United Nations Development Programme

Government of Morocco

Terminal Evaluation of UNDP/GEF Project:

Promoting the Development of Photovoltaic Pumping Systems for Irrigation

(GEF Project ID: 5539; UNDP PIMS ID: 5284)

FINAL REPORT

by:

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TE timeframe: June 29, 2022- October 3, 2022

GEF Focal Area/Strategic Program: Climate Change - Mitigation

Implementing Partner: National Agency for the Development of Renewable Energy and Energy Efficiency (ADEREE)

Implementing Entity/Responsible Partner: United Nations Development Programme – Morocco

POMPAGE SOLAIRE POUR IRRIGATION AGRICOLE

I. ACKNOWLEDGEMENTS

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Our gratitude goes to all the final beneficiaries of the project, in particular the farmers, agricultural cooperatives, who helped the terminal evaluation team in gathering and collecting different information and data.

At last, but not least, the evaluation team wishes also to extend its appreciation to Mr. Touzani, the National Coordinator of the project, for his availability and support during the evaluation mission.

II. ACRONYMS AND ABREVIATIONS

ADEREE	National Agency for the Development of Renewable Energy and Energy Efficiency
AMEE	Moroccan Agency for Energy Efficiency
AMISOLE	Moroccan Association for Solar and Wind Industries
APPSI	Support to the Solar Pumping Irrigation Program
APR	Annual Project Report
AWP	Annual Work Plan
CC	Climate Change
UNFCCC	United Nations Framework Convention on Climate Change and Sustainable Development (UNFCC)
NDC	Nationally Determined Contribution
CNEDD	National Charter for the Environment and Sustainable Development
COPIL	Steering Committee
FIRM	Facilitating Implementation and Readiness for Mitigation
GCAM	Crédit Agricole du Maroc Group
GEF	Global Environmental Facility
GEF-SP	GEF-Solar Pumping
GHG	Greenhouse gases
MAEC	Ministry of Foreign Affairs and Cooperation
MAPMDTEF	Ministry of Agriculture and Maritime Fisheries, Rural Development, and Water
MEF	Ministry of Economy and Finance
MEME	Ministry of Energy, Mines, Water and Environment
METLE	Ministry of Equipment, Transport, Logistics, and Water
MICIEN	Ministry of Industry, Trade, Investment and Digital Economy
METEDD	Ministry of Energy Transition and Sustainable Development
ONCA	National Office of the Agricultural Council
PEDD	Policy for the Environment and Sustainable Development
PNEEI	National Program for Water Saving in Irrigation)
PNPS	National Program for Solar Pumping
PPV	Photovoltaic Pumping
RESCO	Renewable Energy Service Company
SDGs	Sustainable Development Goals
SNPEDD	National Strategy for the Protection of the Environment and Sustainable Development
SNDD	National Strategy for Sustainable Development
ToR	Terms of Reference
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
USD	United States dollar

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1. EXECUTIVE SUMMARY

1.1. Project Summary Table

Project Title:	Promoting the development of photovoltaic pumping systems for irrigation		
UNDP Project ID (PIMS #):	5284	**LPAC date:** **PIF Approval Date:**	June 7,2016 March 24, 2014
GEF Project ID (PMIS #):	5539	**CEO Endorsement Date:**	March 22, 2016
UNDP Atlas Business Unit	MAR 10	**Project Document (ProDoc) Signature Date (date project began):**	October 14, 2016
ID Atlas Project ID/Award ID	00091134		
Atlas Output ID/Project ID	00096531		
Country(ies):	Morocco	**Date project manager hired:**	October 1, 2016
Region:	RBAS	**Inception Workshop date:**	December 28, 2017
Focal Area:	Climate Change - Mitigation	**Midterm Review date:**	July 31, 2020
GEF-5 Focal Area StrategicObjectives and Programs:	Applicable GEF Focal Area Objective: CCM 3 - "Promote investment in renewable energy technologies."	**Planned closing date:**	October 13, 2020
Trust Fund:	GEF	**If revised, proposed closing date:**	April 13, 2022
Implementing Partner (GEF Executing Entity):	National Agency for the Development of Renewable Energy and Energy Efficiency (ADEREE)		
Other execution partners:	UNDP support (UNDP supported NIM)		
Project Financing:	**At endorsment**	**At TE (USD)***	
[1] GEF financing (incl. PPG):	2,639,726 USD	2,639,726 USD	
[2] UNDP contribution:	100,000 USD	100,000 USD	
[3] Government:	41,837,000 USD	63,338,137 USD	
[4] Private Sector:	28,966,000 USD	5,571,784 USD	
[5] Total co- financing [2 + 3+ 4]:	70,903,000 USD	69,009,921 USD	
PROJECT TOTAL COSTS [1 + 5]	**73,542,726 USD**	**71,649,647 USD**	

*Actual expenditures and co-financing contributions

1.2. Project Description (brief)

GEF-Solar pumping project "Promotion of the development of photovoltaic pumping systems for irrigation"

is a pilot initiative in Morocco designed to position the country on a strategic axis, both promising and firmly anchored in the current concerns of sustainable development. In this respect, the adoption and use of clean technologies in Morocco will help strengthen the technical and institutional capacities of stakeholders and establish investment mechanisms for the deployment and dissemination of renewable energy technologies.

1.3. Table: Evaluation Ratings Table

Monitoring and Evaluation (M&E)	Rating
M&E design at entry	Satisfactory (S)
M&E Plan Implementation	Satisfactory (S)
Overall Quality of M&E	Satisfactory (S)
Implementing Agency (IA) /Executing Agency (EA) Execution	**Rating**
Quality of UNDP implementation/Oversight	Satisfactory (S)
Quality of Implementing Partner Execution	Satisfactory (S)
Overall quality of Implementation/Execution	Satisfactory (S)
Assessment of Outcomes	**Rating**
Relevance	Highly satisfactory (HS)
Effectiveness	Satisfactory (S)
Efficiency	Satisfactory (S)
Overall project Outcome	Satisfactory t (S)
Sustainability	**Likelihood**
Financial sustainability	Likely
Socio-political sustainability	Likely
Institutional framework and governance sustainability	Likely
Environmental sustainability	Likely
Overall Likelihood of Sustainability	Likely

Table 1 : Evaluation Ratings Table

1.4. Summary of key conclusions and recommendations, lessons learned and good practices

Conclusions and recommendations

a) Conclusions

Alternative strategy for achieving the project objectives

GEF-SP project adopted an alternative strategy to achieve its objectives. This strategy requested a "focused intervention strategy", which required a sustained effort to ensure the implementation of the project in a constraining context (lack of institutional commitment to the PNPS, weak managerial capacities of agricultural cooperatives and associations, COIVID-19 pandemic, etc.). Faced with all of these constraints, GEF-SP project made adaptations to deal with this situation (see adaptive

management and risk management).

Efficient project supervision and steering

AMEE, the main project partner, has shown exemplary leadership in the conduct and supervision of the GEF-SP project. The management of GEF-SP project was able to address the challenges of creating the conditions for the development of solar pumping in Morocco and in other African countries (south-south cooperation).

Efficient implementation of the PMU

The PMU has been successful in its daily monitoring of the different project activities and outputs, in terms of planning (AWP and Procurement Plan), coordination between AMEE and the different partners involved for each activity, reporting, organization of CoPil meetings, monitoring committees and internal planning meetings.

UNDP effective support

UNDP support was provided to strengthen national ownership and help achieve results. UNDP has generated synergies and complementarities with the SGP-GEF and the Accelrator programme. It has also been reactive in its interventions to address problems while trying to strengthen national ownership.

Stakeholders' commitment and consensus

The different stakeholders (institutional, technical, professional, and financial) were involved, especially in the CoPil meetings. This involvement was maintained throughout the implementation of the project and proved to be one of the key drivers for achieving the planned results.

Some efforts for gender mainstreaming

GEF-SP project has taken into account the gender issue during its implementation through the participation of women in several institutional and/or individual capacity building activities, as well as in targeted and public awareness raising activities around solar pumping. This issue was also taken into account in the representation of women in the PMU as well as in the monitoring and CoPil.

Institutional and governance framework

The main factors favouring the implementation of an institutional and governance framework for solar pumping are: (i) ownership of the GEF-SP project strategy after the project's closure (ii) consensus of the stakeholders on the steps to be taken for the project activities after its closure, (iii) leadership of the AMEE, which is able to promote the project's results, (iv) the emergence of a national capacity, (iv) the emergence of national, regional and local capacity in terms of experience and expertise through the strengthening of appropriate institutional and professional capacities, (v) the possible integration of GEF-SP project strategy into the National Strategy for Sustainable Development (NSSD), being redesigned (2022-2023), (vi) the necessary transfer of the project's technical knowledge, and (vii) the mainstreaming of gender equality and human rights in future public policies.

Financial sustainability in the long term

Upon completion of GEF support, financial resources to support the continued benefits GEF-SP project can be obtained from multiple sources, including: (i) the updated solar pumping NAMA, serving as a basis for mobilising climate finance, (ii) the funding request, designed with the support of UNDP-Morocco, has been addressed by the GEF-SP project to the Green Climate Fund (GCF) to prepare for the mainstreaming of solar pumping support for the medium and long term, and (iii) the financing and support mechanisms for the green economy deployed by international (GEF- UNDP- EBRD, IFC/World Bank) and national (Morocco SME) actors.

Benefits and knowledge transfer of the project

The transfer of technical knowledge has been planned by ProDoc in terms of information sharing networks and forums use at sub-national, national, regional, and global levels. To the credit of GEF-SP project, four modalities for communication and knowledge sharing were carried out, namely: (i) regional and local workshops and thematic panels, (ii) participation in dedicated fairs and exhibitions, (iii) awareness-raising tools and multimedia communication actions, and (iv) awareness-raising video capsules.

Sustainability

GEF-SP project has several net benefits that are likely to continue after its closure. In fact, certain conditions of sustainability (institutional, social, political, financial, and environmental) are met to ensure the continuity of these benefits in the mid- to long-term. However, two factors relating to environmental sustainability need to be addressed. These are: (i) endemic drought which results in a regular decrease in water availability, and (ii) over-pumping of water, which could represent a significant risk to the sustainability of GEF-SP project results

Progress towards achieving long-term impact

GEF-SP project has contributed to: (i) the acquisition of knowledge and skills to develop and manage solar pumping projects for agricultural irrigation, (ii) raising awareness of the importance of adopting and using solar energy in agricultural irrigation, (iii) setting up the framework for monitoring performance and reducing greenhouse gas emissions, and (iv) initiating the transformation of the solar pumping market for agricultural irrigation through the mobilization of the private sector (professional and banking), and (v) the production of several technical reference systems to improve the quality of solar pumping equipment for agricultural irrigation.

b) Recommendations

#	Recommendation	Responsible	Temporal

		Entity	involvement
Category 1. Project cycle review (preparation, formulation, and implementation)			
Recommendation 1. Considering the long delays in the preparation of the project and its implementation, ***it's recommended that in the future, the problems related to the procedural aspects of the project approval and the conditions of its implementation be better studied and anticipated for the formulation of future UNDP/GEF projects***.		UNDP&GEF	Short time
Category 2. Long-term focused intervention strategy			
Recommendation 2. In line with the recommendation of the generalization of solar pumping for agricultural irrigation in Morocco (GEF-SP project closing report, July 2022) and, considering the positive appreciation of the New Development Model (NMD) on the extension of the use of solar energy techniques in water pumping in Morocco, ***it would be advisable for AMEE to develop a long-term focused strategy on solar pumping in Morocco by advocating the integration of the GEF-SP project's results into the Moroccan public policies and programmes for sustainable development.***		Government (AMEE & key partners)	Mid-term
Category 3. Institutional and governance framework of the solar pumping ecosystem			
Recommendation 3. In line with the recommendation of the generalisation of solar pumping for agricultural irrigation in Morocco (GEF-SP project closure report, July 2022) and considering the positive assessment of the New Development Model (NMD) on the extension of the use of solar energy techniques in water pumping in Morocco, ***it would be advisable for AMEE to develop a longer-term focused strategy on solar pumping in Morocco by advocating for the integration of the results of GEF-SP project into the public policies and programmes of sustainable development in Morocco.***		Government (AMEE & key partners)	Mid-term
Category 4. Gender mainstreaming			
Recommendation 4. ***It is recommended to systematise gender analysis and improve the targeting of women in future programmes and similar gender mainstreaming projects.***		UNDP/GEF Government	Short term
Category 5. Sustainability of the net benefits of GEF-SP project			
Recommendation 5. *Considering the net benefits of the GEF-SP project,* ***it is recommended that the Government ensure the various financial, economic, social, environmental, and institutional capacities for their long-term continuity.***		Government	Mid-term
Category 6. GEF-SP project exit strategy			
Recommendation 6. The exit and sustainability strategy of GEF-SP project is envisaged by the final report of the (July 2022). ***In fact, the latter formulated the first elements of this strategy, which converge with several proposals of several stakeholders consulted during the TE mission. To ensure the sustainability of the project's net***		Government (AMEE)	Short term

benefits, it is recommended that the GEF-SP exit strategy and its implementation specific modalities be explicitly formulated and detailed.		

Table 2 : Recommendations

Lessons learned and good practices

a) Lessons learned

Three lessons are identified and presented below. These lessons from the GEF-SP project experience concern: (i) the effectiveness of project management and implementation, (ii) the commitment of stakeholders and their ownership of the net benefits of the project, and (iii) the contribution of GEF additionality to the results achieved by the project.

Lesson 1.
The effectiveness of the GEF-SP project's steering and implementation
The participatory approach adopted for both the steering and the implementation of GEF-SP project facilitated the efficient execution of the project and reduced the risks of failure. In other words, steering and implementation were crucial to the success of GEF-SP project and the sustainability and durability of its results.

Lesson 2.
Stakeholders' commitment and ownership of the net benefits of GEF-SP project
The commitment of stakeholders (institutional, professional, and financial), and their regular participation in GEF-SP project activities (CoPil, technical studies, training, etc.) contributed to the effectiveness of the results and strengthened ownership of the net benefits obtained by GEF-SP project.

Lesson 3.
The contribution of the GEF addionnality to the results of GEF-SP project
Without GEF funding, the project's achievements would not have been possible. In fact, without GEF support, the project wouldn't have been able to mobilise farmers (cooperatives and agricultural associations) to adopt solar pumping systems and provide the support required for the dissemination of quality solar systems.

b) Good practices: institutionalising - territorialising - professionalising

The three good practices, presented below, are to be capitalised on and shared with other regions in Morocco (advanced regionalisation) and/or with other countries (Africa, MENA, etc.). These three good practices concern: (i) the institutionalisation of the support model developed by the project, (ii) the territorialisation of this model, particularly in the regions, and (iii) the professionalization of stakeholders through the labelling of the quality of solar pumping installations.

Good practice 1.
Institutionalization of the support model developed by the GEF-SP project

GEF-SP project has developed a support model for farmers and their professional organisations to integrate quality requirements and ensure the sustainability of their solar pumping investment projects in Morocco. This model is built on three pillars, namely: (i) institutional and professional capacity building, (ii) quality standards, and (iii) technical assistance.

With a perspective of scaling up and replication of GEF-SP project experience, the institutionalisation of accompaniment would be a best practice to be structured, shared, and disseminated.

Good practice 2.

The territorialization of the model developed by GEF-SP project.

Another good practice, which GEF-SP project can claim is the experimentation of pilot projects in the regions. This experience consisted in testing the validity of the model for accompanying pilot projects of solar pumping for agricultural irrigation through: (i) quality requirements and criteria (technical and economic studies - modular solution and configurations - site parameterisation and operator needs - installation operations), (ii) contracts linking the project owner and the service provider, based on quality assurance and after-sales service, and (iii) tools for monitoring the impact of the technical and environmental performance of the installed projects, and (iv) good practices and requirements related to the rational use of water resources).

Good practice 3.

Professionalization of the solar pumping market

GEF-SP project has initiated the professional development of solar pumping in Morocco through (i) the professional qualification of companies to participate in the supply, transport and installation of solar pumping projects and in the design and the deployment of the TaqaPro label, (ii) the standardisation of technical specifications for the choice of equipment (modules, inverters, pumps, AC/DC safety components) as well as for the installation, maintenance and servicing of the systems, (iii) awareness raising and dissemination of quality standards, structuring and labelling of micro-enterprises by the RESOVERTs, (iv) industrial integration through the emergence of a local market in terms of manufacturing and assembly of solar system components, (v) proposal of adapted financing mechanisms and incentives to boost the pumping market, and (vi) strengthening of financing capacities for the structuring of the solar pumping market through tax exemptions for solar pumping.

All these benefits, developed the GEF-SP project, have been the subject of technical specifications for the setting up and technical monitoring of solar pumping projects in Morocco.

Through these contributions from partners (professionals, banking sector and regional networks), the GEF-SP project has succeeded in: (i) ensuring the conditions for the sustainability and long-term impact of its results (impact effects), and (ii) laying the foundations for private sector commitment to a large-scale expansion of the pumping market in Morocco (national/regional) and Africa

2. MANAGEMENT RESPONSE

The effective start of the project is November 2017 with the launch meeting held between AMEE and UNDP. The starting date of the national project coordinator was 1 October 2017.

The partners were active and provided input at the level of CoPil (steering committee) meetings, at the level of bilateral consultation meetings organised by the coordinator as well as in the Monitoring Committee (MC) meetings.

The gender approach was given particular attention during the various annual work planning activities of the project, especially in the planned training and awareness-raising activities, pilot projects and communication actions. The absence of a specific gender target indicator in the planning documents is due to its non-existence in the ProDoc.

3. INTRODUCTION

1. This report is the terminal evaluation (TE) of the Project GEF-Solar Pumping "Promotion of the Development of Photovoltaic Pumping Systems for Irrigation" (GEF-SP project). For an initial period of four years (2016-2020), the project was implemented by the Moroccan Agency for Energy Efficiency under the Ministry of Agriculture and Maritime Fisheries (MAPM).

2. GEF-SP project was implemented according to the UNDP guidelines for national implementation projects (NIM) and in accordance with the UNDP programing, its operational policies, procedures (POPP) and results-based management principles.

3. The project GEF-SP was financed by GEF (2,639,726 USD) with respective contributions from the UNDP (100,000 USD), and the Government of Morocco through MAPM (41,837,000 USD). The private sector mobilised the equivalent of USD 28,966,000 (cash and in- kind).

3.1. Purpose, Objective and Scope of the TE

4. Conducted in accordance with UNDP/GEF guidelines, the purpose of this TE is, as specified in the ToRs, to assess the achievement of project results against what was planned and to draw lessons, which can both improve the sustainability of project benefits and contribute to the overall improvement of UNDP programming.

5. Specifically, it is a matter of: (i) assessing the progress of the activities, (ii) estimating the extent to which the project has achieved its objectives in terms of outcomes and impact, (iii) assessing the adequacy of the means used to achieve the objectives, (iv) identifying implementation problems and assess the proposed solutions, (v) capitalizing on the adjustments and/or reorientations of activities, financing and working methods, and (vi) proposing mechanisms for institutionalizing the project's achievements, the capacity building plan, and the results of thematic expertise developed by the project with a view to integrating them into the framework of sectoral plans and program contracts in the fields of agriculture and energy.

6. To this end, the TE examines the extent of the project's achievements. It focuses on the delivery of project results as originally planned, taking into account the recommendations made by the mid-term evaluation (2020).

7. The TE provides recommendations for the follow-up of the project's activities and requires a response from the government. The Terminal evaluation and management response will be downloadable from UNDP/GEF systems.

8. The evaluation team consolidated the recommendations of the Terminal Evaluation ToRs to answer the following two key questions:
   - **A. What has GEF-SP project achieved?**
     On the one hand, it is a matter of measuring and analysing in a rigorous and precise way the expected results of the implementation of GEF-SP project (formative evaluation).
   - **B. How and why are the expected results of the GEF-SP project achieved or not?**

On the other hand, on the basis of the previous step, it is necessary to provide a prospective analysis composed of lessons learned and strategic recommendations for decision-making (summative evaluation).

9. The following table presents the evaluation questions area with their corresponding evaluation criteria, priority level and evaluation sub-criteria.

Table 3 : Evaluation Questions by Area, Priority Level, and Evaluation Sub-criteria

Area	Evaluation Criteria	Priority Level	Evaluation Sub-criteria
Expected results - What has GEF-SP project achieved?	Relevance	Average	- GEF-SP project takes into account the needs of the final beneficiaries (farmers and agricultural cooperatives) - Alignment of the project GEF-SP project with overall and sectorial environment and sustainable development strategies - Level of alignment between the project GEF-SP project objectives and GEF strategic priorities (including alignment of relevant focal area indicators) - Level of alignment of GEF-SP project objectives and design with UNDAF and CPD
	Effectiveness	High	- Stage of completion of outputs and immediate outcomes - Effectiveness in achieving intermediate and final outcomes
	Sustainability of achieved benefits	High	- Financial and socio-political sustainability of the institutional framework concerning environment governance - Overall potential for sustainability
	Cross-cutting issues	Average	- Consideration of cross-cutting issues (gender equality and women's empowerment, poverty reduction, climate change mitigation and adaptation, capacity building, knowledge management, South-South cooperation, volunteering, etc.
			- Rationale of GEF-SP project (validity, feasibility, coherence) - Theory of change - Innovation in relation to the national context and priorities - Lessons learned from other relevant projects - Gender equality and women's empowerment - Expected stakeholder participation

GEF-SP project management - How and why the expected results are being achieved or not?	Design and implementation	Average	- The project's links to other interventions within the sector - Management modalities - Risk management, including environmental and social standards - Results framework analysis: project logic and strategy, indicators - Assumptions and risks - Quality and degree of the implementation of the project strategy - Implementation problems and suggested solutions
	Project implementation	High	- Adequacy of the resources implemented to the objectives being sought. - Adaptive management (changes in project design and outputs during implementation) - Effective stakeholders' participation - Convergence with other similar interventions / Effective partnership arrangements - Implementing partners (UNDP) and executing agency: overall project oversight/implementation and execution
	Financial and programmatic efficiency	Average	- Financing and co-financing of the project - Cost-benefit analysis - Cost-effectiveness analysis - GEF additionality - Status of implementation - Timeliness and adherence to deadlines - M&E (design at entry, implementation, and overall evaluation)
	Management of development results		- Effects and impact that have been achieved or not - GEF additionality - Catalytic role / Replication effect
	Progress towards impact	High	- Factors hindering the achievement of impact (project & context
	Lessons learned and good practices	High	- Mechanisms to institutionalise the achievements of GEF-SP project - GEF additionality - Examples of good practices related to the design and implementation of the project) - Adjustments and/or re-orientations of activities, funding and working methods

10. The above-mentioned evaluation sub-criteria will be further analysed in order to generate robust evidence-based findings.

3.2. Evaluation Approach and Methodology

A) Global approach

11. This evaluation involves the use of a qualitative and quantitative investigative approach based on a range of data collection and analysis tools adapted to the type of information sought, as well as to the different types of actors involved in the design, planning, financing, implementation, monitoring, and evaluation of the project during the reporting period.

12. The type of information sought is based on the OECD/DAC criteria, as set out in the ToR for this evaluation, namely relevance, effectiveness, efficiency, sustainability, and impact. Issues related to gender equality and women's empowerment and the impacts of COVID-19 will be included in this review. The analysis will also take into account lessons learned and good practices from the implementation of the GEF-PS project.

13. Our approach will also focus on (i) the use of evaluation results as a teleological and systematic framework; (ii) the collaborative approach as a methodological approach; and (iii) mixed methods as operational tools. The aim of this approach is to favour the development of valid, accurate, credible and useful conclusions and recommendations.

