstration: This component searches to demonstrate the technical and commercial viability of at least 2 MW of new SHP capacity.

[46] https://ader.mg/#help

The project provided incremental support (technical and financial) to private sector players. The SHP demonstrations will serve as a learning exercise to provide an efficient methodology to replicate SHP systematically for the future, and train those engaged in the sector.

d. **Expected outcome 2:** Construction of SHP based mini-grids for productive use and income generation
e. **Expected output 2.1:** Target SHP projects fully prepared for development and cofinancing secured
f. **Expected output 2.1**: New SHP capacity (at least 2 MW) constructed and operational

Component 3: capacity strengthened to ensure sustainable replication: This component presents three main actions which cover: i) Development of financing instrument to facilitate scale-up, tools to facilitate risk mitigation, and pipeline of projects which can be developed and replicated, ii) Capacities buildings of major actors from university, private, government, through tailored training(s) and knowledge management. It includes development of collaboration with the universities to well-prepare future local engineer to intervene in the development of SHP project, improvement of communication, network platform and international visit and exchange, training of local organization in manufacture of turbines and in building concrete pole and iii) Development of a Nationally Appropriate Mitigation Action (NAMA) for inclusion in the NAMA Facility.

g. **Expected outcome 3:** i) Enabling environment for sustainable SHP replication in place and ii) Capacity of key national actors strengthened
h. **Output 3.1:** A mechanism to facilitate sustained securing of finance developed through appropriate business models between public entities and private & financial sectors
i. **Output 3.2:** Capacities of major actors from private, government, and finance and target SME sectors strengthened in the specifics of SHP through tailored training and knowledge management
j. **Output 3.3:** A Nationally Appropriate Mitigation Action (NAMA) for the SHP sector developed

Component 4: Monitoring and evaluation and dissemination carried out: particularly focuses on Components 1 and 2 (the Policy and Demonstration activities) but also considers the effectiveness of the replication and capacity building activities in Components 3. The dissemination work in this Component is on the reporting of carbon benefits within the GEF project and setting up an ability to continue this formally within the country for SHP and potentially other forms of renewable energy. Gender aspects will be paid particular attention to during M&E activities and which have been included in this mid-term review and final evaluation.

k. **Expected outcome 4:** Project's progress towards goals confirmed and necessary adjustments made, and evaluation system for project's GHG emission reductions in place
l. **Output 4.1:** Mid-term review and final evaluation carried out; project's progress assessed, documented and recommended actions formulated
m. **Output 4.2:** GHG emission reductions from the project monitored and evaluated and carbon registry for the project in place.

The project document sets out three key performance indicators (KPI):

I. Number of SHP projects installed and stimulated (KPI 1),
II. Energy generated from SHP technology (in MWh) (KPI 2) and

III. Direct CO2 emissions reduced (tonnes of CO2eq) (KPI 3)

The following results to be achieved during project duration are:
I. SHP capacity of a least 2 MW realized by 2020;
II. Energy generated annually from SHP through demonstration projects = 13,140 MWh per year, operating from 2018-2038; and,
III. Direct emission reduction of 131,400 tonnes, and indirect emission reductions between 525,600 tons (bottom-up) and 578,160 tons (top down) by the end of the project.

4. Project implementation arrangements

Key stakeholders' roles and responsibilities:

The project tries to involve as much actors as possible from the sector of SHP in Madagascar. The following list provides an overview of the main stakeholders and the project implementation structure:

9. Ministère de l'Enérgie et des Hydrocarbures - Ministry of Energy and Hydrocarbons (MEH) and its specialised departments: Agence de Développement de l'Electrification Rurale (ADER), Office of Electricity Regulation (ORE), JIRAMA;
10. Ministère de l'Environnement, et du Développement Durable - Ministry of Environnemnt, and Sustainable Development (MEDD): mainly its Bureau National de Coordinatation des Changements Climatiques - National Coordination Office of Climate Changes (BNCCREDD+);
11. Consulting Companies: Perspectives Climate Group, HYDROCONSEIL, 3ERAE, ARTELIA, EOSOL; Biotope Madagascar; LNTPB, BECKER / RENERCONCYS
12. Private sector: HIER, MASAHYA, SIER GC;
13. Donors and Bank: German Development Corporation (Kreditanstalt für Wiederaufbau (KfW), GIZ, European Union (EU), World Bank (WB), GEF-SGP;
14. University and students: Superior School of Polytechnics Madagascar (ESPA Madagascar), Superior Institut of Technology of Madagascar (IST Madagascar);
15. NGO/CSO:Centre Ecologique Albert Schweitzer 5CEAS), Fanamby.

At the project execution level, two structures have been established:

16. Project steering committee (PSC): The PSC realises regular reviewing and monitoring project execution progress provides strategic, transparency and guidance advice, facilitates co-ordination between project partners, and ensures ownership and sustainability of the project results. PSC members are the UNIDO team: Project Manager, Project Coordinator, ADER, ORE, and BNCCC. PSC is led by the General Manager of the MEEH.
17. Project coordination: The NPM in Antananarivo, Madagascar is responsible for the day-to-day management and execution of project activities as in the agreed project work plan. He works closely with an administrative and financial officer. This team is headed by a project management unit (PMU) in Vienna (UNIDO-HQ).

6. Main findings of the Mid-term review (MTR)

The MTR summarizes: Two out of three general project results (2. Energy generated from SHP technology (in MWh) and 3. Direct CO_2 emissions reduced (tons of CO_2)) could not be evaluated because construction and exploitation of the SHP have not been started yet. Vice versa, the first project result has been overachieved by the project (2 MW baseline target against foreseen 11.1 MW, the latter still in study phase). The general project's result until May 2019 are summarised in the table below:

Key Performance Indicators	Project Targets to be achieved in July 2020	Project Targets achieved in May 2019 (MTR)
1. Number of SHP projects installed and stimulated	SHP capacity of a least 2 MW realized by 2020	03 SHP of a total capacity of 11.1 MW in the final study phase
2. Energy generated from SHP technology (in MWh)	13.140 MWh produced yearly between 2018-2038	As exploitation has not yet started, results are not yet available. One can assume the following results through calculation applying the CEO: i) Three SHP providing a cumulated capacity of 11.1 MW, ii) The production of three SHP permits 37. 683 MWh/year between 2020-2040 (Mandalobe : 4,133 MWh/year, Andriaman-javona : 3,050 MWh/year and Belaoko Lokoho : 30,500 MWh/year); iii) Direct emsission: T CO2eq; (Calculation: 37,683 x 20x0,5= 376,830 TCO_2eq)
3. Direct CO2 emissions reduced (tonnes of CO2eq)	Direct emission reduction of 131,400 tons, and indirect emission reductions between 525,600 tons (bottom-up) and 578,160 tons (top down)	

Further details can be obtained from the MTR report (July 2019).

7. Budget information

Table 1. Financing plan summary - Outcome breakdown

Project Component	Expected Outcomes	Indicative Grant Amount ($)	Indicative Cofinancing ($)	Total ($)
1. Policy and regulatory framework	National Low-Carbon Energy Development Plan developed and initiatives to support SHP in place tailored.	200,000	1,110,000	1,310,000
2. Private-led SHP technology demonstration	New SHP capacity (at least 2 MW) constructed and operational	400,000	2,000,000	2,400,000
	SHP capacity of 2 MW on preselected sites realised	1,400,000	7,000,000	8,400,000
3. Capacity strengthened to ensure sustainable replication	Enabling environment for sustainable SHP replication in place Capacity of key national actors strengthened	670,000	3,400,000	4,070,000
4. Monitoring and evaluation and dissemination carried out	Project's progress towards goals confirmed and necessary adjustments made, and evaluation system for project's GHG emission reductions in place	50,000	120,000	170,000
Project Management Cost		135,000	675,000	810,000
Total ($)		2,855,000	14,305,000	**17,160,000**

Source: Project document 2015

Table 2. Co-Financing source breakdown

Name of co-financier (source)	Classification	Type (Specify: cash and/or in-kind)	Total (in USD)
UNIDO	Implementing Agency	Cash In-kind	60,000 60,000
Ministry of Energy and Hydrocarbons; **Ministry of Environment, Ecology, Sea and Forest**	National Government	Cash In-kind	4,000,000 160,000
ASSIST	Counterpart: Private Sector	Cash	6,500,000
Bank of Africa	Counterpart: Finance Sector	Loan	3,525,000
Total co-financing (in USD)			**14,305,000**

Source : Project document 2015

Table 3. UNIDO budget allocation and expenditure by budget line

Budget line	Items by budget line	Year 1 (2015)	Year 2 (2016)	Year 3 (2017)	Year 4 (2018)	Year 3 (2019)	Year 4 (2020)	Total expenditure (at completion) 31/03/2023		Total allocation (at approval)	
								(USD/~~EUR~~)	%	(USD/~~EUR~~)	%
1100	Staff & Intern Consultants	15 000	10 000	55 000	30 000	35 000	30 000	718 898,47	27,41%	175 000	6,13%
1500	Local travel				5 000,00		5 000	117 304,93	4,47%	10 000	0,35%
1600	Staff Travels							707,67	0,03%	0	0,00%
1700	Nat. Consult./Staff	10 000	40 000	40 000	40 000	40 000	20 000	253 495,31	9,67%	190 000	6,65%
2100	Contractual Services		260 000	880 000	910 000	310 000	20 000	1 100 218,68	41,95%	2 380 000	83,36%
3000	Train/Fellowship/Study		10 000	20 000	20 000	10 000		5 484,22	0,21%	60 000	2,10%
3500	International Meetings							38 458,50	1,47%		
4300	Premises							6 616,98	0,25%	0	0,00%
4500	Equipment							304 934,37	11,63%	0	0,00%
5100	Other Direct Costs		5 000	15 000		20 000		76 300,92	2,91%	40 000	1,40%
Total		**25 000**	**325 000**	**1 010 000**	**1 005 000**	**415 000**	**75 000**	**2 622 420,05**	**100%**	**2 855 000**	**100%**

Source: Project document 2015 and UNIDO Project Management ERP database as of 31/03/2023

Table 4. UNIDO budget allocation and expenditure by component

		Total allocation (at approval)		Total expenditure (at completion) 31/03/2023	
#	Project components	USD	%	USD	%

1	Policy and regulatory framework	200 000	7,01%	166 298,06	6,34%
2	Private-led SHP technology demonstration	1 800 000	63,05%	1 683 072,59	64,18%
3	Capacity strengthened to ensure sustainable replication	670 000	23,47%	596 933,07	22,76%
4	Monitoring and evaluation and dissemination carried out	50 000	1,75%	11 477,82	0,44%
7	Project management	135 000	4,73%	164 638,51	6,28%
	Total	**2 855 000**	**100%**	**2 622 420,05**	**100%**

Source: Project document 2015 and UNIDO Project Management ERP database as of 31/03/2023

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 07/2015 to the estimated completion date in 07/2023.