Using the results of the TE

14. The use of the results means that the team will shape all the tasks of the assignment in such a way as to highlight the expectations that the contractor and its partners want to make of the results. It will therefore be useful for the evaluation team and the follow up team of the RU (AMEE & UNDP) to explore together the ways in which the evaluation recommendations can achieve these objectives. To this end, during the inception phase, the consultant, in collaboration with the TE follow-up team, will review and confirm the list of key users of the TE.

Collaborative approach

15. A collaborative approach favours an exhaustive process of consultations with the key stakeholders and actors to whom the evaluation is addressed in order to validate the findings, construct the results and foster their ownership. The various meetings with the follow-up team (AMEE & UNDP) and the consultations in the field will be the appropriate framework to foster this collaborative process. Finally, the phase of validating the conclusions and constructing the recommendations represents an excellent opportunity to ensure the validity and ownership of the evaluation results.

Mixed methods

16. The consultant team will use a combination of quantitative and qualitative methods for data collection. On the qualitative side, we will favour document review, semi-structured interviews and focus groups. On the quantitative side, we will use analysis of the project databases. The data will be analysed using the following methods:
    1) **Descriptive analysis** of the context, actors, interests at stake, mechanisms, resources and products deployed by GEF-SP project;

2) **Analysis of the content** collected during the evaluation. This analysis will identify trends and recurring themes, as well as contradictory information that emerges around the evaluation questions. This step could guide the team towards the collection of additional data;
3) **Quantitative analysis** to further investigate financial, evaluative, management and other data; and
4) **The comparative analysis** will identify best practices or lessons learned from the GEF-PS project experience.

B) Methodology

17. The proposed methodological approach will focus on: i) Theory of Change (ToC) as the framework for the evaluation; ii) Progress towards impact analysis as the methodological approach; and iii) Partner and stakeholders' participation as a learning process. The aim of this approach is to facilitate the development of conclusions and recommendations, which will be as valid, credible, and useful as possible.

Theory of Change (ToC)

18. The evaluation when based on the theory of change makes it possible to compare the achievements and results planned by the GEF-PS project with those actually achieved at the end of the project.

19. Based on the GEF-SP project ProDoc and key informant interviews, the evaluation team will reconstruct the project ToC, and will seek to answer the following questions: (a) what are the transformational changes foreseen by the project? (b) What are the process steps of the changes foreseen by the GEF-SP project? (c) What are the key assumptions and risks expected for the success of the project? (d) What are the contextual factors that could hinder the project's planned change efforts? (e) Were the implementation and timeframes for driving changes realistic? (f) Were the resources sufficient to carry out the various project outputs? (g) Are the inputs and outputs implemented likely to support transformational change after the project's closure? Which ones?

Analysis of progress towards impact

20. The evaluation of results will focus, as far as possible, on direct and intermediate outcomes, and will obviously include outputs. These outcomes achieved within GEF-SP project will be assessed mainly in terms of net benefits (global, national, and local), catalytic effects, and the wider replication of GEF-SP project experience in other regions in Morocco.

21. Progress towards impact will be analysed through the overall evaluation of implementation and results (up to 2022). To this end, particular attention will be paid to factors affecting the level of achievement or progress towards impact as well as risks that may prevent further progress towards long-term impact. Two types of factors will be considered: project-related factors and contextual factors.

Stakeholder participation

22. In line with the ToRs, our experience suggests that stakeholder participation in the evaluation process should be prioritised. This will promote a comprehensive process of consultation with stakeholders and relevant actors in order to validate findings, build recommendations and promote ownership.

3.3. Methods of Data Collection and Analysis

23. The TE team used a combination of quantitative and qualitative methods for data collection, analysis, and triangulation. On the qualitative side, document review, semi-structured interviews and field observation were deployed. On the quantitative side, the analysis focused on the project databases, particularly for the analysis of the project's financial efficiency.

24. The data analysis was conducted through the following analyses: (i) descriptive analysis of the context, actors, interests at stake, mechanisms, resources and products deployed by GEF-SP project; (ii) analysis of data collected during the evaluation. This analysis will identify tendencies and recurring themes, as well as contradictory information that emerge during the evaluation questions. At this stage, the team could look for additional data collection; (iii) quantitative analysis to further investigate financial, management and other data; and (iv) comparative analysis of projects within the same sector of activity to identify differences in trends due to geographical, strategic, or other factors. This analysis will also identify best practices or lessons learned from different contexts.

3.4. Ethics

25. The TE Consultant complied with the principles set out in the United Nations Evaluation Group (UNEG) "Ethical Guidelines for Evaluation"[1], including:
    - The protection of the rights and confidentiality of informants, respondents, and stakeholders by ensuring compliance with legal and other relevant codes governing data collection and reporting.
    - The safety of the data collected before and after the evaluation mission and compliance with protocols to ensure the anonymity and confidentiality of information sources.
    - Use of information and data being collected as part of the evaluation process only for the evaluation and not for any other purpose without the permission of UNDP and its partners.

3.5. Limitation of the evaluation

26. The present evaluation encountered certain limitations, including: **(i)** the availability of some key GEF-SP project documents, notably the financial reporting (final version); **(ii)** the availability of key informants, particularly during the summer period (and the Aid al-Adha holiday); **(iii)** the influence of the context of GEF-SP implementation concerning the quality and validity of data, and the access to target groups, particularly beneficiaries; and **(iv)** the availability and quality of information produced by GEF-SP project M&E system

3.6. Structure of the TE report

[1] GNUE, (2016). *Normes et règles d'évaluation*, Nations Unies, UNEG (sigle anglais de GNUE), New York, USA http://uneval.org/document/detail/1914

GNUE, (2020). *Ethical Guidelines for Evaluation*, UNEG, New York, USA. http://www.uneval.org/document/detail/2866

27. The structure of the TE report of GEF-SP project complies with the ToR and the Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financing Projects (GEF&UNDP, 2020). In addition to the executive summary, the report outline falls into 5 parts: **(i)** Introduction covering the following points: Purpose and objective of the TE - Scope - Methodology - Data collection and analysis - Ethics - Limitation of the evaluation - Structure of the TE report; **(ii)** Project description covers the following: Project beginning and duration, including milestones - Development context: environmental, socio-economic, institutional and policy factors relevant to the project's objective and scope - Problems the project seeks to address: threats and barriers - Immediate and developmental objectives of the project - Expected results - Key stakeholders: checklist - Theory of change; **(iii)** Evaluation mission findings covering the following: Project design/development - Project implementation - Project results and impacts; **(iv)** Key conclusions, recommendations and lessons learned and good practices; and **(v)** Annexes, including a set of appendices prepared in accordance with GEF requirements.

4. PROJECT DESCRIPTION

4.1. Project start and duration, including project cycle milestones

28. According to GEF-SP project ProDoc, the project duration is 36 months, starting in August 2016 and ending in July 2019. Due to various reasons and constraints, the project started in November 2017 with the AMEE-UNDP start-up meeting. In addition to COVID 19 pandemic, which disrupted the implementation of the project, the confrontation of GEF-SP project intervention strategy with several context realities shows an ambitious approach in terms of objectives and expected results.

29. As a matter of fact, the institutional, legal, and financial preconditions for the implementation of the project required more time. For these reasons, the mid-term evaluation (2020) recommended an extension of the period of the implementation to permit the achievement of the expected results.

Table 4 : Key milestones in the progress of the GEF-SP project

Key dates of the GEF-SP project	
Registration of the Focal Point Endorsement (Government)	August, 2013
PIF approval	March 24, 2014
Meeting of the Local Project Review Committee	June 7, 2016
Signature of ProDoc / Start of implementation	October 14, 2016
AMEE-UNDP Start-up Workshop	December 28, 2017
Date of mid-term evaluation	June-July, 2020
Expected date of project closure	April 13, 2022
Date of the TE	June-October, 2022

Duration of implementation

30. According to the minutes of the Local Project Committee review of 7 June 2016, the period of the start of GEF-SP project implementation is December 2016. The closing date for its activities is 30 November 2020. The initial total duration of the GEF-SP project implementation is 4 years.

31. The project effectively started in November 2017. It was closed in April 2022. The project activities started at the beginning of 2018. In the end, the total duration of the implementation is 65 months (5 years and 5 months) (see Table 2. Key milestones in the progress of GEF-SP project, page 25).

Project preparation time

32. The duration of GEF-SP project preparation is 53 months (4 years and 5 months), from the registration of the endorsement of the Focal Point (Government) in August 2013 to the signature of the ProDoc/Start of implementation in October 2016.

33. According to the Country Portfolio Evaluation - Morocco (2016), the average preparation time for large-scale GEF projects in Morocco is 32 months. This means that GEF-SP project preparation time is above the average of 21 months (page 67).[2]

4.2. Project Development Context

34. For several years, as a consequence of climate change, Morocco has been suffering from (i) endemic drought and regular decrease in water availability, (ii) irregularity of agricultural production, and (iii) intensification of extreme climatic phenomena (droughts, floods, sea level rise, etc.). Several sectors and human activities have been negatively impacted, such as agriculture, forests and oases, water resources, agriculture, forests, natural resources, biodiversity, and human health.

35. To address the consequences of climate change, Morocco has elaborated a strategy based on two principles, namely (i) the implementation of a greenhouse gas (GHG) emissions mitigation policy. This strategy aims, in particular, to introduce clean technologies, and (ii) the development of various strategies, policies and national plans and programs for sustainable development, such as the National Charter for the Environment and Sustainable Development (CNEDD), the Draft National Strategy for Sustainable Development (SNDD) in 2030, the Policy for the Environment and Sustainable Development (PEDD), the National Environmental Action Plan (PANE), etc. Morocco also developed in 2017 the Nationally Determined Contribution (NDC), under the United Nations Framework Convention on Climate Change (UNFCCC) in commitment to reduce its GHG emissions by 42% in 2030.

4.3. Problem that the project sought to address: threats and obstacles

36. The project "Promotion of the Development of Photovoltaic Pumping Systems for Irrigation" was designed to support and address the shortcomings of the National Solar Pumping Program.

37. The PNPS is a program that should put in place a mechanism to manage subsidies and allow traceability of all beneficiary projects. The project targets fruit plantations and leguminous crops grown by small and medium-sized private farmers using gravity-fed irrigation.

38. GEF-SP project was intended to be a tool to accompany the PNPS as a reference program. However, the PNPS was not operationalized to

Box 1 : The challenge of hydric-stress in Morocco

Morocco is among the world's most water-stressed countries, a problem that is expected to worsen in the decades to come. Between 1960 and 2020 the per capita availability of renewable water resources has decreased from 2,560 m^3 to about 620 m^3 per person per year, placing Morocco in what is considered a situation of structural water stress (below 1,000 m 3), fast approaching the absolute water scarcity threshold of 500 m3 per person per year. This challenge is set to aggravate with climate change, given the evapotranspiration caused by projected increases in mean annual temperatures (by 1.5° C to 3.5°C by mid-century) and an anticipated decrease in precipitations (by 10–20 percent, which could reach 30 percent in some regions). In this context, droughts may be becoming more frequent, and gradually converge to a quasi-permanent condition.

Source: World Bank (2022). Morocco – Economic Monitor. The Recovery is Running Dry, page 15.

[2] https://www.gefieo.org/sites/default/files/documents/evaluations/cpe-morocco-vol1.pdf

prompt the GEF-SP project to adapt its intervention strategy, focusing on the demonstration of its approach, products, and tools.

39. In fact, GEF-SP project has ambitious objectives to address real challenges for the promotion of solar pumping in Morocco, particularly: (i) the lack of institutional, professional and financial capacity for solar pumping, (ii) the absence of a comprehensive institutional and governance framework dedicated to solar pumping for irrigation, (iii) the non-existence of well-established market data on solar pumping (supply/demand, informal nature) and, (iv) low production of PV pumping equipment and components.

4.4. Immediate and developmental objectives of the project

40. According to ProDoc, GEF-SP project aims to: "Promote the adoption of photovoltaic pumping systems for localized irrigation in Morocco"; but this objective has been reformulated into an overall objective (impact) as follows: "Establishment of an enabling framework for the development of solar pumping and creation of favorable conditions (technical, financial, organizational and support) for its success".

41. Four intermediate results are derived from the overall objective of GEF-SP project, namely: (i) contributing to the creation of a quality market through a system of standardised equipment, operator accreditation, installers' training and equipment labelling, (ii) building institutional and stakeholder capacity for the development and management of solar pumping projects for irrigation, (iii) strengthening local capacity for the production of photovoltaic pumping components: technological mastery and job creation, and (iv) the establishment of a monitoring framework in terms of energy performance and greenhouse gas emission reduction.

4.5. Expected results

42. Four immediate outputs/results of GEF-SP project are envisaged by the ProDoc, namely:
    - PV pumping units with a range of configurations are designed, evaluated, installed, and being implemented.
    - An enabling framework for sustainable implementation and standards for solar pumping and fertirrigation practices are developed.
    - Financial support and incentive mechanisms are identified, designed, and proposed to MEF for implementation.
    - Beneficiaries' capacities are strengthened in the development, implementation and management of solar pumping and associated irrigation systems.

4.6. Key partners involved in the project

43. A stakeholder analysis was conducted during the preparation phase of GEF-SP project to identify key stakeholders, assess their interests in the project, and examine their roles and responsibilities in the implementation of the project. Three categories of stakeholders are identified:
    - Institutional partners, (i) the Ministry of Energy, Mines, Water and Environment (MEMEE), (ii) the National Agency for the Development of Renewable Energy and Energy Efficiency (ADEREE), and (iii) the Ministry of Agriculture / Agricultural Development Agency (ADA);

- Private operators grouped within the Moroccan Association of Solar and Wind Industries (AMISOLE);
- Banks through the Crédit Agricole du Maroc (GCAM) and the Agricultural Development Finance Corporation "Tamwil El Fellah"; and
- Farmers owning small and medium-sized farms.

44. At the closure of GEF-SP project, the list of stakeholders is as follows:
- Project implementing partner: Moroccan Agency of Energy Efficiency (AMEE);
- Donors: Global Environment Facility (GEF) and the United Nations Development Programme (UNDP);
- Institutional stakeholders: Ministry of Energy Transition and Sustainable Development (MTEDD) and Ministry of Agriculture, Maritime Fishing, Rural Development, Water and Forests (MAPMDREE);
- Banks: Crédit Agricole du Maroc (GCAM) and the Agricultural Development Finance Corporation « Tamwil El Fellah »;
- Professional association: Moroccan Association of Solar and Wind Industries (AMISOLE); and
- Farmers.

4.7. Theory of change of GEF-SP project reconstituted

45. The ProDOC and the mid-term evaluation (2020) didn't constitute the project's theory of change, the fact that could have demonstrated how the project was expected to convert inputs, activities, and outputs into immediate, intermediate and final outcomes (impact).

46. The reconstitution a posteriori of GEF-SP project's theory of change presented below (Diagram 1) describes the logical sequence of the project's expected direct, intermediate, and final results/outcomes (long-term sustainable impact). This approach aims to examine the extent to which these effects are achieved, the conditions and reasons for achieving or not the outcomes, and their contribution to the overall development objective of GEF-SP project.

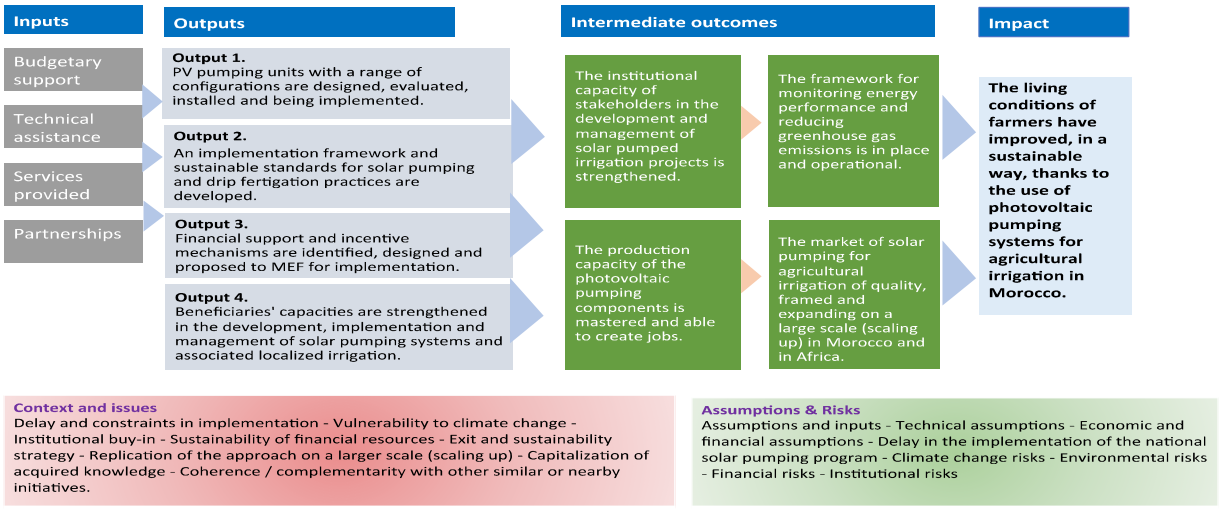

Diagram 2 : Theory of change of GEF-SP project reconstituted

5. FINDINGS

5.1. Project Design/Formulation

47. ***The main weakness of GEF-SP project design is the absence of an explicit theory of change that can demonstrate the relationships between the project components, particularly between outputs and the overall objective (impact). In addition, the lack of formulation of intermediate outcomes does not allow for an assessment of the main transformational changes expected from the project. The theory of change has been re-constituted by the TE team***. (see 4.7. re-constituted theory of change).

5.1.1. Analysis of Results Framework: project logic and strategy, indicators

Strategy and rationale behind GEF-SP project

48. ***The GEF-SP project strategy was based on lessons learned from the design exercise of other previous and ongoing projects and programmes, particularly the National Solar Pumping Programme (PNPS). (This PNPS programme has not been operational, although it was the subject of a convention signed in 2013 between the Ministries concerned, AMEE and GCAM).***

49. The PNPS justified the initiation of GEF-SP project. In fact, the project's ProDoc has well specified the rationale of the GEF-SP project, which is "to offer increasing, pragmatic and adapted support to the National Solar Pumped Irrigation Programme while addressing the shortcomings identified in the PNPS in terms of approach, technological choices, partnerships, etc.". In addition, the project has "appropriated" the NAMA concept of the NPSP, which was developed in the framework of the activities of a previous project, namely the FIRM (Facilitating Implementation and Readiness for Mitigation) project.

50. As envisaged by the ProDoc, the rationale of the GEF-SP project is to promote the adoption of photovoltaic (PV) pumping systems for localised irrigation through the creation of a framework conducive to the implementation of the national programme through: (i) capacity building of the different actors involved; (ii) support to sensitise operators and farmers on the economic and environmental interest of solar pumping; (iii) implementation of financing mechanisms facilitating the acquisition of PV pumping systems; (iv) standardisation of solar installations for irrigation; and (v) implementation of a framework for monitoring the impacts of the project in terms of GHG emissions mitigation.

The intervention logic of the GEF-PS project

51. As foreseen by the ProDoc, the intervention logic of the GEF-SP project aims to promote the adoption of photovoltaic (PV) pumping systems for localized irrigation by creating an enabling framework for the implementation of the national program through: (i) capacity building of the various actors involved; (ii) support to sensitize operators and farmers on the economic and environmental interest of solar pumping; (iii) implementation of financing mechanisms

facilitating the acquisition of PV pumping systems; (iv) standardization of solar installations for irrigation; and (v) implementation of a monitoring framework for the project's impacts in terms of GHG emissions mitigation.

GEF-SP project main Outcomes

52. The main Outcomes of GEF-SP are as follows:
    - PV pumping units comprising a range of configurations are designed, evaluated, installed, and being implemented (Output 1).
    - A sustainable implementation framework and standards for solar pumping and fertigation drip practices are developed (Output 2).
    - Financial support and incentive mechanisms are identified, designed, and proposed in collaboration with MEF for implementation (Output 3).
    - Beneficiaries' capacities are strengthened in the development, implementation and management of solar pumping and associated drip irrigation systems (Output 4).

53. On the other hand, the GEF-SP project's ProDoc detailed three to five activities per Outcome.

SMART indicators, mainly quantitative

54. GEF-SP project indicators are SMART (Specific - Measurable - Attainable - Relevant - Timely). Each indicator refers to a baseline situation at the beginning of the implementation and an end-of-project target. The results framework also provides the source of verification, and the assumptions and risks for each indicator. Progress is verified through quarterly project reports or activity-specific reports (training, awareness raising, etc.). As noted by the mid-term evaluation (2020), it should be confirmed that only one of the 19 indicators in the results framework explicitly targets women: "Number of new partnerships with RESCOs promoted for the provision of improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women". In addition, four indicators are disaggregated by gender.

5.1.2. Assumptions and risks

55. ***The ProDoc identified assumptions and risks that could impact the expansion of the PNPS, the implementation of the GEF-SP and the achievement of expected results. More specifically, the assumptions and risks at the level of the overall objective (impact) and outputs were established in the ProDoc and represented in the table below.***

Table 5 : Assumptions and risks GEF-SP project

Monitoring	Assumptions	Risks

Overall objective (Impact) To promote the adoption of photovoltaic pumping systems for localised irrigation in Morocco.	1. Direct emissions reduction on an annual basis, applying a GEF causality factor of 60%. 2. Project activities will successfully catalyse private sector RESCO interest in solar pumping products and market opportunities. 3. The targeted number of solar pumps installed is achieved.	1. Leakage related to the reuse of substituted fuel pumps. 2. Delay in implementation of the national solar pumping programme. 3. Climate change risks. 4. Environmental risks.
Outcome 1: PV pumping units comprising a set of configurations are designed, evaluated, installed, and being implemented	1. Application of GEF causality factor of 60%. 2. Good cooperation between targeted farmers in reporting operational information of installed solar systems.	Risks of delay in the implementation of operational modalities for the provision of subsidies and implementation of solar pumping projects.
Outcome 2: An implementation framework and sustainable standards for solar pumping and “fertirrigation” practices are developed	1. Active participation of the regional ministerial services in raising farmers' awareness of the importance of optimising fertirrigation. 2. Commitment of Moroccan Government to adopt, support, monitor and verify the proposed NAMA.	Project activities will successfully catalyse private sector RESCOs' interest in solar pumping products and market opportunities.
Outcome 3: Financial support and incentive mechanisms identified, designed, and suggested to the MEF for adoption.	1. Assuming a positive perception by banks of this market segment. 2. The Ministry of Finance's endorsement of the modeling approach and its agreement to approve the proposed instruments. 3. Agreement of the Ministry of Agriculture and the Ministry of Finance.	Financial risks
Outcome 4: The capacities of the project’s beneficiaries are strengthened in terms of development, implementation, and management of solar	1. Membership of vocational training organisations. 2. Membership of commercial banks in the project.	Financial risks

pumping and “fertirrigation” systems		

5.1.3. Lessons learned from other relevant projects integrated into the project design

56. GEF-SP project drew on lessons learned from the design exercise of other previous or ongoing projects and programmes (the National Solar Pumping Programme PNPS has not been operationalized although the related agreement was signed in 2013) in particular. To this end, the GEF-SP project was designed to address the shortcomings identified in the PNPS in terms of approach, technological choices, partnerships, etc. In addition, the project was called upon to ensure the coherence of the concept of NAMA (Nationally Appropriate Mitigation Actions) with the objectives of the PNPS developed in the framework of the activities of an earlier project, namely the FIRM (Facilitating Implementation and Readiness for Mitigation) project. It will thus contribute to the creation of the enabling framework for the submission of NAMA to the UNFCCC, its registration and operational implementation.

57. On the other hand, ProDoc suggested establishing a regular exchange with the management unit of a similar project in Sudan whose components are as follows: i) the development of pilot projects as a demonstration of the viability of the technology and an accompanying funding mechanism for continued project funding; ii) the development of standards and guidelines to promote the quality and sustainability of pumping; iii) the development of a NAMA to support solar water pumping; and iv) the development of an enabling environment to encourage scaling up and replication. To this end, ProDoc proposed collaboration between the two projects through regular exchange of operational experience gained in Sudan and potential synergies between the two projects.

5.1.4. Planned stakeholder participation

58. The GEF-SP project has succeeded in bringing together the main institutional, professional, and financial stakeholders in renewable energy and agriculture in Morocco.

59. The table below presents the GEF-SP Project stakeholders, their roles and contributions as specified in the ProDoc.

Table 6 : Roles and responsibilities of stakeholders

INSTITUTIONAL ACTORS	Attributions	Roles and contributions to GEF-SP project
Ministry of Energy, Mines and Environment (MEME)	Accompanying stakeholders in the development of inclusive and sustainable solutions to increase energy efficiency in the main energy consuming sectors.	Ministry in charge of AMEE project implementation agency. - Implementation of the National Solar Pumping Programme (Agreement (ADEREE, MAPM, MEMEE, GCAM, MEF) - Co-financing of the project with its branches (AMEE) to the extent of 41,837,000 USD.
Moroccan Agency for Energy Efficiency (AMEE)/MEME	Accompanying stakeholders in the development of inclusive and sustainable solutions to increase energy efficiency in the main energy consuming sectors. In charge of coordinating, implementing, and monitoring renewable energy (solar, wind, biomass, etc.) and energy efficiency (transport, buildings, industry, agriculture, public lighting) programmes, identifying development areas and potentials for renewable energy, elaborating standards and labels, and providing assistance in research & development. Over the past 30 years ADEREE (formerly CDER) has carried out several nationwide integrated projects for the use of renewable energy, including solar PV (in particular with the installation of the first solar pumps in the 1980s in the	GEF-SP Project Implementing Entity - Implementation of the National Solar Pumping Program (Agreement ADEREE, MAPM, MEMEE, GCAM, MEF)

	framework of its public service missions or public-private partnerships). ADEREE has also been the executing agency for a number of RE and EE projects co-financed by international donors (GEF/UNDP, World Bank, European Union, Agence Française de Développement, etc.). ADEREE is under the supervision of the MEMEE.	
Ministry of Agriculture and Maritime Fisheries, Rural Development, and Forests (MAPMDTEF)	The Department of Agriculture within MAPM is responsible for the elaboration and execution of public agricultural policy, of which irrigation is a key element in view of the growing water scarcity. Among its missions, this department supervises the use of irrigation water resources, conducts studies for the development of agriculture and provides training to farmers. The management of agricultural irrigation is supervised by this Ministry at the central level and by nine regional departments concerned with the public irrigation of large areas (Offices Régionaux de Mise en Valeur Agricole, ORMVA).	Institutional Partner - Implementation of the National Solar Pumping Programme (Convention (ADEREE, MAPM, MEMEE, GCAM, MEF) - Support for the irrigation component of the GEF-SP roject - Contribute to the financing of the GEF-SP project
Ministry of Economy, Finance and Administrative Reform (MEFRA)	In charge, in particular, of financial and monetary issues, including credits and international finance policies.	Institutional Partner - Implementation of the National Solar Pumping Programme (Convention (ADEREE, MAPM, MEMEE, GCAM, MEF) - Adoption of financial support and incentive mechanisms for farmers

Ministry of Foreign Affairs and Cooperation (MAECRME)	It is responsible, among other responsibilities, for implementing Morocco's foreign policy.	Institutional Partner - Member of the GEF-SP CoPil.
Ministry of Equipment, Transport, Logistics, and Water (METLE) / Direction of Water	It develops and implements the government's policy in the water sector.	Institutional partner
National Office of the Agricultural Council (ONCA)	It develops and implements the government's policy in the water sector. Created in 2013, ONCA oversees leading, coordinating and monitoring the implementation of the agricultural advisory strategy at the national level (advice to farmers, support to farmers' organisations, support to other agricultural development actors, training and studies, etc.).	Institutional Partner Training and capacity building: - Training of 61 agricultural advisors (13 women and 48 men) on solar pumping systems - Sensitisation of farmers, agricultural cooperatives and associations, economic interest groups, etc.
INTERNATIONAL PARTNERS	Attributions	Roles and contributions to the GEF-SP project
Global Environment Facility (GEF)	GEF manages a system of funding for environmental conservation actions. In particular, it grants subsidies to projects related to biodiversity, the fight against the effects of global warming and water pollution.	Financial Partner - Co-financing of the project to the extent of 2,639,726 USD
UNDP (Morocco, Rabat)	It supports the Government of Morocco in elaborating its national development strategies and policies; mobilising the government, civil society, the private sector, the PTFs as well as the UNS agencies to implement these strategies and policies, etc.	- Project quality assurance - Monitoring and management of the overall project budget - Monitoring of project implementation, etc. - Co-financing of the project up to USD 100,000
PRIVATE OPERATORS	Attributions	Roles and responsibilities in the GEF-SP project

National Office of the Agricultural Council (AMISOLE)	Most operators are grouped within the Moroccan Association of Solar and Wind Industries (AMISOLE). These operators offer a variety of services ranging from simple equipment supply to technical advice on design and installation. These operators generally offer services and products related to solar pumping systems.	Professional Partner of the project - To promote the interests of Moroccan industrial and professional operators in the renewable energy sector
BANKS	Attributions	Roles and responsibilities in the project GEF-SP
Crédit Agricole Group of Morocco and Tamwil El Fellah (GCAM)	It contributes to the financing of the agricultural sector, for example, to the National Solar Pumping Programme. The Groupe Crédit Agricole du Maroc (GCAM) was created in partnership with the State and the Financing Agricultural Society for Development "Tamwil El Fellah" to provide access to financing for farmers excluded from the traditional banking system. However, the banking sector does not have a specific credit offer for financing solar pumping systems, as banks are not familiar with this emerging market. However, it is expected that, within the framework of the National Solar Pumping Programme, GCAM will offer a credit to partially finance solar pumping systems.	Financial Partners - Implementation of the National Solar Pumping Program (Convention (ADEREE, MAPM, MEMEE, GCAM, MEF) - Co-financing of the project to the extent of 28,966,000 USD
FARMERS	Attributions	Roles and contributions in GEF-SP project

According to ProDoc, nearly 70% of the agricultural fabric is made up of small and medium-sized farms. The vast majority of farmers are economically fragile, which excludes them from the traditional bank' financing scheme. Farmers are relatively aware of the benefits of solar pumping systems but are constrained by the high investment cost of such systems and their difficulties in accessing bank finance.	Farmers are the main stakeholders of the GEF-SP project.	Final beneficiaries of GEF-SP project activities and services

5.1.5. Linkages between the project and other relevant interventions in the sector

60. In the field of solar pumping in Morocco, it is worth mentioning the GIZ project, implemented in 2017: ''GIZ support to the sustainable development of solar pumping in Morocco''. This project could have been an opportunity to develop a partnership of complementarity, harmonisation and coordination with the GEF-SP project.

5.1.6. Gender responsiveness of Project Design

61. A detailed gender analysis was planned by the ProDoc. It's also stated that UNDP gender indicator would be updated annually based on the progress reported in the GEF PIR and the UNDP ROAR (Results Oriented Annual Report).

62. Gender considerations are also mentioned in the project results framework related to gender equality and women's empowerment through their targeting. To this end, women would benefit from: (i) improved energy efficiency and/or sustainable energy solutions, (ii) improved access to sustainable energy platforms, and (iii) capacity building in the development, implementation, and management of solar pumping systems.

5.1.7. Social and Environmental Safeguards

63. Environmental and social risks are identified by the ProDoc. The environmental and social risks are well identified by the PDOC within the framework of Annex F: Review of Environmental and Social Requirements.

64. **The environmental and social risk assessment process has been carried out appropriately and has concluded that the overall risk of GEF-PS project is low. Only risk 2 relating to the generation of waste from the diesel and butane pump systems is rated as moderate. To this end, a project collaboration contract with the Ministry of Environment will be proposed for the establishment of a collection system for the recycling and final disposal of the replaced pumping systems.**

5.2. Project implementation

5.2.1. Adaptive management (changes made to the project design during implementation)

65. ***In response to various implementation constraints, GEF-SP project relied on adjustment mechanisms to respond to changing contexts and improve project implementation. The adaptive management of the GEF-SP project proved particularly useful during the COVID-19 pandemic.***

66. The table below presents the follow-up of the recommendations of the mid-term evaluation (2020).

Table 7 : Recommendations of the mid-term evaluation (2020)

Recommendations	Management response to the recommendations	TE team comments
Project relevance		
Recommendation 1. ***For the follow-up of the project, continue to promote the participatory and inclusive approach.***	The participatory and inclusive approach has been maintained and strengthened in the different activities of the project: training and capacity building with ONCA, MTEDD, AMISOLE, GCAM, the Chambers of Agriculture of Casablanca-Settat and Souss-Massa. Awareness raising actions also involved the Resoverts of Béni Mellal-Khénifra and Fès Meknès. The process of implementing the pilot projects was deployed with the involvement of AMEE's technical teams and the cooperatives involved. The institutional and professional partners concerned (Departments of the Environment, Energy Transition, Industry, AMISOLE, etc.) were involved in the various studies carried out (review and validation).	**The participatory approach was highly appreciated by various institutional, professional, and financial partners who were interviewed during the fieldwork mission.**

Recommendation 2. ***Continue to focus on activities targeting women: awareness raising, training and capacity building for women farmers; capacity building for women agricultural advisors; etc.***	The various activities carried out within the framework of the project have involved women at several levels: - The representation of women within the AMEE teams has been strengthened (training team, technical field teams, communication team and field awareness team); - The rate of women beneficiaries of training has also increased to more than 20%.	**As planned in the ProDoc, a gender analysis was not conducted at the start of GEF-SP project.** This would have allowed the project to better assess the difficulties in implementing the gender approach and to find ways to involve more women farmers in the agricultural cooperatives.
Recommendation 3. ***For a similar project, consider the gender issue in the design by defining objectives, results and activities/actions targeting women from the very beginning.***	This recommendation will be taken into account for future similar projects	**Response well noted.**
Project Effectiveness		
Recommendation 4. ***For the continuation of the project, particular attention should be paid to the implementation of key activities that have not yet been completed, including pilot projects.***	The project completed successfully the implementation of various activities which were not at an advanced stage of implementation at the time of the mid-term evaluation (2020):	**Response well noted.**
Recommendation 5. ***As the crisis of the Coronavirus pandemic has seriously affected the implementation of the project (postponement of activities requiring a presence in the field, delay in the launch of consultations and studies, etc.) and as the project started several months later than planned, consideration should now be given to extending the duration of the project, without additional cost.***	- Pilot projects: this activity has been completed with a completion rate of 140%; - MRV study completed; - Design of the extension tool on fertigation optimization: this activity has been completed with the design and dissemination of the manual on fertigation - Mobilization of local banks: this activity was achieved thanks to the role of AMEE with the banks involved in the field of green energy. - The project was effectively granted an 18-month extension, which allowed for the successful completion of the various project activities.	**Response well noted.**
Project Efficiency		

Recommendation 6. ***For the follow-up of the project, since it is difficult to support solar pumping projects in the absence of subsidies, the subsidies component of the National Solar Pumping Programme should be made operational.***	N/A.	**This is an issue which is beyond the scope of GEF-SP project.**
Recommendation 7. ***For the follow-up of the project, maintain the dynamic of partnership/consultation/synergy between the partners to better perpetuate the project's achievements.***	As outcomes of GEF-SP project, the tools developed are to be adopted by the partners, notably: - The TaqaPro Label, whose management process will be strengthened and made sustainable; - The funding programmes implemented by TMEF-GCAM and other actors (moustatmir al qaraoui, forsa, intilaka) are operational; - The technical requirements and standards are appropriate for the actors concerned (Crédit Agricole, Tamwil El fellah, Industry, ONCA, Regional Directorates of Agriculture etc.); - The 4 RESOVERTs comprising about 100 local companies also ensure the multiplication of good quality practices in the field of solar pumping; - Future programme proposals concerning solar pumping and solar energy in general will be based on the tools developed by GEF-Solar Pumping project.	**See effective stakeholder participation and partnership agreements.**

67. The TE team considers that GEF-SP project management's responses are based on sound arguments, namely: (i) the participatory approach that GEF-SP project has adopted during the implementation of various activities, (ii) effective participation of stakeholders and partnership agreements concluded, (iii) and an optimal implementation timing of the activities carried out after the mid-term evaluation in 2020.

68. Other responses are outside the scope of GEF-SP project's mandate, such as: (i) providing support to farmers for solar pumping projects in the absence of dedicated subsidies (responsibility of the state) and (ii) gender equality and women's empowerment (social collective responsibility).

5.2.2. Effective stakeholders participation and partnership arrangements

69. Overall, stakeholders' engagement has been regular and useful, resulting in partnerships between AMEE and its professional technical and/or financial partners. This section discusses the effective involvement of stakeholders and the partnership arrangements made during the implementation phase of the GEF-SP project.

Table 8 : Stakeholders' participation/ partnerships' agreements

#	Actual stakeholders participation/Partnership	Findings / Comments of TE
1	**How did the project develop and leverage the necessary and relevant partnership with direct and tangential stakeholders**	**GEF-SP project has established the partnerships necessary to develop the solar pumping market in Morocco with several stakeholders, particularly:** - Partnership between AMEE and the Office National du Conseil Agricole (ONCA) has resulted in the training of 61 agricultural advisors (13 women and 48 men) on solar pumping systems and the sensitisation of farmers, agricultural cooperatives and associations, economic interest groups, etc. - Partnership between AMEE and its partners (AMISOLE, Groupe de Crédit Agricole au Maroc and Tamwil El Fellah) was essential for the design and deployment of the TaqaPro - solar pumping label and for the training of DRA executives and technicians, ONCA agricultural advisors and "Resovert" microenterprise technicians on solar pumping, while the partnership with solar energy professionals resulted in the development of technical specifications for the assembly and technical monitoring of solar pumping projects. - Partnership with the 3 regional "Resovert" networks allowed to raise awareness of the "Resovert" micro-

		enterprises and to accompany 60 micro-enterprises and to disseminate the quality standards.
2	**Participation and country-driven processes**	**On the one hand, it is worth noting the active role of the stakeholders in the decision-making process for the effective implementation of the GEF-SP project.** In fact, institutional partners, financial partners, and professionals have participated regularly and actively in the work of CoPil (2017-2022). The regularity of the CoPil meetings, the dynamics and the level of mobilisation contributed to the decision-making process for an effective implementation of the GEF-SP project.
3	**Participation and public awareness:**	**In addition to the training and capacity building benefits, the GEF-SP project has significant communication, awareness raising and visibility benefits.** Examples of awareness raising activities for the general public: - Organisation of 2 local awareness-raising workshops on solar pumping, respectively in Mrirt, province of Khénifra, in collaboration with Resovert BM-KH and in Agadir in collaboration with ONCA; - Media support for the various project activities: awareness-raising workshops, panels, pilot projects, through articles and capsules in several print and digital media; - Sensitisation of partners, in particular financial actors, on the quality aspects of solar pumping projects; and - Media support and awareness-raising through digital platforms. **Limitations of stakeholders' awareness of GEF-SP project activities or its results.** The CoPil meeting of January 26, 2021, rightly recommended media support and awareness raising through digital platforms. **Stakeholders' commitment to the success and long-term sustainability of GEF-SP project through** Stakeholders' support to GEF-SP project objectives in the development of the green economy, in particular the financial actors, notably Crédit Agricole, Tamwil El fellah, whose economic support models have been appreciated by African partners.

4	**Extent of stakeholder interaction:**	**In response to the challenges, particularly the COVID-19 pandemic, stakeholder engagement has been sustained and adapted to a global crisis context.** In fact, GEF-SP project has put in place a process of regular face-to-face and remote consultation with the CoPil members on project activities: pilot projects, organization of training and awareness-raising workshops, labels, monitoring of deliverables.
5	**Gender**	**Ownership of the Gender Equality and Women's Empowerment Action Plan** There is no dedicated action plan for gender equality and women's empowerment. But the GEF-SP project has organized several activities to facilitate gender's mainstreaming objectives**.** **Consultations and involvement of gender equality and women's empowerment** The ProDoc (2016) did not mention any consultations or effective involvement of women's groups, NGOs or public organizations in the preparation of the project document. **Gender stakeholder engagement exercises** As mentioned in several sections of this evaluation report, the GEF-SP project has opted to organize several gender mainstreaming activities. These activities show a significant participation of women (PMU, different institutional, technical and financial partners).

5.2.3. Finance and co-finance of the project

70. At the end of the project, the government's co-financing commitments were maintained. The private sector co-financed up to 19% (5,571,784 USD) of the initial commitment of 28,966,000 USD.

71. According to the ProDoc, the total project budget is USD 73,542,726, with GEF funding of USD 2,639,726 and UNDP funding of USD 100,000 in the form of a grant, and co-financing by the Government of Morocco as follows:
    - Ministry of Agriculture and Maritime Fishing (MAPM): 31,128,000 of which 200,000 USD in- kind.
    - Ministry of Energy, Mines, Environment and Water (MEMEE): USD 3,093,000.
    - Agence de Développement des Énergies Renouvelables et de l'Efficacité (ADEREE): USD 7,616,000 of which USD 400,000 in-kind.
    - Groupe du Crédit Agricole du Maroc (GCAM) and other banks: USD 28,966,000 including USD 100,000 in-kind.

Table 9 : Co-financing Table

Co-financing (type/source)	UNDP financing (US$m)		Government (US$m)		Private Sector (US$m)		Total (US$m)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants	100,000	100,000	41,237,000	62,937,604	28,866,000	5,571,784	70,203,000	67,609,388
In-kind support			600,000	400,533	100,000		700,000	400,533
Totals	100,000	100,000	41,837,000	63,338,137	28,966,000	5,571,784	**70,903,000**	**68,009,921**

Table 10 : Confirmed Sources of Co-Financing at TE Stage

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (US$)
Donor Agency	**GEF**	Grant	2,639,726	2.639.726
Donor Agency	**UNDP**	Grant	100,000	100.000
Recipient Country Gov't	**ADEREE**	Grant		
	ADEREE	In-Kind	400,533	400,533
	MAPM	Grant	62,937,604	62,937,604
	MAPM	In-Kind		
	MEMEE	Grant		
Private Sector	**GCAM & other banks**	Grant (loan)	5,571,784	5,571,784
	GCAM & other banks	In-Kind		
Total Co-Financing				**71,649,647**

5.2.4. Monitoring and evaluation: design at entry (*), implementation (*) and overall assessment (*)

72. ***The analysis of the components of GEF-SP project's M&E framework shows that it is exhaustive in terms of reporting, auditing, and M&E activities. Its main limitation is that it does not track progress towards the achievement of development results (intermediate, final and impact outcomes). The annual review reports, the final report, as well as the mid-term evaluation report provided the intermediate and final effects in terms of energy impact (KWp, environmental CO2 reduction, etc.).***

Design at entry

73. Based on the ProDoc, the components of the M&E system are as follows:

Table 11 : GEF-SP M&E' activities

Type of M&E activities	Responsible Partners	Deadline
Start-up workshop	▪ PMU ▪ UNPD	Within the first two months of project start
Inception report	▪ PMU ▪ PNUD	Immediately after the start-up workshop
PMU/QA meetings UNDP	▪ PMU ▪ UNDP Quality Assurance	Once a month
Monitoring Committee meetings: review of project progress	▪ PMU ▪ PMU ▪ UNDP Quality Assurance	Quarterly
Quarterly reports	▪ PMU	Quarterly
Mid-year and annual reviews	▪ PMU ▪ PMU ▪ UNDP Quality Assurance	Mid-year review in May/June
PRA and PIR	▪ PMU ▪ UNDP	Annual review in October / November each year
Annual reports	▪ PMU	Annually
Steering Committee meetings	▪ ADEREE ▪ UNDP	Annually
Mid-term evaluation	▪ PMU ▪ UNDP ▪ Independent consultants	Twice a year
Terminal evaluation	▪ PMU ▪ UNDP ▪ Independent consultants	Between the 2nd and 3rd RIP
Final project report	▪ PMU	At least three months before operational closure
Audit	▪ PMU ▪ UNDP	As required. GEF will only accept reports in English
HACT micro-evaluation	▪ PMU ▪ UNDP	At least three months before the end of the project
HACT spot check missions	▪ PMU ▪ UNDP	Annually
Site visits	▪ UNDP ▪ Government representatives within the Steering Committee	Once only
Project closing workshop	▪ PMU ▪ UNDP	Once a year

Source: ProDoc, page: 70-71.

74. The table reviews the design of GEF-SP project's M&E system at entry.[3]

Table 12 : The design of GEF-SP project's M&E system at entry

The design of the GEF-SP project's M&E system at entry	Findings and TE comments
Was the M&E plan well conceived, practical and sufficient at the point of its endorsement?	The ProDoc foresees the M&E framework of GEF-SP project for monitoring and reporting on the implementation and mid-term and terminal evaluations (see table above).
Was it articulated sufficiently to monitor results and track progress toward achieving objectives?	As designed, the M&E framework does not track progress towards the achievement of the GEF-SP project outcomes (intermediate, final and impact).
Did the M&E plan include a baseline, SMART indicators and data analysis systems,and evaluation studies at specific times to assess results?	The ProDoc envisages an M&E plan that defines M&E activities, responsibilities, budget, and timeline.
Were baseline conditions, methodology, logistics, time frames, and roles and responsibilities well articulated?	As mentioned above, the ProDoc has clearly defined roles and responsibilities, and timeframes (timetable).
Was the M&E budget in the project's document sufficient?	This rate is considered sufficient and was allocated to the start-up and closing workshops (USD 20,000), four audits of USD 5,000 (for a total of USD 20,000), the mid-term evaluation (USD 20,000) and the terminal evaluation (USD 40,000).

75. Analysis of the components of the GEF-SP project's M&E framework shows that it is comprehensive in terms of reporting, auditing and M&E activities. Its main limitation is that it does not track progress toward the achievement of development results (intermediate, final, and impact outcomes).

M&E implementation

76. Field monitoring and coordination efforts undertaken by the PMU exist, but the M&E framework has not been effectively put in place and used by the PMU and the CoPil. On the one hand, the PMU and UNDP have missed the opportunity to transform the M&E framework envisioned by the ProDoc by: (i) establishing a true results-based M&E mechanism within AMEE, (ii) providing for a specific internal M&E structure, and (iii) training resource staff in M&E and management for development results (MfDR). On the other hand, the use of implementation M&E data has not been optimal,

[3] Cf. guidance, pages: 46-48.

particularly as a decision support tool to: (i) improve project management, (ii) ensure timely refocusing, (iii) address constraints, and (iv) find evidence-based responses to reported risks.