The evaluation has two specific objectives:

i. Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, coherence, 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 UNIDO Evaluation Policy47, the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle48, 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 exercise using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the process. The evaluation team leader will liaise with the UNIDO Independent Evaluation Unit (EIO/IEU) on the conduct of the evaluation and methodological issues.
The evaluation will use a theory of change approach[49] 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.

[47] UNIDO. (2018). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2018/08)
[48] 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)
[49] For more information on Theory of Change, please see chapter 3.4 of UNIDO Evaluation Manual

The theory of change will depict the causal and transformational pathways from project outputs to outcomes and longer-term impacts. It also identifies the drivers and barriers to achieving results. The learning from this analysis will be useful for the design of the future projects so that the management team can effectively use the theory of change to manage the project based on results.

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, technical 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 May/June 2023.
1. On-site observation of results achieved by the project, including interviews of actual and potential project beneficiaries.
2. Interviews with the relevant UNIDO Country Office(s) representative to the extent that he/she was involved in the project, and the project's management members and the various national [and sub-regional] authorities dealing with project activities as necessary.

(d) **Online data collection** methods: will be used to the extent possible.

Evaluation key questions and criteria

The key evaluation questions are the following:

1) How well has the project performed in terms of relevance, coherence, effectiveness, efficiency, and sustainability?
2) To what extent does the project generate or is expected to generate higher-level effects (impact)?
3) What are the project's key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved?
4) To what extent will the achieved results and benefits be sustained after completion of the project?
5) What are the key drivers and barriers to achieve the long-term objectives of the project? 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, transformational objectives?
6) Has the project addressed cross-cutting issues (environmental and social safeguards, human rights and disability)?
7) 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?

8) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?
9) Have the recommendations from the mid-term evaluation been addressed/implemented?

These evaluation questions will be further revised in the inception report and an evaluation matrix will be developed.
The table below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2 of UNIDO Evaluation Manual.

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

Performance of partners

The assessment of performance of partners will ***include*** the quality of implementation and execution of the GEF Agencies and project executing entities in discharging their expected roles and responsibilities. The assessment will take into account the following:

- Quality of Implementation, e.g. the extent to which the agency delivered effectively, with focus on elements that were controllable from the given implementing agency's perspective and how well risks were identified and managed.
- Quality of Execution, e.g. the appropriate use of funds, procurement and contracting of goods and services.

Other assessments required by the GEF for GEF-funded projects:
The terminal evaluation will assess the following topics, for which ***ratings are not required***:

1. **Need for follow-up**: e.g. in instances financial mismanagement, unintended negative impacts or risks.
2. **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. At the terminal evaluation point, the Project Manager will update table 3 on co-financing and add two more columns to submit to the evaluation team: 1) Amount of co-financing materialized at mid-term review (MTR); and 2) Amount of co-financing materialized at terminal evaluation (TE). The evaluation team has the responsibility to validate and verify the co-financing amount materialized during the evaluation process. This table MUST BE included in the terminal evaluation report, as per requirement by the GEF.
3. **Environmental and Social Safeguards**[50]: 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.
4. **Updated Monitoring and Assessment tool of core-indicators:** The project management team will submit to the evaluation team the up-to-date core-indicators or tracking tool (for older projects) whereby all the information on the project results and benefits promised at approval and actually achieved at completion point must be presented. The evaluation team has the responsibility to validate and verify updated core-indicators during the evaluation process. This table MUST BE included in the terminal evaluation report, as per requirement by the GEF.
5. **Knowledge Management Approach**: Information on the project's completed Knowledge Management Approach that was approved at CEO Endorsement/Approval.

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 table below.

Table 6. Project rating criteria

Score	Definition	Category

[50] 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

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).	
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 05/2023 to 07/2023. The evaluation will be implemented in five phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

1) Inception phase: The evaluation team will prepare the inception report providing details on the evaluation methodology and include an evaluation matrix with specific issues for the evaluation to address; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
2) Desk review and data analysis;
3) Interviews, survey and literature review;
4) Country visits (whenever possible) and debriefing to key relevant stakeholders in the field;
5) Data analysis, report writing and debriefing to UNIDO staff at the Headquarters; and
6) Final report issuance and distribution with management response sheet, and publication of the final evaluation report in UNIDO website (by EIO/IEU).

V. Time schedule and deliverables

The evaluation is scheduled to take place from 05/2023 to 07/2023. The evaluation field mission is tentatively planned for 06/2023. At the end of the field mission, the evaluation team will present the preliminary findings for key relevant stakeholders involved in this project in the country. The tentative timelines are provided in the table below.
After the evaluation field mission, the evaluation team leader will organize a virtual meeting for debriefing and presentation of the preliminary findings of the terminal evaluation. The draft TE report will be submitted 4 after the end of the mission. The draft TE report is to be shared with the UNIDO Project Manager (PM), UNIDO Independent Evaluation Unit, the UNIDO GEF Coordinator and GEF OFP and other stakeholders for comments. The ET leader is expected

to revise the draft TE report based on the comments received, edit the language and submit the final version of the TE report in accordance with UNIDO EIO/IEU standards.

Table 7. Tentative timelines

Timelines	Tasks
05/2023	Desk review and writing of inception report
05/2023	Online briefing with UNIDO project manager and the project team based in Vienna.
06/2023	Field visit to Madagascar. Data collection and interviews, incl. With GEF OFP. Debriefing of stakeholders at the end of the field visit.
06/2023	Debriefing r online. Preparation of first draft evaluation report.
07/2023	Internal peer review of the report by UNIDO's Independent Evaluation Unit and factual validation by other stakeholders; Incorporation of comments for finalization of the evaluation report.
07/2023	Final evaluation report

Evaluation team composition

For more information on the evaluation team composition, see Evaluation Manual.

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 a mixed skill set and experience including evaluation, relevant technical expertise, social and environmental safeguards and gender. 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 evaluation team 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 management team in Madagascar will support the evaluation team. The UNIDO GEF Coordinator and GEF Operational Focal Point (OFP) 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.

VI. 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 team member, a short inception report that will operationalize the ToR relating to the evaluation questions and provide information on what type 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 evaluation team members; field mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable51.

Evaluation report format and review procedures

The draft report will be delivered to UNIDO Independent Evaluation Unit (with a suggested report outline) and circulated to UNIDO staff and key 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 will be sent to UNIDO's Independent Evaluation Unit for collation and onward transmission to the 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 evaluation team 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 or through a virtual meeting afterwards.
The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, 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 by UNIDO Independent Evaluation Unit.

VII. 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 learnt and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO's Independent Evaluation Unit).
The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality. 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 learnt) 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

[51] The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by UNIDO Independent Evaluation Unit.

9.2. Annex 2: List of documents consulted

1. Project Document and Annexes
2. Project Steering Committee (PSC) notes and powerpoint presentation
3. Project Implementation Reports for 2016, 2017, 2018, 2019, 2020, 2021, and 2022
4. Annual and Progress Reports
5. Newsletter of the project: 2016, 2017, 2018/2019, 2019/2020, 2021/2022
6. All awareness-raising and training workshop reports: ESPA, IST, IME
7. Reports of consultants and service providers: BIOTOPE, HYDROCONSEIL, EOSOL, PERSPECTIVE/CARBONIUM, 3ERAE, RAJAONA Anisca
8. Mid-Term Evaluation Report 2019
9. Financial reports
10. Copies of official letters: co-financing letter KFW
11. Copies of flyers and brochures
12. Other relevant documents such as meeting reports, and list of participants.