77. The table below reviews the project's M&E implementation.

Table 13 : Findings and comments of the TE on the implementation of the M&E framework of the project

M&E implementation system	Findings and TE comments
Was the M&E plan sufficiently budgeted and funded during project preparation andimplementation?	The M&E budget of USD 100,000 represents almost 4.2% of the total project cost. This is estimated to be sufficient and was allocated to: the start-up and closing workshops (USD 20,000), four audits of USD 5,000 (for a total of USD 20,000), the mid-term evaluation (USD 20,000) and the terminal evaluation (USD 40,000).
Was data on specified indicators, relevant GEF/LDCF/SCCF Tracking Tools/Core Indicators gathered in a systematic manner?	The data on the indicators specified in the CRS were collected and used in the annual reports, GEF reports (PIR), mid-year and biannual review documents.
Extent of compliance with progress and financial reporting requirements, including quality and timeliness of reports;	The monitoring reports (annual reports and IRPs) and the annual and mid-year reviews track the progress of implementation and are prepared in accordance with the periodic deadlines.
Value and effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff;	The content of these reports is usually presented and discussed at the mid-year and annual review meetings and the CoPil.
Extent to which the GEF OFP has been updated on monitoring and evaluation activities.	The ProDoc has planned for the involvement of GEF PFO in the M&E activities of the project.
Extent to which the GEF OFP was kept informed of M&E activities; and extent to which the Project Team used inclusive, innovative, and participatory monitoring systems	The CoPil and PMU have not built on the M&E framework to be inclusive, innovative and participatory.
Extent to which information provided by the M&E system was used to improve andadapt project performance;	The information provided by GEF-SP project's reporting was used to improve and adjust the project's performance.

Whether the M&E system included proper training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure	The GEF-SP project did not organize any training on M&E or results-based management (RBM) for the staff responsible for M&E activities to improve the implementation of project activities. UNDP regularly organized training on RBM for project PMUs, in which the PMU of GEF- SP project participated.
How were perspectives of women and men involved and affected by the project monitored and assessed? How were relevant groups' (including women, children, elderly, disabled, and poor) involvement with the project and theimpact on them monitored?	The gender indicators have been completed and their analysis shows that women's participation is still limited because of cultural and social reasons.
Was there adequate monitoring of environmental and social risks as identified through the UNDP SESP and in line with any safeguards management plan's M&E section?	The ProDoc presented the review of environmental and social requirements (SESP); although the monitoring was not carried out by the PMU. The monitoring of environmental and social aspects was taken into account by the PMU, in particular during the COVID 19 pandemic and during the implementation of the Pilot projects (see thematic progress reports and annual reports)
Whether the projects' Theory of Change was reviewed and refined during implementation	The ProDoc did not originally design the theory of change of GEF-SP project. However, the evaluation mission reconstituted the project's theory of change a posteriori.
Extent of the Project Board's role in M&E activities	The CoPil has no specific role in the M&E activities of GEF-SP project.

Overall assessment of M&E

78. Despite some limitations, the overall assessment of monitoring and evaluation is satisfactory.

Table 14 : Overall assessment of M&E

Monitoring and evaluation (S&E)	Rating
M&E design at entry	Satisfactory (S)
M&E Plan Implementation	Satisfactory (S)
Overall Quality of M&E	**Satisfactory (S)**

5.2.5. UNDP implementation/oversight (*), Implementing Partner execution (*) and overall assessment of implementation/oversight and execution (*)

AMEE, the implementation partner of GEF-SP project

79. As confirmed by the institutional, professional, and financial partners of the GEF-SP project, the execution of the AMEE has been exemplary, both in its implementation of the GEF-SP project activities and in the adequate and continuous accompaniment of the final beneficiaries (agricultural cooperatives).

80. AMEE is the Implementing Agency of the GEF-SP project. It is responsible for the planning and implementation of the project's outputs and activities, in accordance with the approved action plans.

81. To that end and as planned in the ProDoc, a Project Management Unit (PMU) was set up within AMEE) whose main mission was to manage the implementation of the GEF-Solar Pumping Project under the supervision of the National Project Director.

82. The PMU was responsible for the day-to-day monitoring of the various project activities and outputs, in terms of planning (AWP and Procurement Plan), coordination between AMEE and the various partners involved for each activity, reporting, organization of CoPil meetings, monitoring committees and internal planning meetings.

Box 2 : AMEE, a major partner in energy efficiency

The Moroccan Efficiency Agency AMEE is the result of the transformation, in 2016, of the National Agency for the Development of Renewable Energy and Energy Efficiency ADEREE, which was created in 2010, from the Centre for the Development of Renewable Energy CDER, created in 1982.

Over the past 30 years, AMEE has carried out several nationwide integrated projects in favour of renewable energy use, including solar PV (in particular with the installation of the first solar pumps in the 1980s as part of its public service missions or public-private partnerships). ADEREE has also been the executing agency for a number of RE and EE projects co-financed by international donors (GEF/UNDP, World Bank, European Union, Agence Française de Développement, etc.).

83. Regarding the implementation of the Executing Partner, the following table shows the daily activities of the project under the overall supervision of UNDP.

Table 15 : Implementation status of GEF-SP by AMEE

Activities	Review of the implementation state of the Project by AMEE
Appropriate focus on results and timeliness	**The process was initiated to achieve the outputs and activities of the GEF-SP project.** Overall, the results are quite satisfactory, despite the constraints mentioned in the project reporting, particularly: (i) the non-operation of the PNPS, (ii) the level of managerial capacity of agricultural cooperatives and associations, and (iii) the COVID-19 pandemic. Some delays in the implementation of certain activities are noted by the TE. However, the project team was able to respond appropriately.
Appropriate use of funds, procurement and contracting of goods and services	The management of the project was carried out according to procedures based on transparency and competitive bidding for the services provided and purchases in strict compliance with the regulations in force (public procurement decree).
Quality of risk management	The risks were reported in the regular project reporting and were managed in a controlled manner. These risks were discussed, in particular in the framework of the CoPil meetings.
Candor and realism in annual reporting	Annual reports and review reports reflect the true picture of progress, constraints, and risks.
Adequate oversight of the management of environmental and social risks asidentified through the UNDP SESP.	The formulation of the ProDoc took into account social and environmental standards of the UNDP, considering the major potential risks. Physical security requirements were introduced in the terms of reference for the pilot projects.

UNDP implementation/oversight

84. In summary, UNDP provided: (i) regular monitoring of the PMU and regular field visits to accompany and supervise the project activities and results; (ii) support to the PMU in the pre-examination of the annual work plans and related budgets, quality control by providing and sharing AAAs and CDRs with the national partner and their co-validation; (iii) review of the ToRs elaborated by the PMU and validation of the project's deliverables and products; (iv) monitoring the progress of the project and providing guidance at CoPil meetings, mid-year and annual reviews to address constraints and strengthen national ownership; (v) drafting the PIR each year to assess risks, achievement or non-achievement of target objectives and annual achievements, and providing feedback to the PMU on risk management and implementation of CoPil recommendations, reviews, mid-term evaluation (2020) and terminal evaluation (2022).

85. In accordance with the terms of the Letter of Agreement signed on 14 October 2015 and the Project Document "Promotion of the Development of Photovoltaic Pumping Systems for Nationally Managed Irrigation - Project ID:00096531", the UNDP country office will provide support services for the implementation of GEF-SP project.

86. Day-to-day operational supervision is provided by UNDP through its office in Rabat. UNDP/GEF Regional Technical Advisor provided a strategic oversight and guidance.

87. With regards to UNDP supervision, the table below details the activities related to project identification, concept preparation, appraisal, preparation of the detailed proposal, approval and start-up, monitoring, supervision, completion, and evaluation.

Table 16 : Findings and comments of the TE on the support of UNDP

Activities	UNDP Support
Adequacy, quality and timeliness of UNDP support to the implementing partner and project team	UNDP support was provided in order to strengthen national ownership and accompany AMEE to achieve results. UNDP supported the creation of synergies and complementarities with the PMF-GEF and the Accelrator programme.
Transparency and realism in annual reporting	The financial reports (CDRs) prepared are accurate and do not raise any comments, in addition to the AAAs submitted, which give details of financial monitoring on an atlas. The review templates have been much improved to guide the PMU in presenting the state of advancement in relation to the indicators and targets set out in the ProDoc.
Quality of risk management	UNDP advocated for proactive management by the national partner during CoPil meetings and reviews.
Responsiveness to significant implementation issues	UNDP has been reactive in its interventions to address issues while trying to strengthen national ownership.
Adequate oversight of environmental and social risk management as identified by UNDP SESP.	This activity is monitored regularly, particularly in the context of CoPil meetings. Recommendations are issued or reiterated (e.g. gender mainstreaming in the project).

UNPD implementation/ oversight and implementing partner	Notation
Quality of UNDP Implementation/Oversight	Satisfactory (S)
Quality of Implementing Partner Execution	Satisfactory (S)
Overall quality of Implementation/Oversight and Execution	Satisfactory **(S)**

5.2.6. Risk Management, including Environmental and social standards (protective measures)

88. Overall, risks were monitored, complemented and reported during the implementation of GEF-SP project. The table below shows how these risks were managed by the project team and the CoPil.

Table 17 : Risk management state of GEF-SP project at the closure of the project

Risk management issues	PMU Response
Risks related to the project implementation	
Were new risks or changes to existing risks reported on in the annual PIRs and/MTR? **Was the project risk 'register properly maintained during the implementation?**	**The risks identified by the ProDoc were regularly updated during the implementation of GEF-SP project.** In fact, the risk register was regularly kept, presented and discussed during the mid-year and annual project reviews and presented and discussed during the annual CoPil meetings. This register was also updated as the project progressed (cf. annual reports, annual and mid-year review presentations, and CoPil presentations.
How did those risks affect project implementation?	**Three types of risks/constraints were identified during implementation, namely:** - Constraints related to the non-operation of the National Solar Pumping Programme (PNPS); - Constraints related to the managerial capacities of agricultural cooperatives and associations; and - Constraints related to the COVID-19 pandemic. According to the final report of the GEF-SP project (2022), these risks did not affect the implementation of project activities, apart from the COVID-19 pandemic, which caused an additional delay of 6 to 8 months for the completion of the PRV and PDI, and the launching of the pilot projects
What systems and tools were used to identify, prioritize, monitor and manage those risks?	**Risk management matrices were developed, discussed and maintained in collaboration with the UNDP project manager.**
Did the Project Team keep the Project Board informed of new risks, changes to existing risksand the escalation of risks?	**The CoPil was regularly informed of new risks to which the GEF-SP project might be exposed.** In addition, the PMU of GEF-SP project ensured regular consultation with the UNDP country office on new risks, particularly COVID-19. Bilateral consultations with the Departments of Agriculture and Environment, ONCA, AMISOLE, etc., during the planning phases of the project activities (training, studies, field awareness).
Did the Project Team keep the Project Board informed of new risks, changes to existing risksand the escalation of risks?	**Recurrent risks have been reported in various project documents** (annual reports, CoPil meetings, project review presentations) and have been managed in an integrated and anticipated manner.
Were action plans developed and followed? Was escalation necessary?	**The risk management matrices** were used as a basis for monitoring risks.
Were any risks overlooked and what were the consequences of that?	
Environmental and Social Norms (safeguards measures)	

What safeguards measures have been taken by the project with regard to environmental and social norms?	**Physical security requirements** have been introduced in the specifications for the pilot projects.
COVID-19	
What new risks were identified during implementation?	**Adaptations to the implementation programme** have been made to cope with the COVID-19 pandemic (2020-2021).

89. Overall, risk management was conducted in a controlled manner by the PMU. For some risks, particularly political and institutional, they proved to be beyond the reach of the project team and/or the CoPil.

90. For example, the risk related to the non-operationalization of the PNPS, subject of the Convention signed in 2013, has caused a lower level of impact of the GEF-SP project, particularly for the following activities:

> **Activity 1.1**: More than 3,750 small-scale PV pumps off-grid being installed in a wide range of geographical locations, and facilitated through configuration, implementation and maintenance protocols, and **Activity 1.3**: A final disposal and recycling scheme is being studied and a programme contract with the Ministry in charge of the Environment is being proposed to reduce leakage effects of GHG emission reductions associated with the project (**Output 1**).
>
> **Activity 2.1** A Renewable Energy Services Company (RESCO) model is designed and implemented to support the implementation of the National Solar Pumping for Irrigation Programme, and **Activity 2.4**: A NAMA concept is updated and operationalized to support the PV pump installation programme (**Output 2**).
>
> **Activity 3.3** Options for better alignment of fertilizer subsidies with sustainable drip irrigation practices are analysed and proposed to the Ministry of Agriculture and the Ministry of Economy and Finance (**Output 3**).

91. Thus, the non-operation of the PNPS has prevented the establishment of a national structuring framework that would have allowed the generalization of accompanying measures, particularly at the technical level (specifications, standards, and labels, etc.).

Social and environmental safeguards at the design phase

92. The project document states that the project carried out a full environmental and social review during the PPG phase, which was included in Part III. Based on a review of the agenda and the narrative of the Inception Workshop report, the environmental and social screening report was not revisited during the inception phase, in compliance with best practice at the project initiation and planning stage.

93. The SESP has classified the overall risk profile of the Project as "Moderate", meaning that limited social and environmental assessment and review may be required to determine how the potential impacts identified in the preliminary assessment will be avoided or, where avoidance is not possible, minimized, mitigated, and managed.

94. An SESP checklist was undertaken during the PPG, covering the following 3 principles: (i) human rights; (ii) gender equality and women's empowerment; and (iii) environmental sustainability, which includes 2 of the 3 sub-standards, namely biodiversity and sustainable natural resource

management, and climate change mitigation and adaptation. In total, 8 risks were reported in the assessment. According to the TE team, in line with best practices, these risks would be reviewed periodically during the implementation.

6. PROJECT RESULTS AND IMPACTS

6.1. Progress made towards achieving expected results

95. GEF-SP project has achieved the vast majority of the target values of outputs listed in the results framework. The number of people trained has generally been exceeded.

96. ***Through the various products implemented, the GEF-SP project has significantly contributed to the main objectives, namely: (i) the creation of a quality market through an equipment standardized system, operator accreditation, installer training and equipment labelling; (ii) the strengthening of institutional and stakeholder capacities for the development and management of solar pumping projects for irrigation; (iii) the strengthening of local production capacity for photovoltaic pumping components: technological mastery and job creation; and (iv) Establishment of a monitoring framework in terms of energy performance and greenhouse gas emission reduction.***

97. The table below presents the achievements of the GEF-SP project at its closure (June 2022). In addition to updating the target value for each indicator, this table also provides an update on the achievement of outputs and their rate of attainment.

Table 18 : Status of the GEF-SP project achievements at its closure (April 2022)

Indicator	Baseline	Target at the end of the project	Status of output achievement	Achievement rate
Output 1. PV pumping units consisting of a range of configurations are designed, evaluated, installed, and being implemented				
Cumulative power of installed solar pumps in kW	9.560 kW	23.900 kW	The cumulative number of indirectly supported projects: 13163 kWp, for the period 2018-June 2020, and a partial figure of 10085.5 kWp for the period July 2020-January 2022, i.e. a total of 23221.5 kWp equivalent to 97% of the project target (2809 projects).	97,1%
			As the national subsidy programme is not operational, the GEF-Solar Pumping project carried out traceability approaches for some of the solar pumping market during the period 2020-January 2022, through surveys of the Resoverts and AMISOLE companies trained and supported by the project, as well as the Crédit Agricole and	

			Tamwil El Fellah which finance projects.	
Number of large demonstration solar pumps installed.	0	10	54 projects examined 20 projects selected 16 conventions signed between AMEE and the beneficiaries for the realization of demonstration projects. 14 projects achieved. The pilot projects are carried out on the basis of an implementation model combining technical, quality and installation label aspects.	140%
Availability of MRV system.	Lack of procedures and systems for monitoring and evaluating emissions and program impacts.	MRV system designed and implemented to reliably monitor project progress and GHG emission reductions.	In support of the MRV system, a computerized remote monitoring tool for real-time monitoring of energy performance and gains in terms of CO2 avoided has been designed.	100%
Output 2. A sustainable implementation framework and standards for solar pumping and drip fertigation practices are developed.				
Number of RESCOs established	0	5	4 regional networks comprising 80 specialised small enterprises structured and supported (including 10 small new enterprises created on 5 targets).	200%
Availability of procedures for standardisation and labelling of equipment.	Lack of standardisation and labelling procedures for the main solar pumping components.	Standardisation and labelling procedures are adopted, tested, and implemented and operational for the main solar pumping components.	Creation by AMEE, the Solar Cluster and AMISOLE of the Taqapro-Solar Pumping Label. Labelling of 63 companies specialised in solar pumping. Adoption in 2020 of 19 solar photovoltaic norms. Development and dissemination of a manual on minimal technical requirements based on the relevant normative reference.	100%
Availability of a system for auditing and evaluation of the quality of installations.	Lack of control of PV pumping systems.	A system for auditing and evaluation of the quality of installations is established	A quality referential for equipment, systems and services related to PPV has been developed and shared with relevant partners. Upgrading of the AMEE PV simulator for quality assessment of solar modules.	100%
Availability of a tool for informing farmers about the optimal fertiliser dosage in localised irrigation and for	farmers' lack of information about optimal fertigation management	A tool providing information on the optimal fertiliser dosage in localised irrigation and calculating cost savings	A technical information manual on the optimal fertilizer dosing in localized irrigation and calculation of cost savings for farmers has	100%

calculating cost savings.	and its financial benefits	for farmers is designed and operational	been prepared in Arabic and French.	
Availability of an updated NAMA concept to support the PV pumping installation programme.	Lack of an updated NAMA concept to support the national solar pumping programme.	The NAMA concept updated and validated for submission to the UNFCCC NAMA register.	The NAMA solar pumping document has been updated.	100%
Output 3. Financial support and incentive mechanisms are identified, designed and proposed in collaboration with MEF for implementation				
Number of banks involved in the program.	0	4 local private banks fully involved in financing the program.	Several local banks are involved in financing renewable energy and energy efficiency projects (solar roofs, solar pumping): Bank of Africa, Crédit Agricole, Tamwil El Fellaf, Attijari Wafabank, Banque Populaire.	100%
Availability of fiscal incentives for solar pumping.	Lack of fiscal incentives for solar pumping.	Relevant tax incentives/instruments designed in collaboration with the Ministry of Finance for adoption	VAT exemptions for solar pumps from 2019 and 2020 have been adopted. VAT exemptions for solar panels have occurred in 2020 and 2021 (without deduction), proposal for 2022 with a right of deduction.	100%
Availability of an analysis of options for aligning subsidies to sustainable fertigation practices in drip irrigation practices.	Lack of alignment options	Options for aligning fertilizer subsidies with sustainable drip irrigation practices are examined	The technical information manual on fertigation includes a model for calculating savings. The national subsidy program for solar pumps is not yet operational.	100%
Output 4. Beneficiaries' capacities are strengthened in the development, implementation and and management of solar pumping and drip irrigation systems				
Number of beneficiaries whose technical capacity is strengthened in PV technology, maintenance, and marketing.	0	400 beneficiaries	580	145%
Number of technicians (women and men) specialised in the design, installation, operation, and maintenance of solar pumping systems.	0	30 Technicians	100	333%
Number of finance professionals whose capacity to evaluate solar pumping projects is strengthened (women and men).	0	40 Professionals	44	110%
Number of stakeholders whose capacities are strengthened in terms of	0	160 Beneficiaries	320	200%

optimal control of fertigation practices (farmers, water users' associations, regional agricultural development agencies, RESCO and banks).				

6.2. Relevance (*)

GEF-SP project's consideration of the needs of the final beneficiaries (farmers)

98. ***GEF-SP project has taken into account the needs of the final beneficiaries through the sensitization of farmers on the benefits of solar pumping. This process is highly appreciated by the different stakeholders of the GEF-SP project. The dialogue and consultation with the local population was, particularly highlighted by several interlocutors as a good initiative of the GEF-SP project.***

99. According to the ProDoc, the final beneficiaries of the GEF-SP project are "the holders of small and medium-sized farms, the vast majority of which are characterized by their economic fragility, which excludes them from the traditional bank financing scheme. Farmers are relatively aware of the benefits of solar pumping systems but are constrained by the high investment cost of such systems and by their difficulties in accessing bank financing».[4]

Box 3 : Farmers' Interest in the GEF-SP Project

"I can therefore say that these awareness sessions have a positive impact on the use of solar energy in agriculture".

"The comparative advantages of solar pumping compared to the use of the butane are very positive, namely: return of the invested money in less than 24 months, productivity, security, etc.".

"A dozen farmers who have benefited from CAP training have adopted this method of solar pumping in their farms, we count more than 800ha of solar in the region and the demand is still strong, especially with the training and awareness-raising provided by ONCA advisors".

Source: Stakeholders' interviews, July - August 2022.

100. To that end, several workshops were organized by the GEF-SP project through information and awareness raising workshops in different regions of the Kingdom on solar pumping in the agriculture sector for the benefit of regional and local actors.

101. Several awareness-raising and popularization video clips and reports have been produced within the framework of the GEF-SP project, notably on (i) renewable energies in agriculture (in collaboration with the Regional Chamber of Agriculture of Souss Massa), (ii) five video reports on pilot projects, (iii) several capsules related to the participation of AMEE in SIAM, Solar Expo, Pollutec, etc.

102. As noted during the evaluation mission's field interviews, the numerous and varied awareness-raising and training activities were widely appreciated by farmers for covering: (i) the comparative advantages of solar pumping and (ii) good practices and requirements related to drip and fertigation projects.

[4] ProDoc, page: 18.

Adequacy of the GEF-SP project with the positive assessment of the New Development Model (NMD) on solar pumping in Morocco

103. To that end, it is worth recalling the recommendation of the Special Commission on the development model: "While insisting on the rapid conversion of Moroccan agriculture in favor of crops that are resilient to climatic hazards and generate high added value, the Commission stresses the importance of providing substantive responses to the structural constraints of Moroccan agriculture, by placing the issue of sustainability and valorization at the heart of the agricultural strategy, through i) the optimization of water resources, by favoring the extension of irrigated areas to crops that ensure national food security, and by ensuring that export crops make the most of water, taking into account its direct and indirect cost for the State and the community; and ii) the rationalization of agricultural energy consumption, by increasing the penetration rate of renewable energy in the agricultural sector, through the extension of the use of solar energy techniques in water pumping"»[5].

Alignment of the GEF-SP project with global and sectoral strategies for the environment and sustainable development in Morocco

The National Sustainable Development Strategy

104. The GEF-SP project is well in line with the national priorities in terms of environment and sustainable development in Morocco, more particularly with the strategic axis 5 of the SNDD.

105. Indeed, the GEF-SP is fully in line with the objectives of the National Strategy for Sustainable Development (NSSD) 2030. The project supports the CNEDD targeting specific objectives: (i) 22: improve the valorization of water for agricultural use and rationalize water consumption, 23: (ii) accelerate the energy transition and improve the penetration rate of renewable energies, (iii) 26: innovate to develop sustainable agriculture and the specific objective and (iv) 29: improve the resilience of the agricultural sector to the impacts of climate change of the strategic axis 1: "Reconciling the modernization of the agricultural sector with the requirements of sustainable development" of the project of SNDD.

106. The GEF-SP project is also in line with the specific objectives: (i) 44: accelerate the penetration rate of renewable energies to reach 42% by 2020 and 52% by 2030, and (ii) 46: develop the market for energy efficient equipment, and (iii) 48: develop adequate financial instruments for the implementation of energy efficiency programs of the Strategic Axis 5 "Accelerate the implementation of the energy transition" of the SNDD

Morocco's energy development priorities

107. The GEF-SP project is perfectly in line with energy development, particularly the National Energy Efficiency Strategy to 2030 (SEEN). This strategy reinforces the security of supply and availability of energy, widespread access to energy at reasonable prices, demand management and environmental preservation.