9.3. Annex 3: List of interviewees

Name	Positionq	Organisation
Heng LIU	Project Manager	UNIDO
Louis TAVERNIER	National Project Coordinator	UNIDO
Volatiana RAKOTONDRAZAFY	Country representative	UNIDO
Milson RATSARAEFADAHY	Rural electrification expert	UNIDO
Mamisoa RAKOTOARIMANANA	Executive Secretary	ADER
Joelinet VANOMARO	Technical Director	ADER
Lovakanto RAVELOMANANA	National coordinator	BNCCC/REDD+
Rivo RASOLOARIJAONA	Executive Secretary	ORE
Hery RAKOTONINDRAINY	Technical Director	ORE
Herinjanahary RALAIARINORO	Head of Hydrology Department	DGM
Jean Luc RANDRIAMAMPIANINA	Former deputy director	GIZ/PERER II
Otmar WERNER	Senior Portfolio Manager	KFW
Nomena RASOANAIVO	Renewable Energies Coordinator	CEAS
Valiha RAKOTOMANAKASINA	Socio organisateur basé à Madialaza	CAEAS
Chloe ARZEL	Project manager	CEAS
Dieudonné RAOELIJAONA	General Director	HIER
Ny Aina RANAIVISON	Director	MASHAYA
Sylvain FENO	Chef de projet	SIER GC

Guillaume CREPIN	Director	BIOTOPE
Jean Marie RAOELISON	Service Provider	Consultant
Rija RANDRIANARIVONY	Service Provider	Consultant : Expert National Fabrication Turbines
Andrianane RAKOTOSOAMANANA	Deputy mayor	Mandialaza Commune
Basile RANDRIAMANANTSOA	President of Communal board	Mandialaza Commune
Sambatra RAMIANDRASOA	General manager	MEH
Dalia DIEUDONNE	Rural Electrification Support Director	MEH
Ny Aina RANAIVOSON	Partnerships Director	ESPA
Alain RANDRIAMAHERISOA	Head of Hydraulic Department	ESPA
Vonjy RAMAROZATOVO	Head of Electrical Department	ESPA
Casimir RANAIVOSON	General Director	CASIELEC
Paul RAKOTONDRALAMBO	General Director	BETC Nanala
Ny Aina RAKOTOBE	Director	3ERAE

9.4. Annex 4: Evaluation Framework

Evaluation criteria	Evaluation indicators	Means of verification
Project Design		
The evaluation will examine the extent to which: • The project's design is adequate to address the problems at hand. • The project has a clear thematically-focused development objective, the attainment of which can be determined by a set of verifiable indicators. • The project was formulated based on the logical framework (project results framework) approach. • Was there a need to reformulate the project design and the project results framework given changes in the countries and operational context? • Are relevant environmental and social risk considerations included at the time of project design?	• Situational analysis • Project results framework • Risk assessment and management • Adjustments made due to operational context • Environmental and social safeguards	• Project document and annexes • Interviews with UNIDO, National Focal Point, key national partners, and other project stakeholders
Relevance and Coherence		
The evaluation will examine the extent to which the project is relevant or coherent to the: • National development and environmental priorities and strategies of the national governments and their populations, as well as regional and international agreements. • Target groups: relevance of the project's objectives, outcomes, and outputs to the different target groups of the interventions (e.g., national governments, private sector, municipalities, NGOs, women's associations, etc.).	• Level of alignment with regional, sub-regional, and national environmental priorities, as well as with UNIDO and GEF strategic priorities at the	• Pertinent project documents and annexes • Interviews with UNIDO, national project coordinators,

Evaluation criteria	Evaluation indicators	Means of verification
• GEF's focal areas/operational program strategies: In retrospect, were the project's outcomes consistent with the GEF focal area(s)/ operational program strategies? Ascertain the likely nature and significance of the contribution of the project outcomes in the reduction CO_2 emission from energy sector • Does the project remain relevant taking into account the changing environment? • To what extent was the project aligned with – and complementary to – other work being delivered (e.g. GIZ, EU, WB, etc.) within the country?	time of design and implementation	key national stakeholders
Effectiveness and Progress to impact		
The evaluation will assess the objectives and current results (results to date): • The evaluation will assess whether the results at various levels, including outcomes, have been achieved. In detail, the following issues will be assessed: Have the expected outputs and outcomes, been successfully achieved? Has the project generated any results that could lead to changes of the assisted institutions? Have there been any unplanned effects? • Are the project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, were there any real outcomes of the project? If there were, are these commensurate with realistic expectations from the project? • How do the stakeholders perceive the quality of outputs? Are the targeted beneficiary groups actually being reached? • Has the project generated any results that could lead to changes of the assisted institutions? Have there been any unplanned effects? • Identify actual and/or potential longer-term impacts or at least indicate the steps taken to assess these. • Have the relevant authorities taken measures to promote or implement the National Low-Carbon Energy Development? Are the incentive mechanisms in place? • Has the project met its objectives in terms of the KPIs (Number of SHP projects installed and stimulated; energy generated from SHP technology (in MWh); and direct CO2 emissions reduced (tons of CO2eq)? • Does the GoM plan to promote the demonstrated SHP projects in other rural areas? • What were the major constraints and challenges faced during the project implementation?: technique, finance, social, politique, …	• Target for outputs, outcomes, and objectives of Project Results Framework • Occurrence of intermediate states in the participating countries • Stated contribution of stakeholders in achievement of outputs	• Review of relevant documents such as PIRs, progress reports, meeting reports • Interviews with UNIDO, NPC, National Focal Point, key government representatives, private sector, beneficiaries, consultants and other partners such as NGOs, academia, etc.
Efficiency at current stage of implementation		
The extent to which: • Is the project cost effective? Has the project used the most cost-efficient options? • Has the project produced results (outputs and outcomes) within the expected time frame? Has project implementation been delayed? If the project has been delayed, has it affected cost-effectiveness or results? • Have the project's activities been in line with the schedule of activities as defined by the project team and annual work	• Level of compliance with expected milestones mentioned in logical framework and with respect to financial	For all questions under Efficiency: • PIRs, PSC meeting and technical committee reports,

Evaluation criteria	Evaluation indicators	Means of verification
plans? Have the disbursements and project expenditures been in line with budgets? • Have the inputs from the donor, UNIDO, and government/ counterpart been provided as planned, and were they adequate to meet the requirements? Was the quality of UNIDO inputs and services as planned and timely? • Was there coordination with other UNIDO and other donors' projects, and did possible synergy effects happen? • Give the reasons/justifications for the extension granted to the project. • What has been the impact of COVID-19 on project implementation?	planning and annual plans • Level of co-finance mobilized • Level of inclusion of pre-existing initiatives and institutions, etc. • Document the delays that occurred • List of reasons, validated by project team	annual and progress reports, national reports • Interviews with UNIDO, NPC, National Focal Point, private sector, beneficiaries, consultants, and other project stakeholders
Assessment of risks to likelihood of sustainability of project outcomes		
Sustainability is understood as the likelihood of continued benefits after the GEF project ends. Assessment of sustainability of outcomes will be given special attention, but also technical, financial, and organizational sustainability will be reviewed. This assessment will explain how the risks to project outcomes will affect continuation of benefits after the GEF project ends. It will include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed: • ***Financial risks***. Are there any financial risks that may jeopardize sustainability of project outcomes? What is the likelihood of financial and economic resources not being available now that the GEF assistance has ended? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate the likelihood that, in the future, there will be adequate financial resources for sustaining project outcomes.) Was the project successful in leveraging the co-financing pledged at design? • ***Socio-political risks***. Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project's long-term objectives? • ***Institutional framework and governance risks***. Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency and required technical know-how in place? • ***Environmental risks***. Are there any environmental risks that may jeopardize sustainability of project outcomes? Are there any environmental factors, positive or negative, that can	UNIDO risk level indicators: Low, Moderate, High	• Review of relevant documents such as PIRs, progress reports, meeting documents, progress reports • Interviews with UNIDO, NPC, National Focal Points, other key national stakeholders, private sector, beneficiaries, and NGOs

Evaluation criteria	Evaluation indicators	Means of verification
influence the future flow of project benefits? Are there any project outputs or higher-level results that are likely to have adverse environmental impacts, which, in turn, might affect sustainability of project benefits? The evaluation will assess whether certain activities will pose a threat to the sustainability of the project outcomes.		
Assessment of M&E systems		
• ***M&E design***. Did the project have an M&E plan to monitor results and track progress towards achieving project objectives? The evaluation will assess whether the project met the minimum requirements for the application of the project M&E plan. • ***M&E plan implementation***. The evaluation should verify that an M&E system was in place and facilitated timely tracking of progress towards project objectives by collecting information on chosen indicators continually throughout the project implementation period; annual project reports were complete and accurate, with well-justified ratings; the information provided by the M&E system was used during the project to improve performance and to adapt to changing needs; and the project had an M&E system in place with proper training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure. Was monitoring and self-evaluation carried out effectively at regional and national levels, based on indicators for outputs, outcomes, and impacts? Are there any annual work plans? Were the steering or advisory mechanisms put in place at national and regional levels? Did reporting and performance reviews take place regularly? • ***Budgeting and funding for M&E activities***. In addition to incorporating information on funding for M&E while assessing M&E design, the evaluators will determine whether M&E was sufficiently budgeted for at the project planning stage and whether M&E was adequately funded and in a timely manner during implementation.	• Availability of logframe, workplans, roles of overseeing bodies, budgeted M&E plan • Level of implementation of M&E system (execution of activities); changes in implementation approach to adapt to changing situations; compliance of the countries in the submission of relevant reports in a timely manner • Compliance with reporting requirements as mentioned in TORs and/or project document	• Project document and annexes • PIRs, meeting reports, progress and annual reports; financial, audit, and other relevant reports • Interviews with UNIDO; NPC; PSC members; and other relevant stakeholders, partners, and beneficiaries
Monitoring of long-term changes		
The M&E of long-term changes is often incorporated in GEF-supported projects as a separate component and may include determination of environmental baselines; specification of indicators; and provisioning of equipment and capacity building for data gathering, analysis, and use. This section of the evaluation report will describe project actions and accomplishments towards establishing a long-term monitoring system. The evaluation will address the following questions: a. Did the project contribute to the establishment of a long-term monitoring system? If it did not, should the project have included such a component? b. What were the accomplishments and shortcomings in establishment of this system? c. Is the system sustainable — that is, is it embedded in a proper institutional structure and does it have financing? How likely is it that this system will continue operating upon project completion?	• Evidence of initial efforts to establish a long-term monitoring system	• Project reports, M&E reports • Interviews with UNIDO, RC, NPCs, National Focal Points, and other relevant stakeholders