[5] Kingdom of Morocco, Special Commission on the Development Model. General Report. *Liberating energies and restoring confidence to accelerate the progress and prosperity for all*, April 2021, page: 141.

108. In the long term, the publication of this strategy confirms the relevance of the GEF-SP project, particularly through measure 48, which recommends: "The establishment of a National Program for the Development of Solar Pumping on Farms. This measure aims to encourage farmers to equip their farms with solar pumping installations. The measure targets the installation of 20,000 solar pumps. It will have an impact on energy saving linked to the reduction of fuel consumption of traditional pumping, i.e. 260 KTEP by 2030".

National Solar Water Pumping Programme for Irrigation (PNEEi)

109. As stated in the ProDoc, the GEF-SP project was designed and launched to provide tailored support to the National Solar Pumping Irrigation Programme. Originally, the objective of the PNEEI was to promote water saving through equipping farms with localized irrigation systems through the development of institutional, technical, and financial tools to support the installation of solar pumps in the agricultural sector.

National Renewable Energy Development Strategy (SNDER)

110. By promoting farmers' access to photovoltaic pumping systems, the GEF-SP project also contributes to the priority objectives of the national strategy for the development of renewable energy in Morocco, whose main objectives are: (i) the use of sustainable energy sources and the industrial integration of clean technologies, and (ii) the creation of green jobs.

Morocco Green Plan Maroc (PMV)

111. Adopted by Morocco in 2008, the Green Morocco Plan (PMV) aims to make agriculture a pillar of the Moroccan economy, with a focus on increasing the production level of certain crops (olives, citrus, fruit). The PMV seeks to increase the efficiency of agricultural water use through the improvement of irrigation infrastructure and the adoption of best practices, but also by favouring crops with high demand and low water requirements.

Alignment of the GEF-SP project with Morocco's international commitments

112. Morocco ratified the United Nations Framework Convention on Climate Change (UNFCCC) in December 1995 and the Kyoto Protocol in 2002. Morocco ratified the United Nations Framework Convention on Climate Change (UNFCCC) in December 1995 and the Kyoto Protocol in 2002 and is thus committed to the global process of combating global warming by limiting greenhouse gas emissions and implementing adaptation and mitigation strategies consistent with its sustainable development policy.

113. To that end, Morocco is committed to reduce its GHG emissions by 42% by 2030. The updated Nationally Determined Contribution (NDC), submitted on 22 June 2021, reinforces its 2030 target, improving it in two ways. The unconditional and conditional 2030 emission reduction targets have been revised from 17% to 18.3% below the BAU scenario for the unconditional target and from 42% to 45.5% for the conditional target. Morocco has also lowered the BAU scenario, to which the

reduction targets are applied. For the unconditional target, 21% reduction in emissions (excluding LULUCF) in 2030, compared to the first NDC submission, and 29% for the conditional target.[6]

Alignment of GEF-SP project objectives with GEF strategic priorities (including alignment of relevant focal area indicators

114. The GEF-PS project is consistent with GEF policy. According to the ProDoc, this project is "aligned with the GEF policy and strategic focal area on climate change and specifically with objective 3 on promoting investment in renewable energy technologies. A key element of the GEF's climate change strategy has always been to finance renewable energy technologies and to support the removal of barriers to the adoption of these technologies[7].

Adequacy of GEF-SP project objectives and conception with the UNDAF/UNDP and SDGs

Regarding the UNDAF (2017-2021)

115. The GEF-SP project is in line with the UNDAF (United Nations Development Assistance Framework), 2017-2021 and will thus contribute to:
    - Outcome 2: ''Sustainable development'': Public policies and national strategies for industrial development, environment and land use integrate the principles of inclusive and sustainable economic growth and development); and
    - Outcome 6: 'Integrated and sustainable rural development': National actors implement inclusive, integrated and sustainable rural development.

116. It should be noted that the GEF-SP project is also in line with UNDAF Outcome 5 related to the environment and sustainable development of the Joint Action Plan for the period (2012-2016), of which the main objective is to intensify cooperation with Morocco in order to mitigate GHG emissions and integrate climate change into national strategies, including those relating to agriculture, water and energy.

Concerning the UNDP country program

117. The UNDP aims to support the country's transition to renewable energy sources and help Morocco meet emission reduction targets, particularly by scaling up the use of appropriate technologies in all key economic sectors, including agriculture, transport, logistics and construction. UNDP says that special emphasis will be placed on Morocco's solar resources, which are among the largest in the world.

118. The GEF-SP project is in line with the UNDP Strategic Plan 2017-2021:
    - Outcome 1: Growth and development are inclusive and sustainable, generating the productive capacities needed to create jobs and livelihoods for the poor and excluded.

CPD (Country Program Document), 2017-2021

119. The GEF-SP project is in line with axes 2 and 3 of the CPD (2017-2021):

[6] Source: https://climateactiontracker.org/climate-target-update-tracker/morocco/

[7] [7] ProDoc, page : 44.

- Axis 2: Inclusive and sustainable growth, decent work and food security;
- Axis 3: Resilience to the effects of climate change, natural disasters, and humanitarian emergencies.

On the sustainable development goals (SDGs)

120. The GEF-SP project is in line with the SDGs:
- SDG 2: End hunger, achieve food security and promote sustainable agriculture;
- SDG 7: Affordable, reliable, sustainable and modern energy for all;
- SDG 13: Combat climate change and its impacts; and
- SDG 15: Protect and sustainably use the Earth's ecosystems.

Table 19 : Sub criteria rating

Sub-criteria	Rating
The GEF-SP project takes into account the needs of the final beneficiaries (farmers)	Satisfactory (VS)
Alignment of the GEF-SP project with the overall and sectorial strategies for environment and sustainable development in Morocco	Highly satisfactory (VS)
Level of alignment between GEF-SP project objectives and GEF strategic priorities (including alignment of relevant focal area indicators) l'UNDAF et le CPD	Highly satisfactory (VS)
Relevance	Highly satisfactory (VS)

6.3. Effectiveness (*)

121. ***Through the activities and products carried out, the GEF-SS project has contributed, in varying degrees, to three types of results: individual, organizational, and institutional.***

122. **First, at the individual level**, results related to capacity building activities, technical training, awareness raising on the development, implementation and management of solar pumping and irrigation systems (output 4). The scope of these outputs corresponds to the expected impacts of these initiatives. These include the strengthening of institutional and professional capacities of different beneficiaries: (i) local technical capacities in solar pumping technology, (ii) financing capacities, (iii) capacities in the application of fertirrigation practices, (iv) design capacities in the installation, operation and maintenance of photovoltaic pumping systems, etc.

123. **Secondly, results at the organizational level,** such as: (i) the model for accompanying pilot projects, (ii) the design of different technical and economic studies, (iii) quality reference systems, (iv) the contractual agreement between the project owner and the service provider, based on commitments in terms of quality assurance and after-sales service, (iv) the design and deployment of the TaqaPro label, (v) good practices and requirements related to the rational use of water resources, etc.

124. **Finally, results at institutional level,** including: (i) the monitoring framework in terms of energy performance and reduction of greenhouse gas emissions, (ii) the joint ministerial decree n° 927-20 of 06 March 2020 concerning the quality system for solar photovoltaic equipment (PV modules, PV systems batteries, converters), (iii) incentives in terms of VAT exemption for imported solar PV panels, pumps, solar cells, updated NAMA for solar pumping, which serves as a basis for mobilizing climate finance, etc**.**

125. The following table presents the main outputs and results of the GEF-SP project.

Table 20 : . Keys results commented

	Considered Factors	Findings and comments of the TE
1.	Contribution of the project to the country programme outcomes and outputs, SDGs, UNDP strategic plan, GEF strategic priorities and national development priorities	
A.	Main contributions to different outcomes and outputs (UNDAF, SDGs, UNDP, GEF, national priorities)	A few deliverables are identified as contributing to outputs and outcomes (UNDAF, UNDP, GEF and GEF), namely: (i) the Business model study, (ii) a quality reference framework, (III), the deliverable of the study 6 of labelling and, (iv) the PVs. Apart from 2018 annual review, updated data on this point is not available for the annual reviews of the following years (2019, 2020 and 2021).

2.	Actual results and outputs of the GEF-SP project/ Proportional to what was planned.	
A.	Effectiveness of results and outputs achieved	In accordance with section 6.1. above, the GEF-SP project achieved the large majority of the target figures of the outputs listed in its results framework. The number of individuals trained has generally been exceeded. Outputs have been variably achieved, and are commensurate with the resources invested, thanks to the effective management of the Project Management
3.	Areas of achievement and factors that contributed to the achievements of the GEF-SP project.	
A.	Areas of achievement in terms of importance	Two outputs were decisive in achieving the immediate and intermediate impacts of the GEF-SP project, namely outputs 1 and 4, respectively dedicated to the installation of PV pumping units and capacity building of the various stakeholders involved in the project. It should be noted that 60% of the project's financial resources were allocated to these two outputs.
B.	Main factors that favored and/or obstructed the project's achievements	The main problems in the implementation of the GEF-SP project were related to: *(i) the project design, (ii) the delay in the launch of the project (operational in 2018 instead of 1 October 2017), (iii) the delay in the installation of the pilot projects due to the PNPS subsidies issue, and,(iv) the COVID-19 pandemic delayed the implementation of several activities: (a) postponement of activities requiring field presence, (b) delay in the launch of consultations and studies, etc., and (v) the problem of the availability of funds concerning the beneficiaries of the pilot projects, and (iv) beneficiaries consultation with installers of solar pumping equipment.*
4.	The achievement of results (outputs, outcomes and impacts), including global environmental benefits.	
A.	Immediate and intermediate effects, and long-term impact	*For the impact of the GEF-SP project,* the long-term change should be observed through an ex-post evaluation on the final beneficiaries (farmers) a few years after the closure of the project. On the whole, the GEF-SPproject is expected to contribute to: (1) **the global benefits** of GHG emission reduction, resulting from fossil fuel savings due to the use of solar pumping systems (global environmental benefits); (2) **the national benefits,** namely: (i) limitation of fossil fuel import, (ii) reduction of butane gas subsidy (the State compensation system), (iii) development of the national market for solar pumping for agricultural irrigation, and (iv) professionalization and job creation (equipment, installation and maintenance of solar pumping systems); and (3) **local/regional benefits**: the adoption of solar pumping

		systems would contribute to the improvement of farm productivity and enhancement of farmers' income.
B.	Main factors that favored and/or obstructed the project's achievements	See above 3. B.
5.	**Factors limiting the achievement of results and solutions adopted or not to overcome them**	
A.	Constraining factors and solutions adopted	The main constraints mentioned in the project reporting are: (i) the non-operationalization of the PNPS, (ii) the level of managerial capacity of agricultural cooperatives and associations, and (iii) the COVID-19 pandemic. The TE notes some delays in the implementation of certain activities. However, the project team was able to provide appropriate responses to the constraints encountered. Solutions were discussed and adopted, notably in the framework of the various CoPil meetings and annual reviews. Some implementation problems required an additional delay of 6-8 months for the completion of the PRV and PDI studies, and the start of the pilot projects.
6.	**Alternative strategy that could have been more effective in achieving the project's objectives.**	
A.	**Focused intervention strategy**	The GEF-SP project should normally have been a tool to accompany the PNPS as a reference programme. Yet, the PNPS was not operationalised, leading the GEF-SP project to adapt its ***intervention strategy*** focused on the implementation of its activities and the demonstration of the validity of its approach, products, and tools.
7.	**Gender**	
A.	Gender-sensitive and human rights-based approach integrated into the design and implementation of the intervention	Although envisaged in the GEF-SP project's ProDoc, the gender plan was not designed at the launch of the project. This exercise would have permitted the project to better understand the difficulties in implementing the gender approach and to find ways to involve more women farmers and members of agricultural cooperatives.
B.	Contribution of the GEF-SP project to gender equality, women's empowerment and a human rights-based approach	Le The GEF-SP project has taken gender into account during its implementation through the participation of women in several institutional and/or individual capacity building activities of AMEE staff (including the PMU) and different key partners (institutional, professional, and financial).

Alternative strategy for achieving the project

126. ***As a "focused intervention strategy" initiative, the GEF-SP project required a sustained effort to ensure its implementation in a constraining context (lack of institutional commitment related to the PNPS, managerial capacities of agricultural cooperatives and***

associations, the COIVID-19 pandemic, etc.).

127. To face these constraints, the GEF-SP project made adjustments to deal with this situation (see adaptive management and risk management). But the two major strengths of the GEF-SP project experience have been motivation and commitment. First, the PMU members were very involved throughout the project and remained highly motivated. Second, the GEF-SP project maintained regular relationships of trust with institutional and professional partners. Finally, the GEF-SP project has gained the confidence of the final beneficiaries (the farmers), particularly the pilot project holders, thanks to a close approach and by demonstrating the merits and comparative advantages of solar pumping.

Gender

128. ***The gender-sensitive and human rights-based approach has been well integrated in the design of the GEF-SP project. First, the ProDoc foresees the completion of the detailed gender plan at the start of the GEF-SP project. Second, it is also foreseen that the UNDP gender indicator will be updated annually based on the progress reported in the GEF PIR and the UNDP Annual Results Oriented Report (ROAR). Finally, the Environmental and Social Requirements review annexed to the ProDoc clearly recommended that the GEF-SP project "promote gender equality and women's empowerment".***

129. The ProDoc has established some indicators on women's participation in the overall objective (impact) and in some activities of the GEF-SP project. Regarding the overall objective, two indicators concern women: (i) partnerships with RESCOs and (ii) improved access to sustainable energy platforms. Concerning the outputs, three indicators of the ProDoc take gender into account. They relate to: (i) Number of large-scale PV demonstration pumping units installed / (women and men) (output 1), (ii) Number of trained technicians (women and men) specialized in the design, installation, operation, and maintenance of solar pumping systems and (iii) Number of finance professionals whose capacity to evaluate solar pumping projects is strengthened (women and men) (output **4**)[8].

130. At the close of the GEF-SP project, it should be noted that the detailed gender plan was not designed at the start of the project. On the other hand, out of a total of **393 beneficiaries** of the different capacity building and training activities **105 are women**, (26.7%).

Table 21 : Examples of training involving women

Training	Total	Number of women	%
8 training on solar pumping for 150 ONCA agricultural advisors	**150**	**43**	**28,6**
6 training sessions for the central and regional services of the Department of Agriculture (DRA, DPA and ORMVA)	**121**	**43**	**35,5**
2 training sessions for NGOs and chambers of agriculture	**39**	**13**	**33,3**

[8] Output 4: Beneficiaries' capacities are strengthened in the development, implementation and management of solar pumping systems and drip irrigation.

4 training sessions Label TAQAPRO- Solar pumping, 25 RESOVERTs labelled companies labelled, 63 company technicians at national level	**63**	**0**	**0,0**
1 training session on solar pumping for central and regional services of the Ministry of Energy Transition and Sustainable Development	**20**	**6**	**30,0**
Total	**393**	**105**	**26,7**

131. The participation of women was often reiterated and encouraged by the participants at the annual reviews and the meetings of the GEF-SP project CoPil. Specifically, it involved women from the PMU and AMEE, female advisors from ONCA, female staff from the central and regional services of the Department of Agriculture (DRA, DPA and ORMVA), representatives of NGOs and chambers of agriculture, and female executives from the central and regional services of the Ministry of Energy Transition and Sustainable Development.

Table 22 : effectiveness of the GEF-SP

Sub-criteria	Rating
Effectiveness in completing products and activities	Satisfactory (S)
Effectiveness	**Satisfactory (S)**

132. **Overall, the effectiveness of the GEF-SP project is satisfactory (S).**

6.4. Efficiency (*)

133. ***Project finances were efficiently managed through close monitoring of project expenditure, financial audits, and spot checks. The project utilized local capacity in implementation by contracting mostly national consultants. Cost levels were in line with benchmarks employed under UNDP procedures.***

Resource allocation and cost efficiency

Project budget

134. The total project budget amounts to USD 73,542,726, with GEF funding of USD 2,639,726 and UNDP funding of USD 100,000 in the form of a grant, and co-financing from the Government of Morocco distributed as follows:
    - Ministry of Agriculture and Maritime Fishing (MAPM): 31,128,000 of which 200,000 USD in-kind.
    - Ministry of Energy, Mines, Environment and Water (MEMEE): USD 3,093,000.
    - Agence de Développement des Énergies Renouvelables et de l'Efficacité (ADEREE): USD 7,616,000 of which USD 400,000 in-kind.
    - Groupe du Crédit Agricole du Maroc (GCAM) and other banks: USD 28,966,000 including USD 100,000 in-kind.

Table 23 : GEF-SP project budget in $USD

Source of funding amount	Year 1 amount	Year 2 amount	Year 3 amount	Year 14amount	Total amount
GEF	468 500	718 500	863 025	589 701	2 639 726
ADEREE (subvention)	1 804 000	1 804 000	1 804 000	1 804 000	7 216 000
ADEREE (en nature)	100 000	100 000	100 000	100 000	400 000
MAPM	7 732 000	7 732 000	7 732 000	7 732 000	30 928 000
MAPM (en nature)	60 000	60 000	40 000	40 000	200 000
MEMEE	773 250	773 250	773 250	773 250	3 093 000
PNUD (subvention)	25 000	25 000	25 000	25 000	100 000
GCAM & other banks	7 216 500	7 216 500	7 216 500	7 216 500	28 866 000
GCAM &other banks (in kind)	30 000	30 000	20 000	20 000	100 000
Total	18 209 250	18 459 250	18 573 775	18 300 451	73 542 726

Source: ProDoc, 2016.

135. The project is financed by the Government of Morocco (USD 41,837,000), banks (USD 28,966,000), GEF (USD 2,639,726) and UNDP (USD 100,000). About 1% of the co-financing in- kind.

Disbursement Rate

136. The GEF-SP project recorded a disbursement rate of 75.4%. It is a satisfactory rate considering the constraints faced by the GEF-SP project (delayed start-up, COVID-19 pandemic, etc.).

Table 24 : Comparison of planned and spent budget in USD

Years	Budget planned by the work plan	Budget spent according to CDR	Disbursement %
2017	103,472.43	103,472.43	100
2018	756,910.00	447,491.00	59,1
2019	689,917.00	640,542.19	92,8
2020	548,124.00	500,625.79	91,3
2021	594,000.00	398,216.71	67,5
2022	739,000.00	500,000.00	67,6
Total	3,431,423.43	2,590,348.12	75,4

Strategic use and allocation of resources to achieve results

137. Financial resources have been allocated to carry out the activities programmed in the approved annual work plans. In fact, the allocations of funds to the different outputs and project management have been adequate for the completion of the planned activities.

Table 25 : Disbursement by output (2017-2021)

CDRs signed	2017		2018		2019		2020		2021		Total	
	Dépenses	%	Dépenses	%	Dépenses	%	Dépenses	%	Dépenses	%	Dépenses	%
Output 1	63,108.82	61	93,646.94	21	185,939.11	29	87,668.50	18	205,073.65	51	635,437.02	30
Output 2	30,146.48	29	135,956.84	30	128,751.39	20	116,431.60	23	40,022.82	10	451,309.13	22
Output 3	-	0	-	0	60,325.59	9	124,179.94	25	89,066.08	22	273,571.61	13
Output 4	5,737.28	6	167,928.69	30	249,365.16	39	136,138.47	27	42,168.27	11	601,337.87	29
Project Management	4,479.85	4	49,949.53	11	16,260.94	3	36,207.28	7	21,885.89	6	128,783.49	6
TOTAL	103,472.43	100	447,491.00	100	640,542.19	100	500,625.79	100	398,216.71	100	2,090,438.12	100

138. The analysis of the use of the project's financial resources was based on the consolidated figures provided by the PMU (Annual Work Plans, CDR). The funds dedicated by GEF and UNDP to the GEF-SP project were managed in a unified manner by UNDP in its quality of GEF Executing Agency.

139. The varying rates of annual disbursements and the project's implementation timing suggest that the use of resources has been, overall, progressive and justified. The execution of GEF-SP outputs has been in four phases:

- Start-up phase (2017-2018): 61% (2017) and 30% (2018) of the expenditure corresponding to the start-up of activities of outputs 1 (installation of PV pumping units), 2 (implementation framework and sustainable standards for solar pumping and fertirrigation practices) and 4

(capacity building for the development and management of solar pumping projects). However, no expenditure has been incurred for the implementation of Output 3 (Financial support and incentive mechanisms).

- A phase of consolidation of implementation (2019) with expenditure allocated to the implementation of outputs 4, 1 and 2.
- A phase of relative slowdown (2020) due to the COVID-19 pandemic.
- A phase of re-launch of activities (2021) corresponding to the re-launch of activities before the closure of the GEF-SP project.

140. It should be noted that 60% of the project's financial resources were allocated to outputs 1 and 4 respectively, dedicated to the installation of PV pumping units and capacity building of the various project stakeholders. These two outputs were crucial in achieving the immediate and intermediate effects of the GEF-SP project.

141. Project management costs represent 6%, and no overruns were found, despite the extension of the project duration. This rate of management costs is below the standard threshold for GEF-PS projects, namely 10%. 77.63% of the project's financial resources are allocated to the realisation of project outputs.

Cost-effectiveness (comparative advantages and cost efficiency

142. It should be reminded that the intermediate effects and impact of the GEF-SP project aim at improving the living conditions of male and female farmers through the adoption and use of solar pumping for irrigation. To this purpose, the cost-effectiveness analysis consists in assessing the profitability of solar pumping compared to other modes of agricultural irrigation (butane, electricity, diesel) by considering: (i) the necessary inputs, (ii) the different costs of equipment installation and maintenance, and (iii) the expected results (effects and impact.

Regarding the costs, solar pumping is: (a) a competitive alternative to other irrigation modes because solar pumping cost is continuously decreasing, (b) with short payback period (3 to 5 years), (c) and low maintenance and supply cost.

Regarding efficiency (results), solar pumping is: (a) a safe technology (compared to the different risks of butane, diesel and electric), (b) a clean technology (renewable energy), (e) and a robust pumping system with an estimated lifetime of 20 years.

Project management and timeliness

Project management structure

143. The Project Management Unit (PMU) is composed of the National Coordinator, responsible for the operational management of the project, the Technical Officer and the Administrative and Financial Assistant. The PMU is placed under the dual supervision of the National Project Director and the CoPil, which is made up of the main stakeholders (institutional, professional and financial sector). Three teams in charge of the administrative and financial, technical and communication, awareness and training components supported the PMU. Internalized within AMEE, the PMU has represented, in addition to the implementation of project activities, an important asset for the appropriation and capitalization of the GEF-SP project experience.

144. The set up of thematic monitoring committees that monitored the following studies: (i) the study on the structuring of the solar pumping market support, (ii) the study on the realization of a MRV system for solar pumping, and (iii) the guide on fertirrigation associated with drip networks

supplied by solar pumping systems. As regards some specific activities, national and international experts provided technical assistance to PMU.

145. It should be noted that the National Directorate and the PMU team have been essential in carrying out the project activities and concluding various partnership agreements (ONCA, AMISOLE, GCAM, etc.).

Compliance with timetable and deadlines

146. The GEF-SP project has faced several constraints that have hampered the respect of the execution schedule and the respect of the deadlines set for the implementation of the project.

147. Firstly, the delay in launching the project. Officially, the GEF-SP project was supposed to start on the 1st of October 2017. It was not actually operational until 2018 (see project activity report).

148. Secondly, the delay in the installation of pilot projects. The non-operation of the subsidy component of the National Solar Pumping Program (see Convention signed in 2013) has hampered the installation of solar pumping pilot projects.