Evaluation criteria	Evaluation indicators	Means of verification
d. Is the information generated by this system being used as originally intended?		
Project coordination and management		
The extent to which: • The regional and national management and overall coordination mechanisms have been efficient and effective. Did each partner have assigned roles and responsibilities from the beginning? Did each partner fulfill its role and responsibilities (e.g., providing strategic support, monitoring and reviewing performance, allocating funds, providing technical support, following up agreed/corrective actions)? • The UNIDO HQ-based management, coordination, monitoring, quality control, and technical inputs have been efficient, timely, and effective (e.g., problems identified timely and accurately; quality support provided timely and effectively; right staffing levels, continuity, skill mix, and frequency of field visits)?	• Level and quality of project coordination and management at the national level	• PIRs, meeting reports, and project coordination and management reports • Interviews with UNIDO, NPC, National Focal Point, and other relevant stakeholders
Gender mainstreaming		
The evaluation will consider, but need not be limited to, the following issues that may have affected gender mainstreaming in the project: • Did the project design adequately consider the gender dimensions in its interventions? If so, how? • Was a gender analysis included in a baseline study or needs assessment (if any)? • How gender-balanced was the composition of the project management team at national level, the Project Steering Committee, experts and consultants, and the beneficiaries? • 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)? • Are women/gender-focused groups, associations or gender units in partner organizations consulted/included in the project? • To what extent were socio-economic benefits delivered by the project at the regional, national, and local levels, including consideration of gender dimensions?	Incorporation of gender-responsive approaches and indicators, such as: • Women's participation • Gender balance • Integration of gender dimensions in project delivery • Equality, benefits, and results	• Project reports • Interviews with UNIDO, NPC, National Focal Point, key national counterparts, NGOs, Women's Associations involved, and other beneficiaries

9.5. Annex 5: Evaluation questionnaires

Terminal evaluation of the project: ***Increased energy access for productive use through small hydropower development in rural areas*** **- GEF PROJECT ID: 5317**

Pays : Madagascar

Information (nom et email) : Heng LIU, H.LIU@unido.org

Nom de votre établissement : UNIDO
Votre position dans l'établissement : UNIDO Project Manager (PM)
Veuillez renvoyer le questionnaire rempli à: **robert@uom.ac.mu**

Questions	Answers
1. (i) Who developed the proposal? (ii) Was it a request from the country? (iii) How relevant is the project to UNIDO's mandate?	
2. (i) Were you involved in the development of the project (PIF and PPG)? (ii) If yes, were the key national stakeholders and partners of the energy sector identified and contacted during that phase?	
3. (i) When did you join UNIDO? In which Division of UNIDO are you posted? (ii) Were you PM of the project since the beginning? If no, from whom did you take over, and when? (iii) How many projects are you managing currently? (iv) Are you being assisted at UNIDO HQ level for the management of this project?	
4. (i) At UNIDO level, who is responsible to develop the TORs, the contracts, and other documents to recruit and sub-contract consultants or for procurement? (ii) Did UNIDO do all the procurement of equipment/service? What is the procedure? (iii) Were other modalities used for procurement (of goods, equipment, etc.) in the project? (iv) How long did it generally take for procurement or sub-contracting for the project? Any challenges for procurement or sub-contracting? If yes, what were the challenges? (v) Modality for disbursement of funds or payments? What approval are required and from whom? (vi) Were disbursements / payments done on a timely manner?	
5. (i) Was the UNIDO Field Office involved in project implementation? (ii) If yes, describe its involvement and support provided to the project.	
6. (i) Did UNIDO directly subcontract the international as well as national consultants? (ii) How were these consultants identified? (iii)Procedure for their recruitment?	
7. Feedback on the consultants: (i) Did they perform as expected? (ii) Did they deliver on time? If no, what caused the delays? (iii) Did they cooperate fully with the Project?	
8. National Project Coordinator (NPC) (i) What was the procedure to recruit the NPC?	

(ii) When was the NPC recruited? (iii) Was he directly contracted by UNIDO? Can we get a copy of his contract? (iv) What were the role and responsibilities of the NPC? (v) Are you satisfied with his performance? (vi) Type and frequency of communication you had with the NPC?	
9. Cooperation with other initiatives (i) Did the project benefit from cooperation with other initiatives? (ii) If yes, how were contacts established with these initiatives/ (iii) Can you briefly describe this/these cooperation(s) and with whom? (iv) Were there signed agreements for these cooperations? (v) Are you satisfied with these cooperations?	
10. Project Steering Committee, monitoring, challenges, delays, extension and PIRs (i) Did you attend the Project Inception Workshop? (ii) Did you attend the PSC meetings or was UNIDO represented by the UNIDO FO? (iii) If you did not personally attend the PSC meetings, were you regularly informed about the outcomes and recommendations of the PSC meetings? (iv) Has Project Management (and PSC) used the Project Results Framework and all the proposed indicators therein as a basis to monitor project progress and to track results? (v) Has the gender dimension specifically been considered during implementation and monitoring of the project? (vi) What major challenges has the project faced? (vii) How have these challenges been overcome? (viii) What was the impact of COVID19 on project implementation? (ix) How many extensions were granted to the project? How many months of extension in total? (x) When was the last extension granted and for how long? (xi) Who was responsible to draft the PIRs? (xii) Have the PIR reports been timely submitted?	
11. Execution at national level, involvement of national stakeholders, ownership, performance of National Project Coordinators (NPCs) and reporting (i) What was the modality of execution at national level? (ii) Which institution is the National Executing Agency (NEA)?	

(iii) Was there a signed agreement (contract) between UNIDO and the NEA? (iv) If yes, for what amount? (v) Can we have a copy of the agreement? (vi) What are the modalities for transfer of funds from UNIDO HQ to the NEA? Were the funds timely transferred? (vii) Was a Project Management Team (PMT) established? (viii) Who was the team leader of the PMT? (ix) Did the PMT perform as expected? Your feedback on the PMT. (x) What reports were expected from the PMT? Were they being timely submitted? (xi) Are you aware if there were good involved of the key stakeholders (ministries, institutions, academia, NGOs, etc.)? (xii) Do you feel there was high ownership of the project in the country? Can you please justify your answer?	
12. Recommendations of the Midterm Evaluation (MTE), achievements of goals, and sustainability of project benefits and results (i) The MTE made 13 recommendations; have they been implemented? (ii) Do you think that all the goals and objectives of the project will be achieved at project closure? (iii) What is the likelihood of the long-term sustainability of the project benefits and results after project closure?	
13. Your general feedback on the project.	

Questionnaire – Coordonnateur National du Project

Pays : Madagascar
Information (nom et email) : Louis Tavernier, L.TAVERNIER@unido.org
Nom de votre établissement : UNIDO
Votre position dans l'établissement : Coordonnateur National du Project
Veuillez renvoyer le questionnaire rempli à: robert@uom.ac.mu

Questions	Réponses et commentaires
1. Quelle a été la procédure de sélection et d'embauche du Coordinateur National du Projet (CNP), et qui vous a embauché directement ? Qui a pris la décision finale ? Combien de candidats ont postulé ? 2. La date de votre embauche comme CNP ? 3. Avant d'être CNP, quelle était votre situation professionnelle ?	
4. Quelles étaient/sont vos responsabilités en tant que NPC ? 5. Est-ce qu'une unité de gestion du projet (UGP) a été établie ? Quand ? 6. Constitution de l'UGP ? 7. Est-ce que les activités initialement prévues ont connu des évolutions, des ajustements, de nouvelles orientations… ? Quelles ont été les raisons ? Quels étaient les principaux défis/difficultés rencontrés dans la mise en œuvre du projet ? 8. Dans quelle mesure ces défis/difficultés ont pu être surmontés ? 9. Impact du Covid ?	
10. Fréquences et moyens de communication avec le UNIDO PM ? 11. Conseils et soutien fournis par le UNIDO PM ? 12. Rôle, type d'engagement et appui de UNIDO Field Office (FO) dans la mise en œuvre du projet ? 13. Quels étaient les rapports que vous (CNP) deviez soumettre ? Et à qui ? 14. Ces rapports ont-ils été soumis à temps ?	
15. Le nombre de consultants recrutés pour le projet ? 16. Engagés pour quelles composantes du projet ? 17. Êtes-vous satisfait de leur performance ? 18. Ont-ils soumis les rapports à temps ou avec du retard ? En cas de retard, les raisons ?	

19. Quelles étaient les attentes du projet par rapport à ces parties prenantes : a. MEH, ADER, b. Autorités régionales c. MEDD, BNCC/RED+ d. Les opérateurs : HIER, MASHAYA, CASIELEC, BETC, JIRAMA… e. ECOLE POLYTECHNIQUE 20. Remplissaient-elles leurs rôles pleinement durant la mise en œuvre ? 21. Avez-vous constaté un bon engagement de leurs parts ? Comment était-ce la collaboration entre elles ? Dans quelle mesure des difficultés ont été vécues durant la mise en œuvre du projet ? Quels soutiens et appuis ces parties prenantes (Ministère de l'énergie, ADER, BNCC/RED+ etc.) ont fournis au projet ? 22. Est-ce que des ONGs ont participé au projet ? Si oui, lesquels et leurs rôles ?	
Veuillez élaborer brièvement sur l'engagement, le rôle et la contribution de ces entités partenaires ci-dessous : 23. **GIZ** (projet PERER) : Rôle : Engagement : Contribution : **24. KfW :** Rôle : Engagement : Contribution : 25. **World Bank** (Projet PAGOSE): Rôle : Engagement : Contribution : 26. **EU** (PHEDER and Rhyviere) : Rôle : Engagement : Contribution : 27. Autres?	
28. Quand est-ce que le comité de pilotage (Copil) a-t-il été établi ? 29. Composition du Copil ? 30. Rôles et responsabilités du Copil ? 31. Bon fonctionnement du Copil et un suivi adéquat la mise en œuvre du projet ? 32. Est-ce que toutes les recommandations du Mid-Term Evaluation) ont-elles été mises en œuvre ?	
33. Êtes-vous satisfait du soutien et des conseils fournis par UNIDO PM, COPIL, et consultants ?	

34. Veuillez évaluer les conseils et le soutien fournis par l'ONUDI, le COPIL, et consultants séparément (de 1 à 6). **1 : Highly Unsatisfactory ; 2 : Unsatisfactory ; 3 : Moderately Unsatisfactory ; 4 : Moderately Satisfactory; 5 : Satisfactory ; et, 6 : Highly Satisfactory** 35. 19. Selon vous, quels autres types d'assistance auraient été utiles ?	UNIDO PM : COPIL : Consultants :
36. Le projet est-il en mesure de réaliser tous les résultats/produits prévus ? Le projet a-t-il eu des retards ? Sur quelles composantes ? Les raisons des retards ? 37. Que pouvez-vous dire sur l'appropriation des résultats du projet par les parties prenantes concernant : a. Outil MRV b. Formation en hydroélectricité c. Document NAMA d. Note sur le débit réservé e. L'atlas f. Le guide des investissements g. La technologie de fabrication des poteaux h. Autres 38. Le projet a-t-il atteint ses objectifs principaux ainsi que les indicateurs clés ? sur quelles composantes ? Veuillez élaborer / commenter. 39. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter. 40. Y a-t-il déjà des signes visibles de l'impact du projet, comme un changement de comportement, mode opératoire, degré d'engagement, autonomie au niveau : a. des autorités b. des opérateurs accompagnés c. des jeunes formés d. des partenaires PTF Veuillez donner des exemples concrets. 41. Commentez sur la durabilité des résultats et bénéfices du projet à long terme 42. Quelles sont les différentes leçons tirées de ce projet durant sa mise en œuvre ainsi que les bonnes pratiques ? a. D'une manière générale dans la mobilisation des parties prenantes b. Durant le processus de l'électrification rurale	

c. Dans la promotion de la formation en hydroélectricité d. Dans l'accompagnement et l'appropriation des outils par les parties malgaches e. Autres sujets selon vous	
43. Comment le projet a-t-il intégré la dimension de genre durant la mise en œuvre du projet ?	
44. Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ?	
45. Selon vous quelles ont été les véritables contributions de ce projet dans la promotion des petites centrales hydro électriques à Madagascar ?	

Questionnaire - Représentante ONUDI Madagascar

Pays : Madagascar

Information (nom et courriel) : Volatiana Rakotondrazafy, V.rakotondrazafy@unido.org

Nom de votre établissement : UNIDO

Votre fonction dans l'établissement : Représentante UNIDO à Madagascar

Veuillez renvoyer le questionnaire rempli à : **robert@uom.ac.mu**

Questions	Réponses et commentaires
1. (i) Structure et effectifs de ONUDI Madagascar ? (ii) Mission de ONUDI Madagascar ? (iii) Votre fonction et vos responsabilités au sein de ONUDI Madagascar ?	
2. (i) Les bureaux ONUDI Pays sont-ils généralement informés lorsqu'un projet est mis en œuvre dans le pays ? ii) Quel type de soutien/appui s'attend-t-on des bureaux ONUDI Pays lors de la mise en œuvre de projets ? (iii) Pour la mise en œuvre du Projet SHP Madagascar, quel a été le soutien apporté par ONUDI Madagascar ? (iv) Le bureau a-t-il participé à certaines activités du projet ? Lesquelles ?	
3. (i) Etiez-vous suffisamment engagée dans le projet pour juger de l'appropriation du projet par les principaux acteurs/parties prenantes du projet ? Si oui, diriez-vous : une appropriation faible, assez bonne, bonne ou très bonne ? (ii) Etes-vous en mesure de décrire la collaboration/coopération entre les principaux acteurs/parties prenantes du projet ? (iii) De votre point de vue, quels étaient les défis majeurs confrontés par le projet durant la mise en œuvre ?	
4. Votre feedback sur le projet	

Questionnaire – Contrepartie nationale
Directeur Général de l'Energie et des Hydrocarbures – Ministère de l'Energie et des Hydrocarbures
Président du Comité National du Pilotage du projet

Pays : Madagascar
Information (nom et courriel) : Sambatra Ramiandrisoa, sambatra.ramiandrasoa@gmail.com
Nom de votre établissement : Ministère de l'Energie et des Hydrocarbures
Votre fonction dans l'établissement : Directeur Général
Veuillez renvoyer le questionnaire rempli à: **robert@uom.ac.mu**

Questions	Réponses et commentaires
1. Quelle est la pertinence du projet de l'ONUDI sur par rapport aux priorités de Madagascar dans le domaine énergétique ?	
2. Quel soutien / appui votre gouvernement, en particulier votre Ministère, a-t-il apporté à la mise en œuvre du projet de l'ONUDI ?	
3. Êtes-vous satisfait du soutien et des conseils fournis par l'ONUDI et les experts/consultants nationaux et internationaux ? 4. Veuillez donner votre avis sur l'assistance et le soutien fournis par l'ONUDI et les experts/consultants nationaux et internationaux. Veuillez élaborer. 5. Selon vous, quels autres types d'aide ou soutiens auraient été utiles ? 6. Veuillez donner votre avis sur le Coordonnateur National du Project (CNP). Etes-vous satisfait de son travail ? 7. Votre avis sur l'unité de gestion du projet (UGP) ?	
8. Quels étaient le rôle et les responsabilités du Comité de Pilotage (Copil)? 9. Est-ce que le Copil a-t-il bien rempli son rôle et pris ses responsabilités durant la mise en œuvre du projet ? 10. Avez-vous observé un engagement actif des différentes parties prenantes dans le Copil ? Et dans les autres activités telles que les ateliers, et réunions techniques ou autres ?	
11. Veuillez évaluer les conseils et le soutien fournis par l'ONUDI et les Experts/ consultants nationaux et internationaux ainsi que la performance du CNP et de l'UGP (**de 1 à 6**). **1 : Très insatisfaisant ; 2 :**	**ONUDI** : **Consultants nationaux et internationaux** :

Insatisfaisant ; 3 : Modérément insatisfaisant ; 4 : Modérément satisfaisant ; 5 : Satisfaisant ; et, 6 : Très satisfaisant	**CNP** : **UGP** :
12. Est-ce que les résultats du projet (par exemple, le cadre légal et réglementation pour le développement des énergies renouvelables) ont-ils été déjà adoptés / intégrés / appliqués au niveau national ?	
13. Concernant l'électricité qui sera produite par les SHP, quels sont les modalités (ex. connexion au réseau national/local/rural, couts, etc.) pour la distribution aux consommateurs ?	
14. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
15. Est-ce que les capacités qui ont été renforcées dans le cadre du projet sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
16. Dans quelle mesure la poursuite des résultats du projet et son impact éventuel (par exemple production durable de l'énergie propre à partir des SHPs) dépendent-ils de la disponibilité des ressources financières ? Ces ressources financières peuvent-elles être mobilisées au niveau national ?	
17. Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ? 18. Votre avis sur le projet	

Questionnaire – Contrepartie nationale
Coordonnateur du Bureau National de Coordination des Changements Climatiques BNCC/REDD+
Co Président du Comité National de Pilotage du Projet

Pays : Madagascar

Information (nom et courriel) : Lovakanto Ravelomanana, lovakanto@gmxl.com

Nom de votre établissement : Bureau National de Coordination de la lutte contre le Changement Climatique BNCC/REDD+

Votre fonction dans l'établissement : Coordinateur National

Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand votre institution a-t-elle été créée ? (ii) Quel est la mission de votre institution ?	
2: (i) A quel titre BNCCC/REDD+ est impliqué pour participer au projet? (ii) A quel stade et année, BNCCC/REDD+ a commencé à être impliqué dans la mise en œuvre du projet ? (iii) Pourriez-vous décrire la façon dont BNCCC/RED+ a perçu les différentes évolutions du projet jusqu'à ce jour ?	
3: (i) Sur quels sujets/activités du projet votre institution a été amenée à mettre en œuvre ? (ii) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (iii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iv) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (v) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (vi) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie ?	
4: (i) Donnez votre avis sur le rôle joue par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) ?	
5: (i) Veuillez citer les résultats obtenus dans le cadre de la mise en œuvre du projet tel que vous l'avez constaté? (ii) Dans quelle mesures les résultats attendus ont été atteints ? Veuillez décrire	

Questions	Réponses et commentaires
6: (i) Des prestations par des consultants ont-ils été demandés ? (ii) Qui étaient les consultants ? (iii) Ils travaillaient sur quelle prestation ? (iv) Les résultats étaient-ils pertinents, utiles et efficaces et ont aidé à faire avancer le projet ?	
7: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **MEH :** **CNP**: **Consultants**:
8: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Dans quelle mesure les résultats du projet contribuent à la mission de BNCC/REDD+ ? (iii) Quels sont les résultats du projet qui permettent d'améliorer, renforcer les connaissances sur les projets de centrales hydroélectrique ? (iv) Quels sont les résultats du projet qui permettent d'améliorer, renforcer la procédure, la collaboration entre les différentes parties prenantes impliqués pour promouvoir des projets contribuant au développement des énergies renouvelables et à la réduction du GES ? (v) Savez-vous si les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (vi) Est-ce qu'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet au niveau des parties prenantes : PTF, Opérateurs, Autorités (MEH, ADER, MEDD), Autorités locales, Consultants ? (v) Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
9. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
10: Est-ce que résultats obtenus dans le cadre du projet sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
11: (i) Dans quelle mesure la poursuite des résultats du projet et son impact éventuel dépendent-ils de la disponibilité des ressources financières ? (ii) Ces ressources financières peuvent-elles être mobilisées au niveau national ?	