149. Lastly, the COVID-19 pandemic. The context of the COVID-19 pandemic slowed down the implementation of several activities: (i) postponement of activities requiring a field presence, (ii) delay in the launch of consultations and studies, etc., and (iii) problem of the availability of personal funds of the beneficiaries of the pilot projects, (iv) consultation by these beneficiaries with the suppliers/installers of solar pumping equipment.

150. Noting the difficulties in the implementation and the various delays in the execution of the project, the mid-term evaluation (2020) recommended extending the duration of the implementation, in order to allow the completion of the project activities and outputs.

Contribution of the monitoring and evaluation system to project management

151. Existing monitoring and compliance efforts to follow-up activities and coordination, but the M&E framework has not been effectively put in place and used by the PMU, CoPil and UNDP. In fact, the important role of M&E was called back to: (i) "Integrate impact monitoring and evaluation tools, especially on water resources for a sustainable development of the solar pumping market" (CoPil minutes of 26.1.2021), (ii) "Importance of monitoring and evaluation to capture project results: valorise, systematise, lessons learned, etc." (Mid-year review meeting, 2020). However, these recommendations did not lead to the implementation of the GEF-SP project's results-based M&E system.

Table 26 : Efficiency satisfactory

Sub-criteria	Rating
Resource allocation and cost efficiency	Satisfactory (S)
Project management and compliance with deadlines	Satisfactory (S)
Efficiency	**Satisfactory (S)**

6.5. Overall achievement

152. Taking into account relevance, effectiveness and efficiency criteria, the overall implementation of the project is rated as satisfactory.

Table 27 : Overall achievement rating

Results Assessment	Rating
Relevance	Highly satisfactory (HS)
Effectiveness	Satisfactory (S)
Efficiency	Satisfactory (S)
Overall Rating	**Satisfactory (S)**

6.6. Sustainability

153. ***Significant net benefits are likely to be sustainable. Overall, the conditions of sustainability (institutional, social, financial, environmental) are met to ensure the continuity of these net benefits after the closure of the GEF-SP project. Several initiatives are proposed in the end-of-project report (April 2022) are likely to maintain the benefits noted by the evaluation mission.***

154. The table below sets out the net sustainability benefits of the GEF-SP project. The term "net benefits" emphasizes the value of each benefit over time, taking into account the sustainability conditions related to the follow-up of the intervention.[9]

Table 28 : Probability of continued net benefits of the GEF-SP project in the long term

ENVIRONMENTAL SUSTAINABILITY	
Factors of sustainability	**Net benefits or not found by the evaluation mission**
Environmental factors affecting the future flow of environmental project benefits	**Drought is the main factor that can reduce the environmental benefits of the GEF-SP project.** In fact, Morocco has been under severe and endemic drought for many years. This situation results in a regular decrease in water availability, irregularity of agricultural production and intensification of extreme climatic phenomena (droughts, floods, sea level rise, etc.). In response to these risks, the GEF-SP project has put in place several necessary conditions to: (i) allow for the economic use of water through the shift from gravity irrigation to a more

[9] The evaluation team focused on the sustainability issues of the Guidance *for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financing Projects (GEF&UNDP, 2020*).

	efficient localized irrigation system, (ii) improve the productivity of farms, and (iii) setting up solar pumping control mechanisms.
Activities threatening the sustainability of the GEF-SP project results	**Over-pumping of water could be a major risk to the sustainability of GEF-SP project results.** Several respondents pointed out the risk of water losses and/or over-exploitation. In order to remedy this risk, it would be necessary to regulate agricultural uses through awareness-raising actions to combat water wastage and through appropriate control. For a rational control of water use, it is worth taking into account the recommendations of the ProDoc, namely: (i) to draw water from their well, farmers should get an authorization, issued by the Water Basin Agency responsible for the area where the farm is located, (ii) to respect the volume of water to be drawn, and (iii) to ensure that the solar pumping systems are sized to respect this volume. <u>Other risk reported by the ProDoc</u> The generation of waste associated with the replacement of diesel and butane pump systems must be eliminated.
SOCIO-POLITICAL SUSTAINABILITY	
Sustainability factors	**Net benefits assessed by the evaluation mission**
Level of stakeholders' ownership of the project's results/net benefits	**Ownership by national stakeholders has been successful, particularly within: (i) institutional partners (MTEDD, MAPM, DE, ONCA, etc.), and (ii) financial and technical professionals (GCAM, AMISOLE) Resorvert).** This represents an advantage for the sustainability of the net benefits of the GEF-SP project. The involvement of the first Resoverts created has been regular and consistent and has made it possible to strengthen local capacities in terms of structuring and professionalizing energy service micro-enterprises. In summary, it should be noted that stakeholder's participation and ownership were very satisfactory.
Stakeholders' interest in the achievement and continuity of the project's net benefits	**In terms of local (regional) benefits, farmers adopt solar pump systems for agricultural irrigation to enhance their income.** In fact, the reduction of energy expenses through the use of renewable energy would contribute to the improvement of farmers' income.
The GEF-SP project has carried out numerous awareness-raising activities for farmers and various stakeholders	**The GEF-SP project has carried out numerous awareness-raising activities for farmers and various stakeholders.**

	Concerning farmers and their professional organizations (cooperatives, AUEA, Chambers of Agriculture, etc.), awareness raising consisted in providing them with assistance and support for the integration of quality requirements and ensuring the sustainability of their solar pumping investment projects. Concerning the partners (institutional, technical and financial), the project focused on institutional sustainability, scaling up and replication of the project results. Concerning the general public, the GEF-SP project has accompanied and sensitised the media to the advantages of solar pumping in Morocco through: (i) design and distribution of an audio-visual capsule, (ii) participation in the various forums and fairs dedicated to renewable energies and energy efficiency (SIAM agriculture fair, SolaireExpo, SIDATTES, PHOTOVOLTAICA, etc.), and (iii) communication through various communication channels (written press, digital press, web spaces, radios, etc.)
Stakeholder consensus on actions to be taken after the project closure	The consensus of the stakeholders for the appropriation of the results of the project after its closure is largely obtained The minutes of CoPil meeting of 26.01.2021 reflects the consensus of stakeholders on the important results achieved by the project: - The will to reinforce the collaboration in the framework of new initiatives, in particular the “Green Generation Strategy"; - The desire to continue the project with the same; - Maintain the momentum and the same level of mobilization to achieve the goals set; - A model project in terms of cooperation which could help in the search for and mobilisation of more funding for generalisation to all regions, - Etc.
Identification and engagement of leaders (champions) to promote the sustainability of project results	**AMEE, the main project partner, has shown exemplary leadership in the conduct and implementation of the GFE-SP project.** AMEE was rewarded with the Energy Globe National Award in 2021 for AMEE's contribution to the promotion of photovoltaic pumping systems for agricultural irrigation in Morocco, thereby creating an enabling environment for the implementation of the PNPS.
Social and political risks regarding the longevity of the project results	**On the political level, despite the partnership agreement (April 2013) between the Government of Morocco, ADEREE and GCAM on the National Programme for the Promotion of Solar Pumping in Irrigation Water Saving Projects, no concrete follow-up has been given to this Programme.**

	Socially, the small farms and the most vulnerable farmers (nearly 75%) have not been adequately targeted by the GEF-SP project.
Short- and long-term gender outcomes	**The GEF-SP project has taken gender into account during its implementation through the participation of women in several institutional and/or individual capacity building activities.** For similar future projects, it is necessary to: (i) better target women farmers and (ii) create real opportunities for these women interested in the management and development of solar pumping projects for agricultural irrigation in Morocco.
DURABILITE INSTITUTIONNELLE ET GOUVERNANCE	
Sustainability Factors	**Net benefits noted by the evaluation mission**
Cadre institutionnel et gouvernance / transfert des connaissances techniques	**The transfer of technical knowledge has been foreseen by ProDoc in terms of information sharing and using networks and forums at sub-national, national, regional, and global levels.** As a result of the GEF-SP project, four modalities for communication and knowledge sharing have been deployed, namely: (i) regional and local workshops and thematic panels; (ii) participation in dedicated exhibitions and fairs; (iii) awareness-raising tools and multimedia communication actions; and (iv) awareness-raising video clips. In addition, the GEF-SP project team has produced a capitalization report of the project results (July 2022). This report is comprehensive in its assessment of the project's achievements and could be used for other similar projects, notably in Sudan.
Legal and policy frameworks, governance structures and processes	**Designed to establish a framework for the deployment of the National Solar Pumping Programme (signed in 2013 and not yet operationalised), the GEF-SP project has been implemented and has demonstrated its relevance and utility.**
Relevant institutional and professional capacities	**The GEF-SP project has enabled the emergence of national, regional, and local capacity in terms of experience and expertise through the strengthening of appropriate and self-sufficient institutional and professional capacities.**
Response to future institutional and governance changes	**Due to its good management, the GEF-SP project is fully capable to respond to opportunities and challenges of creating the conditions for the development of solar pumping in Morocco and other African countries (south-south cooperation).**

Ownership of GEF-SP project strategy *a posteriori*	**The GEF-SP project strategy can serve as a practical baseline for the eventual development of the National Solar Pumping Program (PNSP).**
Institutional change	**The consideration of gender equality and human rights in Morocco has been constitutionally established since 2011.** The Royal speech (30 July 2022) insisted on the importance of systematically taking into account the conditions of women in Morocco: "We insist once again on the need for Moroccan women to make their full contribution in all areas".
FINANCIAL SUSTAINABILITY	
Sustainability Factors	**Net profit noted by the evaluation mission**
Probability of financial availability resources after GEF funding.	**Upon completion of GEF support, financial resources to support the continued benefits of the GEF-SP project can be obtained from multiple sources**: First, the updated solar pumping NAMA, which serves as a basis for mobilizing climate finance. Its realization will be a complementary asset in the realization of the national NDC in the agricultural sector. Secondly, the GEF-SP project submitted a request for funding to the Green Climate Fund (GCF), with the support of UNDP-Morocco, to prepare for the generalization of support to solar pumping in the medium and long term. This request received an initial favorable response from the GCF. Finally, the financing and support mechanisms for the green economy deployed by international (GEF- UNDP- EBRD, IFC/World Bank) and national (Morocco SME) actors.
Financial Sustainability	**The long-term financial sustainability model for solar pumping developed by the GEF-SP project is based on**: (i) higher capital costs than other technologies, but much lower operating and maintenance costs; (ii) reduced recurrent pumping costs; and (iii) improved farm productivity and competitiveness. Generally, small-scale farmers are relatively aware of the benefits of solar pumping systems but are constrained by the high capital cost of such systems and their difficulties in accessing bank finance.
Other factors for creating an enabling environment	The main additional factors necessary to create a favorable environment for further financing are as follows: (i) structuring of the quality solar pumping market and production of equipment in Morocco; (ii) political and programmatic commitment to the National Solar Pumping Program (PNPS) and the removal of constraints to accessing

	finance, particularly for small farmers (5hectare size limit); (iii) demonstrating the comparative advantages of solar pumping over other pumping methods (diesel, butane and electricity), in terms of water resource conservation, cost and profitability of installations, equipment safety, and optimal fertigation efficiency; and (iv) the proposal of fiscal incentives by AMEE to the departments in charge of energy transition and industry and trade, including: (a) the regulatory texts concerning the promulgation of the finance laws for the years 2019-2020-2021 and 2022 (Dahir No. 1-20-90 of 16 December 2020, finance law No. 70-19 for the year 2019, and (b) the finance law (2021), present incentives in terms of exemption from VAT on imports concerning panels.
Financial and economic instruments and mechanisms for the continuity of the benefit flow	**A Strategic study to structure support for the solar pumping market** On the one hand, AMEE launched, in 2018, a strategic study aimed at structuring the support of this market. This study includes an axis dedicated to the financial and economic instruments and mechanisms for the continuity of the flow of benefits of the project: ''Proposal of adapted financing mechanisms and incentive measures to boost the pumping market''. **Exit strategy and financial sustainability** In addition, as part of the development of the exit strategy of the GEF-SP project, a request for funding, designed with the support of UNDP-Morocco, was sent by the GEF PS project to the Green Climate Fund (GCF) to prepare for the generalization of support for the solar pumping sector in the medium and long term. This request received an initial favorable response from the GCF.

6.7. Country ownership

155. ***Ownership by national stakeholders has been achieved through their participation in the implementation of the GEF-PS project. Several stakeholders interviewed during the evaluation mission are convinced that the benefits of the GEF-PS project can be appropriated and should be consolidated in the perspective to be generalized in Morocco and Africa (south-south cooperation).***

156. According to GEF, country ownership requires consideration of a number of conditions that can justify the GEF-SP project through: (i) the appropriateness of the GEF-SP project concept with sectoral and development public policies in Morocco, (ii) the integration of the actual or potential results of the GEF-SP project with sectoral and development public policies in Morocco, (iii) the participation of key partners in the identification, planning and/or implementation of the GEF-PS project in steering bodies (intergovernmental committee, steering committee, etc. (iv) continued government financial commitment to the GEF-SP project, and (v) approval and/or modification of policies or regulatory frameworks in line with the objectives of the GEF-PS project.

Table 29 : Country ownership

Components of country ownership	Findings and comments of TE
Appropriateness of the GEF-SP project concept with sectorial and development public policies in Morocco	The GEF-SP project concept is perfectly in line with several sectorial and development public policies in Morocco: (i) the positive assessment of the New Development Model (NMD) in Morocco on solar pumping, more specifically the rationalization of agricultural energy consumption, by increasing the penetration rate of renewable energy in the agricultural sector, through the extension of the use of solar energy techniques in water pumping, (ii) the alignment of the GEF-PS project with the global and sectoral strategies for the environment and sustainable development in Morocco: **(a)** the National Strategy for Sustainable Development (strategic axis 5 of the SNDD: "Accelerate the implementation of the energy transition"), **(b)** the implementation of a National Programme for the Development of Solar Pumping on Farms (measure 48: this measure aims to encourage farmers to equip their farms with solar pumping installations), **(c)** the National Solar Pumping Programme for Irrigation Water (PNEEI): The GEF-SP project was designed and implemented to provide appropriate support to this programme while also addressing the identified shortcomings of this programme, **(d)** the National Strategy for the Development of Renewable Energy (SNDER) by promoting farmers' access to photovoltaic pumping systems, and **(e)** the Green Morocco Plan (PMV), which seeks to increase the efficiency of agricultural water use by improving irrigation infrastructure and adopting best practices, but also by promoting high-demand crops with low water requirements.
Mainstreaming the actual or potential results of the GEF-SP project into sectoral and developmental public policies in Morocco	**On the one hand, it should be reminded that the GEF-SP project was designed to support the PNPS.** Based on the overall positive performance and results of the GEF-SP project, it would be relevant **to redesign the PNPS based on a focused intervention strategy, i.e.:** (i) a longer-term strategy for ownership of the GEF-

	SP project results, (ii) a sustained effort to ensure resources continuity, and (iii) a rigorous monitoring and evaluation system. On the other hand, **several actual or potential results of the GEF-SP project can be integrated into sectorial and developmental public policies.** This implies that these public policies should be redesigned or updated in the short term, in response to the country's water crisis.
Participation of key partners in the identification, planning and/or implementation of the GEF-SP project in steering boards (intergovernmental committee, steering committee, etc.)	**The different stakeholders (institutional, technical, professional and financial) were involved, especially in the CoPil meetings and the monitoring committees. This involvement was maintained throughout the implementation of the project and proved to be one of the key drivers for achieving the planned results.** This has been demonstrated by the active participation and commitment of relevant stakeholders in the strategic orientation and operational supervision of the GEF-SP project through their contributions to: (i) increasing the visibility of solar pumping in Morocco, (ii) the professionalization of the sector, and (iii) the establishment of the necessary tools for a sustainable development of the solar pumping market in Morocco.
The government's continued financial commitment to the GEF-SP project	**The government's financial commitment to the GEF-SP project was maintained as part of the project's co-financing.**
Approval and/or modification of policies or regulatory frameworks in line with the objectives of the GEF-SP project	**Regarding policy changes or regulatory frameworks in line with the objectives of the GEF-PS project, it's worth mentioning:** (i) On the one hand, the regulatory texts promulgating the finance laws for the years 2019-2020-2021 and 2022 (Dahir No. 1-20-90 of 16 December 2020, finance law No. 70-19 for the year 2019, and the finance law for 2021), present incentives in terms of VAT exemption on imports concerning photovoltaic solar panels, pumps, solar cells. However, the 2022 Finance Law brings this tax back to **10%** with a right of deduction for solar panels, and (ii) On the other hand, the updated solar pumping NAMA serves as a basis for the mobilization of climate finance. Its realization would be a complementary asset in the realization of the national NDC in the agricultural sector.

157. Finally, the ownership of the model and the tools developed by the GEF-PS project represent a real opportunity to be developed within the framework of the project's exit strategy. This strategy will serve as a reference: (i) for the restructuring of the PNPS, (ii) for the institutionalization of the support to the solar pumping sector in Morocco, (iii) for its deployment on a regional scale, and the involvement of the Resoverts to support farmers and farmers' groups in their investment projects in solar pumping for agricultural irrigation.

6.8. Gender equality and women's empowerment

158. ***This section examines gender equality and women's empowerment through the results of the GEF-PS projects. Nevertheless, it should be mentioned that the GEF-PS project was developed before the publication of the GEF policy on gender mainstreaming and the UNDP strategy on gender equality and empowerment.***

159. **On the one hand**, a detailed gender analysis was planned to be carried out at the start of the GEF-SP project. This gender analysis would have made it possible to diagnose the differences between men and women in terms of activities, conditions, needs, access to and control over resources, as well as access to the benefits of development and decision-making.

160. Some gender considerations are pointed out by the ProDoc, including: (i) UNDP Outcome **5** recalling the special attention to be given to gender, (ii) the gender approach to development and water management of the 10-95 law, and (iii) the UNDP gender marker updated annually according to the progress reported in the PIR.

161. On the other hand, the gender issue was taken into account in the implementation of the project as follows: awareness raising, training and capacity building of women farmers; capacity building of women agricultural advisors; awareness raising of the general public, including women; strong involvement of AMEE women in awareness raising and communication actions on solar pumping, energy efficiency and sustainable energy (+ 33%); good representation of women in the Project Management Unit (PMU) of the project (30%); involvement of women in the study monitoring committee (30%); involvement of women in training and capacity building actions (10 to 15%); involvement of women (farmers, agricultural advisors) in local awareness raising workshops (10%); representation of women in dedicated expositions (over 40%).

6.9. Cross-cutting issues

162. At the time of the preparation of the GEF-PS project in 2016, some cross-cutting issues were not addressed as in the project formulation, namely: (i) improved governance, (ii) disaster prevention, and (iii) volunteer work.

The main crosscutting issues addressed directly by the ProDoc are climate change mitigation and capacity development. These issues are extensively addressed in different sections of the GEF-PS project. The table below presents the following cross-cutting issues: (i) poverty reduction, (iv) knowledge management, (v) South-South cooperation, and (vi) human rights

Table 30 : Main cross-cutting issues of the GEF-PS project

Cross-cutting issues	Findings and comments of the TE
Poverty Reduction l	**The improvement of the living conditions of the final beneficiaries, namely farmers and solar pumping professionals, is the ultimate result of the GEF-SP project.** To achieve this, the project aims to: (i) to contribute to the fight against poverty by significantly increasing the agricultural income of the most vulnerable farmers, mainly small farms (area of less than 5 ha); and (ii) to create local green jobs through the installation and maintenance of pumping systems. The visits and interviews with qualified resource persons (Resoverts, professionals and technicians, small, specialized companies, etc.), allowed to state that the GEF-SP project has contributed to: (i) *the technological mastery of solar pumping and the production and/or transformation of photovoltaic pumping components through the strengthening of managerial and technical capacities, and (ii) the creation of jobs.* In terms of increased income, one of the comparative advantages noted by the evaluation mission is that farm productivity has almost doubled. However, this advantage should be extended to very small farms, in order to better target them in the perspective of the operationalization of the PNPS.
Knowledge management	**Axe majeur Communication and knowledge sharing** is a major axis of the GEF-SP project with two specific objectives: on the one hand, to strengthen institutional and stakeholder capacities in the development and management of solar pumping projects for irrigation, and on the other hand, to support the strengthening of local capacity for the production of photovoltaic pumping components (technological mastery and job creation). The approach adopted by the GEF-SP project has been to train, inform and raise awareness of solar pumping among the various stakeholders and actors involved in the fields of irrigation, renewable energy and agriculture **(on the achievements, see the effectiveness)**
Cooperation South-South	The ProDoc recommended initiating exchanges with the similar Sudanese UNDP/GEF project for the promotion of the use of electric water pumps for irrigation in Northern Sudan State (see previous comment). To this end, it would be appropriate to extend this experience to other African countries in order to capitalize on knowledge and experience exchange.
Human Rights	**According to the ProDoc, the GEF-SP project integrates the human rights approach by adopting a participatory approach that includes all stakeholders (public and private sectors, farmers, associations, etc.) in the implementation of project activities.**

	This choice is based on the commitments that Morocco has ratified, specifically the right to clean and sufficient water, as stated in article 25 of the Universal Declaration of Human Rights: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family [...]". However, this commitment is is conditioned by the sustainable management of irrigation water, particularly in the context of the water stress that Morocco is now experiencing.

6.10. GEF additionality

163. ***The evaluation team has noted that there is a shared appreciation which GEF resources have brought to the implementation of the GEF-SP project. In fact, the converging opinions expressed by several stakeholders interviewed (institutional and professional) confirm that the achievements of the GEF-SP project would not have taken place without GEF funding.***

164. In line with recent developments in GEF project evaluation methodology, GEF additionality is examined in terms of changes of direct project outcomes at project completion that can be attributed to GEF interventions.

165. The table below shows six Areas of GEF's Additionality.

Table 31 : Six Areas of GEF's Additionality

Additionality	Description
Specific Environmental Additionality	**The GEF's additional support to the GEF-SP project contributes to the achievement of global environmental benefits**, namely the significant reduction of GHG emissions through the use of renewable energy technologies.
Legal/Regulatory Additionality	**GEF-SP has enabled GEF-SP project to put in place legal and regulatory arrangements for solar pumping systems**, including: (i) the joint ministerial order n° 927-20 of 06 March 2020 on the quality system for solar photovoltaic equipment (PV modules, PV systems, batteries, converters), (ii) the institutional and legal scheme of the MRV-SP, and (iii) a set of technical, regulatory, organizational and commercial recommendations for a good management of the environmental impact and on water resources related to the extension of the solar pumping market.
Institutional Additionality/ Governance additionality	**The support of the GEF allows AMEE to be strategically positioned as the reference institution in solar pumping for agricultural irrigation in Morocco**.

Financial Additionality	**National and regional benefits of GEF additionality**: - Implementation of financing mechanisms to facilitate the acquisition of PV pumping systems; - Technical and institutional capacity building of partners, professionals and farmers (as final beneficiaries); - Developing investment mechanisms for the deployment and dissemination of renewable energy technologies; and - Mobilizing financial operators and raising their awareness of the value of solar pumping. **Global environmental benefits**: - A reduction in the use of fossil fuel sources; - Reduction in direct GHG emissions resulting from the replacement of diesel and butane pumping systems with solar systems under the project; and - Reduction in indirect GHG emissions resulting from the widespread adoption of solar energy as a result of the project activities.
Socio-Economic Additionality	**GEF-SP project contributes to improving the living conditions of the final beneficiaries in terms of increased income**, namely farmers who have adopted solar pumping to irrigate their plantations (citrus, olive groves, etc.).
Innovation Additionality	**GEF support has allowed the GEF-SP project to**: - Develop domestic production capacity for solar pumping system equipment and components in Morocco; - Build the capacity of financial professionals to evaluate bankable solar pumping projects; and - Build the capacity and accreditation of RESCOs to ensure quality service.