Questions	Réponses et commentaires
12: Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ?	
13: Comment vous appréciez la contribution de ce projet pour promouvoir les énergies renouvelables et les projets visant à réduire les émissions de GES??	
14: Quels défis ou obstacles subsistent pour développer les projets de ce genre dans votre pays après ce projet?	

Questionnaire – Contrepartie nationale
Secrétaire Exécutif Agence de Développement de l'Electrification Rurale - ADER

Pays : Madagascar
Information (nom et courriel) : Mamisoa Rakotoarimanana, SE@ader.mg
Nom de votre établissement : Agence de Développement de l'Electrification Rurale
Votre fonction dans l'établissement : Secrétaire Exécutif
Veuillez renvoyer le questionnaire rempli à : **robert@uom.ac.mu**

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand votre institution a-t-elle été créée ? (ii) Quel est la mission de votre institution ? (iii) Combien de personnes ADER emploie-t-elle ?	
2: (i) A quel titre ADER est impliqué pour participer au projet? (ii) A quel stade et année, ADER a commencé à être impliqué dans la mise en œuvre du projet ? (iii) Pourriez-vous décrire la façon dont ADER a perçu les différentes évolutions du projet jusqu'à ce jour ?	
3: *Veuillez développer par composante les questions suivantes* (i) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (ii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iii) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (iv) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (v) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie ?	Composante 1 Composante 2 Composante 3
4 : (i) Veuillez citer les résultats obtenus dans le cadre de la mise en œuvre du projet tel que vous l'avez constaté ? (ii) Dans quelle mesures les résultats attendus ont été atteints ? Veuillez décrire	
5: (i) Donnez votre avis sur le rôle joue par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) ?	

Questions	Réponses et commentaires
6 : (i) Avez-vous constaté un engagement fort de la part de ? • MEH • ORE (ii) Avez-vous vu un engagement fort de la part des PTF. ? • GIZ • KFW	
7 : Avez-vous vu un engagement fort de la part des Opérateurs ? Où était leur Force et leur faiblesse • HIER • MASHAYA • SIER GC • JIRAMA • BETC • CASIELEC	
8 : Les services demandés aux consultants ont-ils été pertinents et efficaces et ont aidé à faire avancer le projet ? • Sur l'étude technique • Sur l'étude de la demande • Sur l'étude sociale et environnementale • Sur la réalisation de différents outils : Atlas, Guide • Sur la levée de fonds	
9: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, etc... (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **CNP**: **MEH :** **ORE :** **Les opérateurs** : **Consultants**: **Les PTF impliqués : GIZ, KFW :**
10: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Dans quelle mesure les résultats du projet contribuent dans la réalisation de la mission de l'ADER dans l'électrification rurale ? (iii) Quels sont les résultats du projet qui permettent d'améliorer, renforcer les connaissances pour développer les projets de centrales hydroélectrique ?	

Questions	Réponses et commentaires
(iv) Quels sont les résultats du projet qui permettent d'améliorer, renforcer la procédure, la collaboration entre les différentes parties prenantes impliqués dans les projets hydroélectriques ? (v) Savez-vous si les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (vi) Savez-vous s'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet au niveau des parties prenantes : PTF, Opérateurs, Autorités (MEH, ORE, MEDD), Autorités locales, Consultants ? (v) Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
11. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
12: Est-ce que les capacités qui ont été renforcées dans le cadre du projet sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
13 : Dans quelle mesure la poursuite des résultats du projet et son impact éventuel (par exemple production durable de l'énergie propre à partir des SHPs) dépendent-ils de la disponibilité des ressources financières ? Ces ressources financières peuvent-elles être mobilisées au niveau national ?	
14 : Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ?	
15 : Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité ?	
16: Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays après ce projet?	

Questionnaire – Contrepartie nationale
Secrétaire Exécutif Office de Régulation de l'Electricité - ORE

Pays : Madagascar
Information (nom et courriel) : Rivo Rasolojaona, ORE@ore.mg
Nom de votre établissement : Office de Régulation de l'Electricité
Votre fonction dans l'établissement : Secrétaire Exécutif
Veuillez renvoyer le questionnaire rempli à : **robert@uom.ac.mu**

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand votre institution a-t-elle été créée ? (ii) Quel est la mission de votre institution ? (iii) Combien de personnes ORE emploie-t-elle ?	
2: (i) A quel titre ORE est impliqué pour participer au projet? (ii) A quel stade et année, ORE a commencé à être impliqué dans la mise en œuvre du projet ? (iii) Pourriez-vous décrire la façon dont ORE a perçu les différentes évolutions du projet jusqu'à ce jour ?	
3: *Veuillez développer par composante les questions suivantes* (i) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (ii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iii) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (iv) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (v) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie?	Composante 1 Composante 2 Composante 3
4 : (i) Veuillez citer les résultats obtenus dans le cadre de la mise en œuvre du projet tel que vous l'avez constaté ? (ii) Dans quelle mesures les résultats attendus ont été atteints ? Veuillez décrire	
5: (i) Donnez votre avis sur le rôle joue par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) ?	

Questions	Réponses et commentaires
6 : (i) Avez-vous vu un engagement fort de la part des : • MEH • ADER (ii) Avez-vous vu un engagement fort de la part des PTF. ? • GIZ • KFW	
7 : Avez-vous vu un engagement fort de la part des Opérateurs ? Où était leur Force et leur faiblesse • HIER • MASHAYA • SIER GC • JIRAMA • CASIELEC	
8 : Les services demandés aux consultants ont-ils été pertinents et efficaces et ont aidé à faire avancer le projet ? • Sur l'étude technique • Sur l'étude de la demande • Sur l'étude sociale et environnementale • Sur la réalisation de différents outils : Atlas, Guide • Sur la levée de fonds	
9: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **CNP**: **MEH :** **ADER :** **Les opérateurs** : **Consultants**: **Les PTF impliqués : GIZ, KFW**
10: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Dans quelle mesure les résultats du projet contribuent dans la réalisation de la mission de l'ORE dans l'électrification rurale ? (iii) Quels sont les résultats du projet qui permettent d'améliorer, renforcer les connaissances pour développer les projets de centrales hydroélectrique ? (iv) Quels sont les résultats du projet qui permettent d'améliorer, renforcer la procédure, la collaboration entre les différentes parties	

Questions	Réponses et commentaires
prenantes impliqués dans les projets hydroélectriques ? (v) Savez-vous si les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (vi) Savez-vous s'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet au niveau des parties prenantes : PTF, Opérateurs, Autorités (MEH, ADER, MEDD), Autorités locales, Consultants ? (v) Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
11. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	Notamment sur la composante 2 :
12: Est-ce que les capacités qui ont été renforcées dans le cadre du projet sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
13: Dans quelle mesure la poursuite des résultats du projet et son impact éventuel (par exemple production durable de l'énergie propre à partir des SHPs) dépendent-ils de la disponibilité des ressources financières ? Ces ressources financières peuvent-elles être mobilisées au niveau national ?	
14: Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ?	
15: Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité ?	
16: Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays après ce projet?	

Questionnaire – Partenaire Technique et Financier
Centre Ecologique Albert Schweitzer (CEAS)

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand CEAS est implanté à Madagascar ? (ii) Quel est le secteur d'activités de votre institution ? (iii) Combien de personnes votre entreprise emploie-t-elle ?	
2: Comment et quand votre institution a été contactée pour participer au projet?	
3: (i) Sur quels sujets/activités votre institution a été impliqué dans ce projet ? (ii) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (iii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iv) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (v) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (vi) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie ?	
5: (i) Donnez votre avis sur le rôle joue par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP), les autres parties prenantes/consultants, consultants et autres ? (iii) Avez-vous vu un engagement fort de la part des autres partie prenantes / partenaires etc. ?	
6: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **CNP**: **Consultants**: **SIER GC :**

Questions	Réponses et commentaires
7: (i)Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays ?	
8: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Quelle a été la contribution de votre institution au projet ? (iii) Dans quelle mesure les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (iii) Savez-vous s'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet ?	
9: Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
10. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
11: Est-ce que les capacités et les résultats obtenus sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
12 : Dans quelle mesure la poursuite des résultats du projet et son impact éventuel (par exemple production durable de l'énergie propre à partir des SHPs) dépendent-ils de la disponibilité des ressources financières ? Ces ressources financières peuvent-elles être mobilisées au niveau national ?	
13 : Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ? 14 : Votre avis sur le projet : Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité 15. Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays après ce projet ?	