166. GEF support has allowed the GEF-SP project to: (i) develop domestic production capacity for solar pumping system equipment and components in Morocco; (ii) build the capacity of financial professionals to evaluate bankable solar pumping projects; and (iii) build the capacity and accreditation of RESCOs to ensure quality service.

6.11. Catalytic Effect / Replication

167. ***GEF-SP project has paved the way for a new and innovative experience in solar pumping in Morocco. The catalyst effect of the GEF-SP project is promising, and the possibility of replicating this experience on a larger scale in other regions of Morocco is possible.***

168. The table below shows the catalytic role of GEF-SP project considering the following four areas: production of public good - demonstration - scaling up - replication.

Table 32 : . Assessment of Catalytic Role of GEF-SP role

1	Production of public good	A limited natural resource essential to life, water is a public good in Morocco, which is in an extremely strained water situation (650 cubic meter per inhabitant/year). The GEF-SP project creates transformational change by developing an approach, tools and technologies for water use in agricultural irrigation in a context of water stress in Morocco. In terms of "public good", this project has to its credit: - The correlation between solar pumping and water resource management - The creation and development of new solar pumping techniques to reduce pressure on the groundwater - Standardization of solar irrigation systems; - The development of the skills of private operators to ensure a quality service offer; - Implementation of a monitoring framework for the project's impacts on GHG emissions mitigation.
2	**Demonstration**	Firstly, the GEF-SP project was designed to support the PNPS, while also responding to the shortcomings identified in this programme. It is therefore a question of demonstrating, on a reduced scale, the significant and positive impact of this project for Morocco. Secondly, through the capacity building, training and awareness-raising component, the GEF-SP project has demonstrated the importance of capacity building for the various actors involved, of raising awareness among operators and farmers of the economic and environmental benefits of solar pumping and of developing financing mechanisms to facilitate the acquisition of photovoltaic pumping systems. Finally, the demonstration of the comparative advantages of solar pumping compared to other pumping methods (diesel, butane, and electricity), in terms of preservation of water resources, cost and profitability of the installations, safety of the equipment, and optimal yield of fertirrigation.
3	Scaling up	Five transformation processes would facilitate scaling up the GEF-SP project experience, namely: - The development of an exit and sustainability strategy for the results of the GEF-SP project with a view to scaling up its experience (regional and national); - The political and programmatic commitment of the National Solar Pumping Programme (PNPS) and the removal of constraints to access to finance, particularly for small farmers (5 hectare threshold); - Long-term support from key institutional and professional stakeholders who have been associated with the GEF-SP project and an opening to other regional, national, and international partners

		- The evolution of the quality solar pumping market and equipment production in Morocco; and - Sharing the GEF-SP project experience with other countries with high photovoltaic potential and high dependence on fossil fuels, particularly in Africa.
4	Replication	Replication of the GEF-SP project experience is now possible. In fact, replication can be envisaged through its reproduction in other regions or in the regions of the GEF-SP pilot projects but financed by other resources (to be identified in the exit and sustainability strategy of the results). Possible replication modalities are: - Sharing GEF-SP project's exit and sustainability strategy with the stakeholders involved in its implementation, and more broadly with other potential national and international partners (national or international thematic forum); - Knowledge transfer from GEF-SP project (main products produced by the project); - Capacity building and training of individuals and institutions to extend the project's achievements in the country or other regions; and - The contribution of individuals, institutions or enterprises trained by the project to replicate GEF-SP project results in other regions or countries.

169. On the one hand, GEF-SP project has demonstrated its catalytic role in contributing to the production of "public goods", the demonstration of these "public goods" in the area of efficient solar pumping in Morocco. On the other hand, it has also demonstrated that the replication of the solar pumping approach, mechanisms, tools and technologies and it's scaling up is feasible in Morocco.

6.12. Progress to Impact

170. It is often too early to assess the long-term impact of a project at the time of its closure, as many outcomes, including environmental benefits, may take several years to be achieved.

171. However, the analysis of progress towards impact proposed by the evaluation team consists of examining the contribution or not, of four intermediate outcomes to the long-term impact, as reformulated by the reconstructed theory of change, namely: "***Improvement of the living conditions of male and female farmers in a sustainable way through the use of solar pumping for agricultural irrigation in Morocco***".

172. ***The GEF-SP project would contribute, in various ways, to transformational changes in the field of agricultural solar pumping in Morocco, namely, with regard to the significant strengthening of institutional and professional capacity in solar pumping for irrigation (intermediate outcome 1.), GEF-SP project has contributed substantially to: (i) the acquisition of knowledge and skills to develop and manage solar pumping projects for agricultural irrigation and (ii) raising awareness of the importance of the adoption and use of solar energy in agricultural irrigation.***

173. Le table below synthesizes the contribution of each of the four intermediate outcomes to the long-term impact of the GEF-SP project

Table 33 : Contributions to the long-term impact of the reconstituted theory of change

Long-term impact The living conditions of male and female farmers have improved, in a sustainable way, thanks to the use of solar pumping for irrigation in Morocco.
Intermediate Outcome 1. **The institutional and professional capacities of stakeholders in the development and management of solar pumping irrigation projects are strengthened.**
In response to an important need for institutional capacity building, GEF-SP project has contributed to transformational change in the field of solar pumping in two ways: on the one hand, the acquisition of knowledge and skills to develop and manage solar pumping projects for localised irrigation; and, on the other hand, raising awareness of the importance of the adoption and use of solar energy in agricultural irrigation. (i) Concerning the acquisition of knowledge and skills in solar pumping by the different partners (institutional, technical, and financial), GEF-SP project has strengthened their practical capacities to develop and manage solar pumping projects for localised agricultural irrigation. (ii) Concerning awareness raising and capacity building of farmers, specifically the pilot projects, the GEF-SP project supported them, on the basis of an accompanying model and for demonstration purposes, through: (a) awareness raising of farmers on the use and management of solar pumping systems and (b) through the necessary assistance and accompaniment for the integration of quality requirements, as well as the sustainability conditions of their solar pumping investment projects. (iii) Dans In both cases, this transformational change, to which GEF-SP project has contributed, is a direct consequence of two factors that promote progress towards long-term impact, namely: (i) the important role of institutional, technical, financial capacity building for the adoption and use of solar pumping for localised agricultural irrigation and (ii) the key role of raising farmers' awareness of the various comparative advantages of solar pumping (much lower operating and maintenance costs than other pumping modes, reduced recurrent pumping costs, and improved farm viability and performance) over other modes (diesel, butane and electricity). (iv) This transformational change has affected women farmers less in terms of access to and control of resources and decision-making power. Gender mainstreaming objectives would need to be developed in the context of scaling up, particularly in the operationalization of the NSP. Des objectifs d'intégration de la dimension de genre seraient nécessaires à développer dans le cadre de la réplication à plus grande échelle, notamment dans l'opérationnalisation du PNPS.
Intermediate Outcome 2. **The production capacity photovoltaic pumping components is mastered and can provide jobs.**
Due to the low national production capacity of equipment and components related to PV pumping systems, the expected support of GEF-SP project consists in strengthening local capacities for the mastery and production of PV pumping components in Morocco. This support includes the strengthening of local private sector production facilities. GEF-SP project's technical assistance to local private manufacturers (production of components and after-sales maintenance of this equipment) consisted of supporting the national production capacity of equipment and components. To this end, a study/plan for local industrial development of pumping components was carried out by GEF-SP project. This plan aims to establish the current situation in four parts: (1) Study of the current situation of the solar pumping industry in Morocco and Africa, (2) Study of the options for a national solar pumping components industry, (3) Feasibility study (Business Plan) of the manufacturing units, and (4) Support plan for the manufacturing units. The implementation of GEF-SP initiative would allow the development of a structured national and local industry for the production of solar pumping equipment and installation and maintenance services. The development of such a supply will in turn increase demand and lower installation prices through competition, which in turn will enhance market expansion and thus contribute to low-carbon and climate-resilient development in Morocco.

Nevertheless, it should be noted that there are two challenges to the development of domestic production of solar pumping components in Morocco, namely: the low local competitiveness compared to the world market and the dependence, particularly on Chinese and Turkish suppliers.

Intermediate Outcome 3.

The framework for monitoring performance and reducing greenhouse is in place and operational.

A framework for monitoring performance and greenhouse gas emissions reduction has been developed by the GEF-SP project, including: (1) the monitoring system for solar pumping (MRV) for agricultural purposes, (2) the remote monitoring system for solar pumping projects.

The purpose of the MRV system is to reliably monitor the progress of the Nationally Determined Contribution as proposed and updated under the Paris Agreement. On the other hand, the MRV system makes it possible for the GEF-SP project to be eligible for international funding as a Nationally Appropriate Mitigation Measure (NAMA).

The remote monitoring system provides real-time data on the operation of the installed solar pumping system and allows the evaluation of the energy performance, water balance and environmental impact of the system and the optimization of interventions in case of pumping operation problems.

For the GEF-SP project, the advantage of this monitoring framework is to contribute to: (1) the global environmental benefits, in this case the reduction of GHG emissions, which result from the savings in fossil fuels due to the use of solar pumping systems; (2) the benefits at national scale: (i) the impact of the use of renewable energy will limit the import of fossil fuels, (ii) the positive impact of the reduction of the butane gas subsidy (compensation system charge), (iii) the development of the national market for solar pumping for agricultural irrigation, and (iv) the creation and professionalisation of jobs for the equipment, installation and maintenance of solar pumping systems; and (3) to the benefits at the local/regional scale: the adoption of solar pumping systems would contribute to the improvement of farm yields and the enhancement of farmers' income.

Intermediate Outcome 4.

The market for solar pumping for agricultural irrigation is of high quality, well managed and scaling up in Morocco and Africa.

The GEF-SP project has brought about a fundamental change in contributing to the transformation of the solar pumping market for agricultural irrigation through (i) the ambition to transform the solar pumping market, (ii) the mobilization of the private sector (professional and banking) for the development of the pumping market on a regional and national scale and (iii) the development of technical reference systems to improve the quality of solar pumping equipment for agricultural irrigation.

(i)The ambition to transform the solar pumping market

The specific objective of the GEF-SP project is: "To contribute to the creation of a quality market through a system of standardization of equipment, accreditation of operators, training of installers and labeling of equipment". This ambition consists in transforming the solar pumping market in Morocco by seeking to eliminate a series of obstacles (political, legal, technical, financial, etc.).

In the absence of a specific study on the issue of solar pumping, AMEE initiated, in 2018, a strategic study aimed at structuring the support of this market. Delivered in 2019, this study was justified by: (i) the need to have reliable, credible and useful data on the characteristics, potential and challenges of the solar market in Morocco, (ii) the emergence of a local market for the solar pumping sector benefiting from the global dynamics already set in motion in production, and (iii) the reinforcement of financing capacities for the structuring of the pumping market thanks to the adoption of photovoltaic solar standards that enter into the composition of solar pumping systems and tax exemptions for solar pumping.

(ii) Key role of the private sector (professional and banking)

To ensure the pumping market expansion on a regional and national scale, the role of the private sector has been very important. GEF-SP project has developed the partnerships necessary to develop the solar pumping market in Morocco with the Moroccan Association of Solar and Wind Industries (AMISOLE), the Crédit Agricole Group of Morocco (Tamwil El Fellah) and the regional "Resoverts" networks.

The three partners have contributed, according to their respective responsibilities, to the initiation of the professionalization and development of solar pumping in Morocco through:

- The professional qualification of companies to participate in the supply, transport and installation of solar pumping projects and the design and deployment of the TaqaPro label;
- Standardisation of technical specifications for the choice of equipment (modules, inverters, pumps, AC/DC safety components) as well as for the installation, maintenance and servicing of systems;
- Awareness raising and dissemination of quality standards, structuring and labeling of micro-enterprises by RESOVERT;
- Industrial integration through the emergence of a local market for the manufacture and assembly of solar system components;
- The proposal of adapted financing mechanisms and incentives to boost the pumping market; and
- The strengthening of financing capacities for the structuring of the solar pumping market through tax exemptions for solar pumping.

Through these contributions of the partners (professionals, banking sector and regional networks), GEF-SP project has succeeded in: (i) ensuring the conditions for the sustainability and long-term impact of its results (Outcome-Impact), and (ii) setting the basis for private sector engagement for a large-scale expansion of the pumping market in Morocco (national/regional) and in Africa.

However, the informal sector represents a challenge for the solar pumping market in Morocco, in terms of the re-use of some components imported from some European countries (Spain, Italy, etc.) and exported to African countries.

(iii) Progress and technical innovation

In the context of an effective demand for solar pumping energy services, GEF-SP project has been able to develop and improve the level of mainstreaming of knowledge, quality and new technological configurations in solar pumping equipment, systems and projects installed for agricultural irrigation purposes.

In terms of the sustainability of solar pumping, it is conditioned by the integration of several environmental improvement conditions, including (i) the conditionality of financial aid to the development of resilient crops and controlled irrigation, (ii) the integration of solar pumping operation in the groundwater contract, (iii) the performance of water saving by solar energy, (iv) the generalization of the inventory of water spots (wells and drill holes), the systematic integration of technological monitoring tools (flow meters, remote monitoring systems, mobile application, integrated GPSR, ...) in PPV installations, the encouragement of collective drilling and installations in areas with low resources (natural and economic).

It should be noted that GEF-SP project has provided the various partners with technical guidelines to facilitate the mastering of various aspects of solar pumping, notably:

- The technical guide of specifications and technical requirements to be respected for the acquisition and installation of solar pumping systems for agricultural irrigation in Morocco;
- The technical manual on fertigation associated with drip networks fed by solar pumping systems, including tools for calculating the savings associated with the implementation of fertigation systems, in order to demonstrate the financial benefits of switching to an optimal fertigation system; and
- The technical guide on energy efficiency and solar pumping in agriculture, which aims at the technical popularisation of energy efficiency and green energy systems in agriculture.

174. In sum, the intermediate effects of the GEF-PS project would contribute, in varying degrees, to transformational changes in the field of agricultural solar pumping in Morocco, namely:

175. Regarding the significant strengthening of institutional and professional capacity in solar pumping for irrigation (intermediate outcome 1.), the GEF-PS project has contributed, substantially, to: (i) the acquisition of knowledge and skills to develop and manage solar pumping projects for agricultural irrigation, and (ii) raising awareness of the importance of the adoption and use of solar energy in agricultural irrigation.

176. Regarding the support to national and local capacities for the production of photovoltaic components and the creation of jobs (intermediate effect 2.), the technical assistance of GEF-SP project for the support of local capacities for the production of photovoltaic components is justified. As a matter of fact, the study conducted by the project has enabled the production of solar pumping components in Morocco to be mapped out.

177. The ambitious objectives of GEF-SP project - technological mastery and job creation - are, for the time being, beyond the reach of the project because, (i) On the one hand, technological mastery requires a learning process and a number of steps that have not yet been achieved, namely: importing technology, replication, adaptation and development of new technologies; (ii) on the other hand, there is no possibility of verification of job creation attributed to GEF-SP project.

178. However, the GEF-SP project must be acknowledged for having initiated the reflection on the challenges posed to the development of the production of photovoltaic components in Morocco.

179. Regarding the implementation of the GHG emission reduction and performance monitoring framework (intermediate outcome 3), once established and operational, it would contribute to three benefits to: **(1)** the global benefits of GHG emission reduction, which result from fossil fuel savings due to the use of solar pumping systems (global environmental benefits); **(2**) benefits at national level, namely: (i) limitation of fossil fuel imports, (ii) reduction of butane gas subsidy (compensation system charge), (iii) development of the national market for solar pumping for agricultural irrigation, and (iv) professionalization and job creation (equipment, installation and maintenance of solar pumping systems); and **(3)** local/regional benefits: the adoption of solar pumping systems would contribute to the improvement of farm yields and the enhancement of farmers' income.

180. As regards the development of the solar pumping market for irrigation in Morocco (intermediate outcome 4.), the transformation of the solar pumping market for agricultural irrigation is, probably, a fundamental change, to which the GEF-SP project would have contributed (ambition to transform the solar pumping market - mobilisation of the private sector (professional and banking) - technical reference systems to improve the quality of solar pumping equipment for agricultural irrigation.

7. MAIN FINDINGS, CONCLUSIONS, RECOMMENDATIONS, LESSONS LEARNED

7.1. Main Findings

Project Design/Formulation

181. The main weakness of GEF-SP project design is the absence of an explicit theory of change which could demonstrate the relationships between the project components, particularly between outputs and the overall objective (impact). In addition, the lack of formulation of intermediate outcomes does not allow to assess the main transformational changes expected from the project.

Adaptive management

182. In response to various implementation constraints, GEF-SP project relied on adjustment mechanisms to respond to changing contexts and improve project implementation. The adaptive management of the GEF-SP project was useful, particularly during the COVID-19 pandemic.

Stakeholders' participation and partnership arrangements

183. Overall, stakeholders' engagement has been regular and useful, resulting in partnerships between AMEE and the professional, technical and financial partners.

Finance and co-finance of the project

184. At the end of the project, the government's co-financing commitments were maintained.

Monitoring and evaluation

185. The analysis of the components of GEF-SP project's M&E framework shows that it is exhaustive in terms of reporting, auditing and M&E activities. Its main limitation is that it does not track progress towards the achievement of development results (intermediate, final and impact outcomes). The annual review reports, the final report, as well as the mid-term evaluation report provided the intermediate and final effects in terms of energy impact (KWp, environmental CO2 reduction, etc.).

186. Field monitoring and coordination efforts undertaken by the PMU exist, but the M&E framework has not been effectively put in place and used by the PMU and the CoPil. On the one hand, the PMU and UNDP have missed the opportunity to transform the M&E framework envisioned by the ProDoc by: (i) establishing a true results-based M&E mechanism within AMEE, (ii) providing for a specific internal M&E structure, and (iii) training resource staff in M&E and management for development results (MfDR). On the other hand, the use of implementation M&E data has not been optimal, particularly as a decision support tool to: (i) improve project management, (ii) ensure timely refocusing, (iii) address constraints, and (iv) find evidence-based responses to reported risks.

AMEE, the implementation partner of GEF-SP project

187. As confirmed by the institutional, professional, and financial partners of the GEF-SP project, the execution of the AMEE has been exemplary, both in its implementation of the GEF-SP project activities and in the adequate and continuous accompaniment of the final beneficiaries (agricultural cooperatives).

UNDP implementation/oversight

188. In summary, UNDP provided: (i) regular monitoring of the PMU and regular field visits to accompany and supervise the project activities and results; (ii) support to the PMU in the pre-examination of the annual work plans and related budgets, quality control by providing and sharing AAAs and CDRs with the national partner and their co-validation; (iii) review of the ToRs elaborated by the PMU and validation of the project's deliverables and products; (iv) monitoring the progress of the project and

providing guidance at CoPil meetings, mid-year and annual reviews to address constraints and strengthen national ownership; (v) drafting the PIR each year to assess risks, achievement or non-achievement of target objectives and annual achievements, and providing feedback to the PMU on risk management and implementation of CoPil recommendations, reviews, mid-term evaluation (2020) and terminal evaluation (2022).

Gender equality and women's empowerment

189. This section examines gender equality and women's empowerment through the results of the GEF-PS projects. Nevertheless, it should be mentioned that the GEF-PS project was developed before the publication of the GEF policy on gender mainstreaming and the UNDP strategy on gender equality and empowerment. Nevertheless, GEF-SP project has taken gender into account during its implementation through the participation of women in several institutional and/or individual capacity building activities.

Social and environmental safeguards at the design phase

190. The project document states that the project carried out a full environmental and social review during the PPG phase, which was included in Part III. Based on a review of the agenda and the narrative of the Inception Workshop report, the environmental and social screening report was not revisited during the inception phase, in compliance with best practice at the project initiation and planning stage.

Progress made towards achieving expected results

191. GEF-SP project has achieved the vast majority of the target values of outputs listed in the results framework. The number of people trained has generally been exceeded. Through the various products implemented, the GEF-SP project has significantly contributed to the main objectives, namely: (i) the creation of a quality market through an equipment standardized system, operator accreditation, installer training and equipment labelling; (ii) the strengthening of institutional and stakeholder capacities for the development and management of solar pumping projects for irrigation; (iii) the strengthening of local production capacity for photovoltaic pumping components: technological mastery and job creation; and (iv) Establishment of a monitoring framework in terms of energy performance and greenhouse gas emission reduction.

Relevance

192. The GEF-SP project's consideration of the needs of the final beneficiaries (farmers).

193. The GEF-SP project concept is perfectly in line with several sectorial and development public policies in Morocco: (i) the positive assessment of the New Development Model (NMD) in Morocco on solar pumping, more specifically the rationalization of agricultural energy consumption, (ii) the alignment of the project with the global and sectorial strategies for the environment and sustainable development in Morocco (National Strategy for Sustainable Development, National Programi for the Development of Solar Pumping on Farms, National Solar Pumping Programi for Irrigation Water (PNEEI), National Strategy for the Development of Renewable Energy (SNDER), and the Green Morocco Plan (PMV).

194. The project is also in line with: (i) Morocco's international commitments, particularly the United Nations Framework Convention on Climate Change (UNFCCC), (ii) GEF strategic priorities (including alignment of relevant focal area indicators), and (iii) adequacy of GEF-PS project objectives and conception with the UNDAF (2017-2021)/UNDP and SDGs.

Effectiveness

195. Through the activities and products carried out, the GEF-SP project has variously contributed to three types of results: (i) individual results: results related to capacity building activities, technical training, awareness raising on the development, implementation and management of solar pumping and irrigation systems; (ii) organizational results: (a) the model for accompanying pilot projects, (b) the design of different technical and economic studies, (c) quality reference systems, (d) the contractual agreement between the project owner and the service provider, based on commitments in terms of quality assurance and after-sales service, (e) the design and deployment of the TaqaPro label, (f) good practices and requirements related to the rational use of water resources, etc.; and (iii) institutional results include: (a) the monitoring framework in terms of energy performance and reduction of greenhouse gas emissions, (b) the joint ministerial decree n° 927-20 of 06 March 2020 concerning the quality system for solar photovoltaic equipment (PV modules, PV systems batteries, converters), (c) incentives in terms of VAT exemption for imported solar PV panels, pumps, solar cells, updated NAMA for solar pumping, which serves as a basis for mobilizing climate finance, etc.

Efficiency

196. Project finance was efficiently managed through close monitoring of project expenditure, financial audits and spot checks. The project utilized local capacity in implementation by contracting mostly national consultants. Cost levels were in line with benchmarks employed under UNDP procedures.

Sustainability

197. Significant net benefits are likely to be sustainable. Overall, the conditions of sustainability (institutional, social, financial, environmental) are met to ensure the continuity of these net benefits after the closure of the GEF-SP project. Several initiatives are proposed in the end-of-project report (April 2022) are likely to maintain the benefits noted by the evaluation mission.

Country ownership

198. Ownership by national stakeholders has been achieved through their participation in the implementation of the GEF-SP project. Several stakeholders interviewed during the evaluation mission are convinced that the benefits of the GEF-PS project can be appropriated and should be consolidated in the perspective to be generalized in Morocco and Africa (south-south cooperation).

GEF additionality

199. The evaluation team has noted that there is a shared appreciation that GEF resources have brought to the implementation of the GEF-SP project. In fact, the converging opinions expressed by several stakeholders interviewed (institutional and professional) confirm that the achievements of the GEF-SP project would not have taken place without GEF funding.