Questionnaire – Partenaire Technique et Financier
Coopération Allemande : GIZ-PERER III et KFW

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand votre institution est implantée à Madagascar ? (ii) Quel est le secteur d'activités de votre institution ? (iii) Combien de personnes votre entreprise emploie-t-elle ?	
2: Comment et quand votre institution a été contactée pour participer au projet?	
3: (i) Sur quels sujets/activités votre institution a été impliqué dans ce projet ? (ii) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (iii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iv) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (v) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (vi) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie ?	
5: (i) Donnez votre avis sur le rôle joue par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP), les autres parties prenantes/consultants, consultants et autres ? (iii) Avez-vous vu un engagement fort de la part des autres partie prenantes / partenaires etc. ?	

Questions	Réponses et commentaires
6: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **CNP**: **Consultants**: **HIER:** **MASHAYA :**
7: (i)Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays ?	
8: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Quelle a été la contribution de votre institution au projet ? (iii) Dans quelle mesure les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (iii) Savez-vous s'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet ?	
9: Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
10. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
11: Est-ce que les capacités et les résultats obtenus sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
12 : Dans quelle mesure la poursuite des résultats du projet et son impact éventuel (par exemple production durable de l'énergie propre à partir des SHPs) dépendent-ils de la disponibilité des ressources financières ? Ces ressources financières peuvent-elles être mobilisées au niveau national ?	
13 : Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager avec moi ? 14 : Votre avis sur le projet : Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité 15. Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays après ce projet ?	

Questionnaire – Opérateurs en Electrification
HIER / MASHAYA / SIER-GC / CASIELEC

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre entreprise: (i) Quand votre entreprise a-t-elle été créée ? (ii) Quel est le secteur d'activités de votre entreprise ? (iii) Combien de personnes votre entreprise emploie-t-elle ?	
2: (i) Comment et quand (année) votre entreprise a été sélectionnée pour participer au projet? (ii) Comment vous apprécierez le processus de sélection a été en termes de clarté, rapidité ? Quels ont été la difficulté durant ce processus ? (iii) Veuillez décrire le projet de centrale vous concernant dans ce projet ?	
3: (i) Quels étaient le rôle et les responsabilités de votre entreprise dans le projet ? (ii) Qu'est-ce que votre entreprise deviez livrer dans le cadre du projet ? (iii) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (iv) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (v) Le COVID-19 a-t-il eu un impact sur la réalisation des activités et des produits ? Quels ajustements ont été faits en raison de la pandémie ? (vi) En dépit de ces défis, COVID et autres, votre entreprise a-t-elle été en mesure de mener à bien toutes les activités et de livrer tous les produits ? (vii) Avec tous ces défis, est-ce-que le projet est-il toujours économiquement viable ? (viii) Selon que sera la durée pour un retour sur investissement ? (ix) Y-t-il eu ou il y aurait-il création d'emplois dans le cadre de votre engagement dans le projet ? Si oui, combien ? Nombre de femmes et d'hommes ?	
4: Quels ont été les appuis que votre entreprise a reçu par : • ONUDI	

Questions	Réponses et commentaires
• ADER • ORE • GIZ • KFW (ii) Selon vous, quels autres types d'aide auraient été utiles ? (iii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) et les autres parties prenantes/consultants ?	
5: Quels ont été les appuis que votre entreprise a reçu par les consultants ? Veuillez les citer et leurs interventions respectives ? Les résultats ont-ils été pertinents pour faire avancer le projet	
6: Quels ont été les appuis que votre entreprise a reçu des autres parties prenantes (Autorités locales, ONE,...)? Veuillez les citer et leurs interventions respectives ? Dans quelles mesures la collaboration a permis de faire avancer le projet ?	
7: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **CNP**: **Consultants**: **ADER**: **ORE :**
8: (i) Savez-vous si les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (ii) Savez-vous s'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet sur les sites du projet ? au niveau de • MEH/ADER/ORE • PTF • JIRAMA	
9: (i) Quel est la stratégie de votre entreprise pour maintenir les gains ou la durabilité du projet (petit central hydroélectrique) après la clôture du projet ? (ii) Qu'est-ce qui peut entraver la mise en œuvre de cette stratégie ? (iii) Comment comptez-vous remédier à ces obstacles ?	

Questions	Réponses et commentaires
10. (i) Savez-vous si le projet a impliqué des femmes ? (ii) Comment le projet a-t-il intégré les dimensions de genre dans l'exécution du projet ?	
11: (i) Votre feedback sur le projet : dans quelle mesure ce projet a contribué à la promotion des projets de petites hydroélectricité ? (ii) Quelles sont les leçons apprises et bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
12: Quels défis ou obstacles subsistent pour l'implantation de petites centrales hydroélectriques dans votre pays ?	

Questionnaire – Partenaire publique
Ecole Polytechnique Antananarivo - ESPA

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand votre institution a-t-elle été créée ? (ii) Quel est la mission de votre institution ?	
2: (i) A quel titre ESPA est impliqué pour participer au projet? (ii) A quel stade et année, ESPA a commencé à être impliqué dans la mise en œuvre du projet ? (iii) Pourriez-vous décrire la façon dont ESPA a perçu les différentes évolutions du projet jusqu'à ce jour ?	
3: (i) Sur quels sujets/activités du projet votre institution a été amenée à mettre en œuvre ? (ii) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (iii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iv) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (v) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (vi) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie ?	
4: (i) Donnez votre avis sur le rôle joue par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) ?	
5: (i) Veuillez citer les résultats obtenus dans le cadre de la mise en œuvre du projet tel que vous l'avez constaté? (ii) Dans quelle mesures les résultats attendus ont été atteints ? Veuillez décrire	

Questions	Réponses et commentaires
6: (i) Des prestations par des consultants ont-ils été demandés ? (ii) Qui étaient les consultants ? (iii) Ils travaillaient sur quelle prestation ? (iv) Les résultats étaient-ils pertinents, utiles et efficaces et ont aidé à faire avancer le projet ?	
7: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI/CNP** : **MEH :** **MESUPRES :** **Consultants** :
8: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Dans quelle mesure les résultats du projet contribuent à la mission de l'ESPA ? (iii) Quels sont les résultats du projet qui permettent d'améliorer, renforcer les connaissances sur les projets de centrales hydroélectrique ? (iv) Quels sont les résultats du projet qui permettent d'améliorer, renforcer la procédure, la collaboration entre les différentes parties prenantes impliqués dans les projets hydroélectriques ? (v) Savez-vous si les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (vi) Est-ce qu'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet au niveau des parties prenantes : PTF, Opérateurs, Autorités, Consultants ? (v) Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
9. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
10: Est-ce que résultats obtenus dans le cadre du projet sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
11: (i) Dans quelle mesure la poursuite des résultats du projet et son impact éventuel dépendent-ils de la disponibilité des ressources financières ?	

Questions	Réponses et commentaires
(ii) Ces ressources financières peuvent-elles être mobilisées au niveau national ?	
12: Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager?	
13: Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité ?	
14: Quels défis ou obstacles subsistent et restent à adresser pour la promotion des petites centrales hydroélectriques dans votre pays après ce projet?	

Questionnaire – Partenaire publique
Direction Générale de la Météorologie - DGM

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre institution: (i) Quand votre institution a-t-elle été créée ? (ii) Quel est la mission de votre institution ?	
2: (i) A quel titre DGM est impliqué pour participer au projet? (ii) A quel stade et année, DGM a commencé à être impliqué dans la mise en œuvre du projet ? (iii) Pourriez-vous décrire la façon dont DGM a perçu les différentes évolutions du projet jusqu'à ce jour ?	
3: (i) Sur quels sujets/activités du projet votre institution a été amenée à mettre en œuvre ? (ii) Quels étaient le rôle et les responsabilités de votre institution dans le projet ? (iii) Est-ce que votre institution a pu jouer pleinement son rôle et pris tous ses responsabilités ? (iv) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (v) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (vi) Le COVID-19 a-t-il eu un impact sur la mise en œuvre du projet ? Quels ajustements ont été faits en raison de la pandémie ?	
4: (i) Donnez votre avis sur le rôle joué par l'ONUDI (son appui, soutien, conseil, gestion, etc.) au cours de la mise en œuvre. (ii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) ?	
5: (i) Veuillez citer les résultats obtenus dans le cadre de la mise en œuvre du projet tel que vous l'avez constaté? (ii) Dans quelle mesures les résultats attendus ont été atteints ? Veuillez décrire	
6: (i) Des prestations par des consultants ont-ils été demandés ? (ii) Qui étaient les consultants ? (iii) Ils travaillaient sur quelle prestation ?	

Questions	Réponses et commentaires
(iv) Les résultats étaient-ils pertinents, utiles et efficaces et ont aidé à faire avancer le projet ?	
7: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI/CNP** : **MEH :** **Consultants** :
8: (i) Qu'est-ce que votre institution et son personnel ont bénéficié du projet? (ii) Dans quelle mesure les résultats du projet contribuent à la mission de DGM ? (iii) Quels sont les résultats du projet qui permettent d'améliorer, renforcer les connaissances sur les projets de centrales hydroélectrique ? (iv) Quels sont les résultats du projet qui permettent d'améliorer, renforcer la procédure, la collaboration entre les différentes parties prenantes impliqués dans les projets hydroélectriques ? (v) Est-ce que les communautés locales ont bénéficié du projet ou ont été impliquées dans le projet ? Veuillez donner des exemples. (vi) Est-ce qu'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet au niveau des parties prenantes : PTF, Opérateurs, Autorités, Consultants ? (v) Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
9. Existe-t-il des facteurs sociaux ou politiques susceptibles d'influencer positivement ou négativement les résultats du projet ? Si oui, veuillez commenter.	
10: Est-ce que résultats obtenus dans le cadre du projet sont-elles suffisamment solides pour continuer à générer des avantages au-delà de la durée de vie du projet ?	
11: (i) Dans quelle mesure la poursuite des résultats du projet et son impact éventuel dépendent-ils de la disponibilité des ressources financières ? (ii) Ces ressources financières peuvent-elles être mobilisées au niveau national ?	

Questions	Réponses et commentaires
12: Avez-vous des commentaires / suggestions / problèmes pertinents relatifs au projet que vous aimeriez partager?	
13: Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité ?	
14: Quels défis ou obstacles subsistent et restent à adresser pour la promotion des petites centrales hydroélectriques dans votre pays après ce projet?	

Questionnaire – Partenaire privé
Entreprise BETC

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: A propos de votre entreprise: (i) Quand votre entreprise a-t-elle été créée ? (ii) Quel est le secteur d'activités de votre entreprise ? (iii) Combien de personnes votre entreprise emploie-t-elle ?	
2: (i) Comment et quand (année) votre entreprise a été sélectionnée pour participer au projet? (ii) Comment vous apprécierez le processus de sélection a été en termes de clarté, rapidité ? Quels ont été la difficulté durant ce processus ? (iii) Veuillez décrire le projet vous concernant ?	
3: (i) Quels étaient le rôle et les responsabilités de votre entreprise dans le projet ? (ii) Qu'est-ce que votre entreprise deviez livrer dans le cadre du projet ? (iii) Quels sont les principaux obstacles ou défis rencontrés pendant l'exécution des activités du projet ? (iv) Comment et dans quelle mesure ces défis et obstacles ont-ils été surmontés (v) Le COVID-19 a-t-il eu un impact sur la réalisation des activités et des produits ? Quels ajustements ont été faits en raison de la pandémie ? (vi) En dépit de ces défis, COVID et autres, votre entreprise a-t-elle été en mesure de mener à bien toutes les activités et de livrer tous les produits ? (vii) Avec tous ces défis, est-ce-que le projet est-il toujours économiquement viable ? (viii) Selon que sera la durée pour un retour sur investissement ? (ix) Y-t-il eu ou il y aurait-il création d'emplois dans le cadre de votre engagement dans le projet ? Si oui, combien ? Nombre de femmes et d'hommes ?	
4: Quels ont été les appuis que votre entreprise a reçu par : • ONUDI • ADER (ii) Selon vous, quels autres types d'aide auraient été utiles ?	

Questions	Réponses et commentaires
(iii) Comment s'est déroulée la collaboration avec le NPC, l'unité de gestion du projet (UGP) et les autres parties prenantes/consultants ?	
5: Quels ont été les appuis que votre entreprise a reçu par les consultants ? Veuillez les citer et leurs interventions respectives ? Les résultats ont-ils été pertinents pour faire avancer le projet	
6: Quels ont été les appuis que votre entreprise a reçu des autres parties prenantes (LNTPB)? Veuillez les citer et leurs interventions respectives ? Dans quelles mesures la collaboration a permis de faire avancer le projet ?	
7: Le cas échéant, veuillez évaluer individuellement les conseils et le soutien fournis par l'ONUDI, les consultants, le RPC, le NPC et l'UGP (de 1 à 6). **1 : Très insatisfaisant** ; **2 : Insatisfaisant** ; **3 : Modérément insatisfaisant** ; **4 : Modérément satisfaisant** ; **5 : Satisfaisant** ; et, **6 : Très satisfaisant**	**ONUDI**: **CNP**: **Consultants**: **LNTPB** **ADER**:
8: (i) (ii) Savez-vous s'il existe des signes tangibles ou visibles de changement (impact) à la suite des interventions du projet sur les sites du projet ?	
9: (i) Quel est la stratégie de votre entreprise pour maintenir les gains ou la durabilité du projet (petit central hydroélectrique) après la clôture du projet ? (ii) Qu'est-ce qui peut entraver la mise en œuvre de cette stratégie ? (iii) Comment comptez-vous remédier à ces obstacles ?	
10 : (i) Savez-vous si le projet a impliqué des femmes ? (ii) Comment le projet a-t-il intégré les dimensions de genre dans l'exécution du projet ?	
11: Votre feedback sur le projet. (i) Dans quelle mesure ce projet a vraiment contribué à la promotion de l'électrification ? (ii) Quelles sont les leçons apprises et bonnes pratiques que vous avez tirées de cette expérience avec le projet ?	
12: Quels défis ou obstacles subsistent pour la suite?	

Questionnaire – Prestataires
BIOTOPE – 3ERAE

Pays : Madagascar
Information (nom et courriel) :
Nom de votre établissement :
Votre fonction dans l'établissement :
Veuillez renvoyer le questionnaire rempli à : robert@uom.ac.mu

Questions	Réponses et commentaires
1: (i) Comment avez-vous entendu parler du projet ? (ii) Quel est votre domaine d'expertise ? (iii) Avez-vous eu des expériences passées avec l'ONUDI ou d'autres agences des Nations Unies ? (iv) Comment avez-vous été sélectionné ?	
2 : (i) Pourriez-vous décrire la façon dont vous avez perçu les différentes évolutions du projet jusqu'à ce jour ? (ii) Pour quel montant avez-vous été engagé ? (Pouvons-nous avoir une copie de votre contrat ?) (iii) Qu'aviez-vous à livrer dans le cadre du contrat avec l'ONUDI ? (iv) Quels ont été les obstacles ou les défis les plus importants pour exécuter les activités du contrat ? (v) Dans quelle mesure ces défis et obstacles ont-ils été surmontés ? (vi) Avez-vous été en mesure de livrer avec succès ? Dans les temps ou avec du retard ? Si avec retard, les raisons du retard? (vii) Le COVID a-t-il affecté votre travail ? Comment avez-vous fait pour surmonter ces défis dus au COVID ? (viii) Pouvons-nous avoir une copie de vos rapports ?	
3: (i) Est-ce l'Unité de gestion du projet (UGP)), le coordinateur national de projet (CNP) vous ont-ils aidé / appuyé dans votre tâche stipulée dans le contrat ? (ii) Comment s'est déroulée la collaboration avec l'UGP, le CNP et les autres parties prenantes clés (par exemple : les autorités nationales – ministères et autres, ADER, ORE, autorités locales, ONGs, etc.)? (iii) Avez des points / sujets liés au projet dont vous aimeriez discuter ?	
4 : (i) Quelle a été l'adoption de vos livrables (que vous avez produits dans le cadre du contrat) par les parties prenantes / partenaires nationaux (par exemple, les	

Questions	Réponses et commentaires
institutions nationales, les détenteurs de PCB, etc.) ? (ii) Y a-t-il eu des difficultés / défis pour l'adoption de vos livrables par les parties prenantes / partenaires nationaux / bénéficiaires ? (iii) Si oui, quels ont été les défis et comment ont-ils été surmontés ? Ou, que peut-on faire pour surmonter ces défis ?	
5 : (i) Quelles sont les leçons apprises et les bonnes pratiques que vous avez tirées de cette expérience avec le projet pour promouvoir l'hydroélectricité et réduire l'émission de GES ? (ii) Selon vous, quels défis ou obstacles subsistent encore pour l'établissement de petites centrales hydroélectriques en zone rurale à Madagascar ? (iii) Comment peut-on surmonter ces défis ?	
6 : Votre retour (feedback) sur le projet ? Comment vous appréciez la contribution de ce projet pour promouvoir l'hydroélectricité et réduire l'émission de GES ?	

9.6. Annex 6: List of GEF projects for Madagascar on Climate Change

1. Enabling Madagascar to Prepare its Initial National Communication in Response to its Commitments to UNFCCC – GEF ID: 639; $350,000, UNDP, 1999
2. Preparation of a National Action Program to Adapt to Climate Changes – GEF ID: 2521, $200,000, WB, 2004
3. Adapting Coastal Zone Management to Climate Change in Madagascar Considering Ecosystem and Livelihoods – GEF ID: 4568; $5,337,500, UNEP, 2014
4. Enabling Climate Resilience in the Agriculture Sector in the Southwest Region of Madagascar – GEF ID: 5233, $6,272,000, AFD, 2014
5. Increased Energy Access for Productive Use through Small Hydropower Development in Rural Areas – GEF ID: 5317, $2,855,000, UNIDO, 2015
6. Conservation and Improvement of Ecosystem Services for the Atsinanana Region through Agroecology and the Promotion of Sustainable Energy Production – GEF ID: 9793, $3,789,955, UNEP, 2020
7. Building and Strengthening Madagascar's National Capacity to Implement the Transparency Elements of the Paris Agreement – GEF ID: 9948, $1,344,495 Conservation International,
8. Support the Shift to Electric Mobility in Madagascar – GEF ID: 10275 $1,142,661, UNEP, 2023
9. Integrated Landscape Management for a zero-deforestation coffee and rice value chains in the Central South and Eastern coast of Madagascar – GEF ID: 10750, $9,874,117, FAO, 2022
10. Building adaptation and resilience to climate change in the essential oil sector in Madagascar (ARCHE) – GEF ID: 10908, $1,776,484, UNIDO, 2023

11. Upscaling Ecosystem-based Adaptation for Madagascar's Coastal Zones – GEF ID: 10939, $7,105,936, UNEP, concept approved 2022,
12. Strengthening Ecosystem Restoration Investments in Madagascar – GEF ID: 11139, $14,378,898, UNEP & Conservation International, concept approved June 2023

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