Catalytic Effect /Replication

200. GEF-SP project has paved the way for a new and innovative experience in solar pumping in Morocco. The catalyst effect of the GEF-SP project is promising, and the possibility of replicating this experience on a larger scale in other regions of Morocco is possible.

Progress to Impact

201. The GEF-SP project would contribute, in various ways, to transformational changes in the field of agricultural solar pumping in Morocco, namely, with regard to the significant strengthening of

institutional and professional capacity in solar pumping for irrigation (intermediate outcome 1.), GEF-SP project has contributed substantially to: (i) the acquisition of knowledge and skills to develop and manage solar pumping projects for agricultural irrigation and (ii) raising awareness of the importance of the adoption and use of solar energy in agricultural irrigation.

7.2. Conclusions and recommendations

7.2.1. Conclusions

Alternative strategy for achieving the project objectives

202. GEF-SP project adopted an alternative strategy to achieve its objectives. A "***focused intervention strategy***", which required a sustained effort to ensure the implementation of the project in a constraining context (lack of institutional commitment to the PNPS, weak managerial capacities of agricultural cooperatives and associations, COIVID-19 pandemic, etc.).

203. Faced with all of these constraints, GEF-SP project made adaptations to deal with this situation (see adaptive management and risk management). But the two major strengths of the GEF-SP project experience have been motivation and trust. First, the PMU members were very involved throughout the project and remained highly motivated. Second, the GEF-SP project maintained regular relationships of trust with institutional and professional partners. Finally, GEF-SP project has gained the trust of the final beneficiaries (farmers), particularly the pilot project holders, thanks to a proximity approach and the demonstration of the merits and comparative advantages of solar pumping.

204. Although the PNPS agreement was signed in 2013, the solar pumping grant has not been operationalized due to technical-financial issues, including: (i) concerns about the risks of increased pumping that could occur due to the free solar pumping, once the system is installed, (ii) the delays and complexity of the procedure of preparing two documents, one for the solar panels and another for the irrigation system, and (iii) the unsuccessful efforts, led by the agencies and institutions involved, for the signature of the programme contract dedicated to the PNPS.

205. Nevertheless, the GEF-SP project has contributed to the main objectives of the PNSP, particularly the strategic objective of the PNPS to develop institutional, technical, and financial tools to support the installation of solar pumps in agriculture. Nevertheless, the GEF-SP project has contributed to the main objectives of the PNSP, particularly to the strategic objective of the PNPS to develop institutional, technical and financial tools to support the installation of solar pumps in agriculture. On the other hand, the GEF-SP project has contributed to the transformation of the pumping market for agricultural irrigation. Finally, the GEF-SP project has "appropriated" the NAMA concept from the National Solar Pumping Programme.

Effective steering and implementation of the project

<u>AMEE exemplary leadership exemplaire</u>

206. AMEE, the main project partner, has shown exemplary leadership in the conduct and supervision of GEF-SP project.

207. As a result, AMEE was rewarded with the Energy Globe National Award in 2021 for AMEE's contribution to the promotion of photovoltaic pumping systems for agricultural irrigation in Morocco, thus creating an enabling framework for the implementation of the PNPS.

Steering adapted to the project's supervision

208. GEF-SP project supervision was able to address the challenges of creating the conditions for the development of solar pumping in Morocco and other African countries (south-south cooperation).

209. The different stakeholders (institutional, technical, professional, and financial) were involved, especially in the CoPil meetings. The different stakeholders (institutional, technical, professional, and financial) were involved, especially in the CoPil meetings. This involvement was maintained throughout the implementation of the project and proved to be one of the key drivers for achieving the expected results.

210. The active participation and involvement of relevant stakeholders in the strategic orientation and operational supervision of GEF-SP project was demonstrated through their contributions to: (i) lending visibility to solar pumping in Morocco, (ii) the professionalization of the sector, and (iii) and through the establishment of the necessary tools for the development of the solar pumping market in Morocco

Effective implementation of the PMU

211. The PMU has been successful in its daily monitoring of the different project activities and outputs, in terms of planning (AWP and Procurement Plan), coordination between AMEE and the different partners involved for each activity, reporting, organisation of CoPil meetings, monitoring committees and internal planning meetings.

212. The national coordinator and the PMU members were very involved throughout the project and remained highly motivated. The PMU maintained regular relationships of trust with institutional and professional partners. Also, the GEF-SP project has gained the trust of the final beneficiaries (farmers), particularly the pilot project holders, thanks to a proximity approach and the demonstration of the merits and comparative advantages of solar pumping.

UNDP effective support

213. UNDP support was provided to strengthen national ownership and help achieve results. UNDP has generated synergies and complementarities with the SGP-GEF and the Accelrator programme. It has also been reactive in its interventions to address problems while trying to strengthen national ownership.

214. UNDP ensured: (i) regular monitoring of the PMU and regular control visits organised in the field to accompany and supervise the project activities and results; (ii) support to the PMU in the pre-examination of the annual work plans and related budgets, quality control by providing and sharing AAAs and CDRs with the national partner and their co-validation; (iii) review of the ToRs elaborated by the PMU and validation of the project's deliverables and products; (iv) monitoring the progress of the project and providing guidance at CoPil meetings, mid-year and annual reviews to address constraints and strengthen national ownership; (v) drafting the PIR each year to assess risks, achievement or non-achievement of target objectives and annual achievements, and providing feedback to the PMU on risk

management and implementation of CoPil recommendations, reviews, mid-term evaluation (2020) and final evaluation (2022)

Stakeholders' commitment and consensus

215. The different stakeholders (institutional, technical, professional, and financial) were involved, especially in the CoPil meetings. This involvement was maintained throughout the implementation of the project and proved to be one of the key drivers for achieving the planned results. The consensus of the stakeholders for the appropriation of the results of the project after its closure is well established.

A good record, results commensurate with the efforts made

216. GEF-SP project achieved the vast majority of the target values for the outcomes specified in its results framework. The numbers of people trained were generally exceeded.

217. The results of the GEF-SP project are well appreciated by the different stakeholders, despite the constraints mentioned in the project reporting, particularly: (i) the non-operation of the PNPS, (ii) the level of managerial capacity of agricultural cooperatives and associations, and (iii) the COVID-19 pandemic. Some delays in the implementation of certain activities are noted by the RU. However, the project team was able to find appropriate solutions to critical situations.

218. Through the various outputs achieved, GEF-SP project has contributed significantly to the main objectives as follows: (i) the strengthening of institutional and stakeholder capacities in the development and management of solar pumping projects for irrigation; (ii) the initiation of a quality market through the system of equipment standardization, operator accreditation, installer training and equipment labeling; and (iii) the establishment of a monitoring framework in terms of energy performance and greenhouse gas emission reduction.

219. The strengthening of local capacity for the production of photovoltaic pumping components (technological mastery and job creation) requires time and, above all, the gradual removal of contextual constraints, such as informality, strong competition from Chinese and Turkish suppliers, etc.

Efforts have been made to mainstream gender

220. Although planned in the GEF-SP project's ProDoc, the gender plan was not designed at the start of GEF-SP project. This would have allowed the project to understand the difficulties in implementing the gender approach and find ways to involve more women farmers and members of agricultural cooperatives.

Institutional and governance framework

221. The main factors favoring the implementation of an institutional and governance framework for solar pumping are: (i) ownership of the GEF-SP project strategy after the project's closure (ii) consensus of the stakeholders on the steps to be taken for the project activities after its closure, (iii) leadership of the AMEE, which is able to promote the project's results, (iv) the emergence of a national capacity, (iv) the emergence of national, regional and local capacity in

terms of experience and expertise through the strengthening of appropriate institutional and professional capacities, (v) the possible integration of the GEF-SP project strategy into the National Strategy for Sustainable Development (NSSD), being redesigned (2022-2023), (vi) the necessary transfer of the project's technical knowledge, and (vii) the mainstreaming of gender equality and human rights in future public policies.

Financial sustainability in the long term

222. Upon completion of GEF support, financial resources to support the continued benefits of the GEF-SP project can be obtained from multiple sources, including: (i) the updated solar pumping NAMA, serving as a basis for mobilizing climate finance, (ii) the funding request, designed with the support of UNDP-Morocco, has been addressed by GEF-SP project to the Green Climate Fund (GCF) to prepare for the mainstreaming of solar pumping support for the medium and long term, and (iii) the financing and support mechanisms for the green economy deployed by international (GEF-UNDP- EBRD, IFC/World Bank) and national (Morocco SME) actors.

Benefits and knowledge transfert of the project

223. The transfer of technical knowledge has been planned by ProDoc in terms of information sharing networks and forums use at sub-national, national, regional, and global levels. To the credit of the GEF-SP project, four modalities for communication and knowledge sharing were carried out, namely: (i) regional and local workshops and thematic panels, (ii) participation in dedicated fairs and exhibitions, (iii) awareness-raising tools and multimedia communication actions, and (iv) awareness-raising video capsules.

224. In addition, GEF-SP project team has produced a capitalization report on the project's results (July 2022). This report is comprehensive in terms of the project's achievements and could be used for other similar projects, notably in Sudan.

Sustainability

225. GEF-SP project has several net benefits that are likely to continue after its closure. In fact, certain conditions of sustainability (institutional, social, political, financial, and environmental) are met to ensure the continuity of these benefits in the mid- to long-term. However, two factors relating to environmental sustainability need to be addressed.

226. The first factor that would reduce the environmental benefits of GEF-SP project is drought. In fact, Morocco has been experiencing endemic drought for many years. This situation results in a regular decrease in water availability, irregularity of agricultural production and intensification of extreme climatic phenomena (droughts, floods, etc.).

227. The second factor is the over-pumping of water, which could represent a significant risk to the sustainability of GEF-SP project results. Several interviewees warned of the risk of wasting and/or over-exploiting water. In order to address this risk, it would be necessary to regulate agricultural uses through awareness-raising actions to fight against water wastage and through adequate control.)

Progress towards achieving long-term impact

228. The analysis of progress towards impact proposed by the TE team consisted of examining the contribution or not, of four intermediate long-term outcomes impact, as reformulated by the reconstructed theory of change, namely: "Improved living conditions of male and female farmers, in a sustainable manner, through the use of solar pumping for agricultural irrigation in Morocco".

229. The intermediate outcomes of GEF-SP project would variably contribute to transformational change in the field of agricultural solar pumping in Morocco.

230. GEF-SP project has thus contributed to:
- The acquisition of knowledge and skills to develop and manage solar pumping projects for agricultural irrigation;
- Raising awareness of the importance of the adoption and use of solar energy in agricultural irrigation;
- The development of a framework for monitoring performance and reducing greenhouse gas emissions.

231. Concerning the transformation of the solar pumping market for agricultural irrigation, this is a fundamental change to which GEF-SP project would have contributed (ambition to transform the solar pumping market - mobilization of the private sector (professional and banking) - technical reference systems to improve the quality of solar pumping equipment for agricultural irrigation.

232. Finally, GEF-SP project's technical assistance to support national and local capacities for the production of photovoltaic components and job creation is well justified (A study conducted by the project has assessed the current state of solar pumping component production in Morocco). However, the ambitious objectives of GEF-SP project - technological competence and job creation - are, for the time being, out of reach of the project because:
- On the one hand, technological proficiency implies a learning process and a number of steps that have not yet been reached, namely: importing technology, replicating, adapting and developing new technologies.
- On the other hand, there is no possibility of any verification of job creation attributed to the GEF-SP project

233. Still, GEF-SP project must be credited for initiating the debate on the challenges of developing the production of photovoltaic components in Morocco.

7.2.2. Recommendations

234. These recommendations are suggested for implementation, using the results obtained by the GEF-SP project. In addition, recommendations on conceptual and programmatic issues are proposed for the preparation of future similar GEF-funded and UNDP-supported projects and programmes. Each recommendation is supported by a conclusion based on the findings of the TE specific to the issue in question.

Table 34 : Conclusion / Recommendation / Actions

#	Conclusion / Recommendation / Actions	Responsible Entity	Temporal involvement
Category 1. Project cycle review (preparation, formulation, and implementation)			
Conclusion 1. GEF-SP has faced numerous delays related to the whole GEF-SP project cycle (approval, formulation, implementation and closure.	**Recommendation 1.** Considering the long delays in the preparation of the project and its implementation, ***it's recommended that in the future, the problems related to the procedural aspects of the project approval and the conditions of its implementation be better studied and anticipated for the formulation of future UNDP/GEF projects***.	UNDP&GEF	Short time
Main actions of the recommendation 2. <u>Action 1.</u> **Review the GEF project cycle** In order to implement this recommendation, a thorough review of the procedures for approving GEF projects and the conditions for their implementation should be undertaken. This exercise covers the time, effort and financial resources required for project design and implementation.			
Category 2. Long-term focused intervention strategy			
Conclusion 2. As part of its implementation, the GEF-SP project adopted a "focused intervention strategy". This strategy required a sustained effort to ensure the implementation of the project in a constraining context (lack of institutional commitment to the PNPS, managerial capacities of agricultural cooperatives and associations, the COIVID-19 pandemic, etc.). Faced with all these constraints, the GEF-SP project has made adaptations to deal with this situation (see adaptive management and risk management). However, the two major assets of the GEF-SP project experience were motivation and trust. First, the PMU members were very involved throughout the project and remained highly motivated. Second, the GEF-SP project maintained regular relationships of trust with institutional and professional partners. Finally, GEF-SP project has gained the trust of the final beneficiaries (farmers), particularly the	**Recommendation 2.** In line with the recommendation of the generalization of solar pumping for agricultural irrigation in Morocco (GEF-SP project closing- report, July 2022) and, considering the positive appreciation of the New Development Model (NMD) on the extension of the use of solar energy techniques in water pumping in Morocco, ***it would be advisable for AMEE to develop a long-term focused strategy on solar pumping in Morocco by advocating the integration of the GEF-SP project's results into the Moroccan public policies and programmes for sustainable development***.	Goverment (AMEE & key partners)	Mid-term

pilot project holders, through a close relationship with them and through the demonstration of the merits and comparative advantages of solar pumping.			

Main actions of the recommendation 2.

Action 1. **Roadmap for the capitalisation, valorisation and sharing of the GEF-SP project experience.**
AMEE, in association with the technical and financial institutional partners, should prepare the roadmap for the capitalisation, valorisation and sharing of GEF-SP project experience. To this end, it is necessary to take into account the net benefits related to sustainability identified by the evaluation mission and the various conditions required for their long-term continuity.

Action 2. **Strategy statement for the development of the solar pumping ecosystem in Morocco**
Based on GEF-SP project experience capitalisation roadmap, AMEE should formulate a strategy statement for the development of the solar pumping ecosystem in Morocco. The strategy statement should specify the ambition to transform the solar pumping market in Morocco by seeking to identify the barriers (political, legal, technical, financial, etc.) and the measures to be taken to resolve them.

Action 3. **Institutional advocacy for the strategy for the development of the solar pumping ecosystem in Morocco**
AMEE, together with institutional, professional, and financial partners, should lead the institutional advocacy to transform the strategy statement for the development of solar pumping in Morocco into explicit public policy. The redesign of the National Strategy for Sustainable Development currently underway represents a real opportunity for the integration and scaling up of the support model and tools developed by GEF-SP project.

Category 3. Institutional and governance framework of the solar pumping ecosystem			
Conclusion 3. The main factors favouring the establishment of an institutional and governance framework for solar pumping are (i) stakeholders' ownership of the GEF-SP project strategy, (ii) stakeholders' consensus on the steps to be taken for the project activities after the closure of the project, (iii) AMEE leadership for promoting the project results, (iv) emergence of national, regional and local capacity in terms of experience and expertise through the strengthening of appropriate institutional and professional capacities, (v) the possible integration of the GEF-SP project strategy into the National Strategy for Sustainable Development (NSSD), which is currently being redesigned (2022-2023), (vi) the transfer of the project's technical knowledge, and (vii) the mainstreaming of gender equality and human rights in future public policies.	**Recommendation 3.** In line with the recommendations of the GEF-SP project closing report (July 2022), solar pumping in Morocco: "will have to benefit from an institutional and management framework that will allow to organize the market, to have an information system on the development of projects and to structure the interventions of the different partners in the different levels of preparation, implementation and monitoring of solar pumping projects", ***it is recommended to pursue and consolidate the development of solar pumping for agricultural irrigation in Morocco through the establishment of the institutional and governance framework of the solar pumping ecosystem for agricultural irrigation in Morocco***.	Government (AMEE & key partners)	Mid-term

Main actions of recommendation 3.

Action 1. **Creation of a working group for the development of the institutional and governance framework**
For the elaboration of the institutional and governance framework of the solar pumping ecosystem for agricultural irrigation, a working group should be constituted in the short term and should work to: (i) determine the institutional, legal, financial, etc. changes necessary for the elaboration of the institutional and governance framework, (ii) finalize the modalities of its organization, and (iii) the agenda of its tasks.

Actions 2. **Developing the institutional and governance framework: roles and responsibilities of stakeholders**
This first action related to the institutional and governance framework consists in updating the capacity analysis of the stakeholders of the solar pumping for agricultural irrigation ecosystem in Morocco. It will also focus on the roles and responsibilities of the different institutional and private sector stakeholders (professional, technical, and financial) in solar pumping for agricultural irrigation.

Action 3. **Deploying GEF-SP project's support model and tools at the regional level**
This second action consists in territorialising the support model and tools of GEF-SP project at the level of the provinces and regions. Skills and competences are to be mobilised at the level of the provincial or regional services, which will support farmers and farmers' groups in their investment projects in solar pumping for agricultural irrigation.

Action 4. **Strengthening quality requirements, labeling and classification of companies**
The institutional and governance framework of the solar pumping ecosystem for agricultural irrigation should take into account: (i) assistance and support for the integration of quality requirements and sustainability conditions in their investment projects, (ii) the establishment of a permanent management structure for labeling, and (iii) the classification of companies and their eligibility for solar pumping projects in agriculture

Category 4 : Gender mainstreaming			
Conclusion 4. Although planned in GEF-SP project's ProDoc, the gender plan was not designed at the start of GEF-SP project. This would have allowed the project to understand the difficulties in implementing the gender approach and find ways to involve more women farmers and members of agricultural cooperatives. Nevertheless, GEF-SP project has taken gender into account during its implementation through the participation of women in several institutional and/or individual capacity building activities. For similar future projects, there is a need to: (i) better target women farmers and (ii) create real opportunities for interested women in the management and development of solar pumping projects for agricultural irrigation in Morocco.	**Recommendation 4.** ***It is recommended to systematise gender analysis and improve the targeting of women in future programmes and similar gender mainstreaming projects***.	UNDP/GEF Goverment	Short term

Main action of recommendation 4.

Action 1. **A comprehensive sectoral gender analysis of the solar pumping ecosystem in Morocco**
For women's mainstreaming in the solar pumping ecosystem in Morocco, an in-depth gender sector analysis should be

conducted. This analysis should take into account: (i) adaptation of offers to the needs of young rural women, (ii) awareness raising on the importance of effectively integrating women into the solar pumping ecosystem, (iii) mainstreaming of the gender component in the institutional and governance framework developed below, and (iv) implementation and continuity of measures in favour of young rural women.

Action 2. **Targeting the emerging women farmers or members of agricultural cooperatives**
For similar future projects, there is a need to: (i) better target women farmers and/or women members of agricultural cooperatives, and (ii) create real opportunities for women interested in the management and development of solar pumping projects for agricultural irrigation in Morocco.

Category 5. Sustainability of the net benefits of the GEF-SP project			
Conclusion 5. GEF-SP project has several net benefits that are likely to continue after its closure. In fact, certain conditions of sustainability (institutional, social, political, financial, and environmental) are met to ensure the continuity of these benefits in the mid- to long-term. However, two factors relating to environmental sustainability need to be addressed. The first factor that would reduce the environmental benefits of the GEF-SP project is drought. In fact, Morocco has been experiencing endemic drought for many years. This situation results in a regular decrease in water availability, irregularity of agricultural production and intensification of extreme climatic phenomena (droughts, floods, etc.). The second factor is the over-pumping of water, which could represent a significant risk to the sustainability of the GEF-SP project results. Several interviewees warned of the risk of wasting and/or over-exploiting water. In order to address this risk, it would be necessary to regulate agricultural uses through awareness-raising actions to fight against water wastage and through adequate control.	**Recommendation 5.** Considering the net benefits of GEF-SP project, ***it is recommended that the Government ensure the various financial, economic, social, environmental, and institutional capacities for their long-term continuity.***	Government	Mid-term

Main action of recommendation 5.

Actions 1. **Adopt mechanisms for broader adoption of the net benefits of the GEF-SP project after its closure**
According to GEF, these mechanisms of broader adoption include five processes of transformational change, namely: (i) sustainability, (ii) mainstreaming, (iii) replication, (iv) scaling-up, and (v) market evolution.

Actions 2. **Setting up the monitoring and learning system for transformational change in the solar pumping ecosystem**
Based on the mechanisms for wider adoption of GEF, a monitoring and learning system should be set up to continuously track the five transformational change processes of the solar pumping ecosystem in Morocco. This system will collect

data on each transformational change and analyze it to determine the continuity, or its absence, of the net benefits, their effective ownership, and their effectiveness.

Actions 3. **Monitoring and analysis of risk factors**
This third action concerns the design of the system for identifying, monitoring, and analyzing the risks that contribute, or could contribute, to the positive or negative evolution of transformational change. The five levels of risk analysis are: (i) organizational, (ii) institutional, (iii) operational, and (iv) environmental. In addition to the identification of risks and their typology, the analysis should consider the foreseeable impact of each risk and the likelihood of its occurrence, as well as the anticipated countermeasures or responses to mitigate its effects.

Category 6. GEF-SP project exit strategy			
Conclusion 6. On the one hand, the appropriation of the model and support tools developed by GEF-SP project represents a real opportunity to be developed as part of the project's exit strategy. This strategy could serve as a reference for: (i) the redesign of the National Solar Pumping Programme (PNPS), (ii) the institutionalization of support for the solar pumping sector in Morocco, (iii) its deployment on a regional scale, and the involvement of the Resoverts to play their role of support for farmers and farmers' groups in their investment projects in solar pumping for agricultural irrigation On the other hand, the replication of GEF-SP project experience is now possible. In fact, replication can be envisaged through its reproduction in other regions or in the regions of the GEF-SP pilot projects but financed by other resources.	**Recommendation 6.** The exit and sustainability strategy of GEF-SP project is envisaged by the final report of the (July 2022). In fact, the latter formulated the first elements of this strategy, which converge with several proposals of several stakeholders consulted during the TE mission. To ensure the sustainability of the project's net benefits, it is recommended that GEF-SP exit strategy and its implementation specific modalities be explicitly formulated and detailed.	Government (AMEE)	Short term

Main actions of recommendation 6.

Action 1. **Explicit formulation of the exit strategy and sustainability of the net benefits of GEF-SP project**
First, the exit strategy should describe the steps and activities to ensure the sustainable management of the results achieved by the project once GEF support has ended. Second, the exit strategy will also specify the specific and agreed roles and responsibilities of key stakeholders. Finally, the exit strategy should identify relevant factors requiring attention in the future

Action 2. **National or international forum on the development of solar pumping ecosystem in Morocco**
Organisation of a national or international forum on the theme of solar pumping to share and debate the experience of the GEF-SP project. This forum will be an opportunity to develop south-south cooperation partnerships, particularly with African countries.

7.3. Lessons learned and good practices

7.3.1. Lessons learned

235. Three lessons are identified and presented below. These lessons from GEF-SP project experience concern: (i) the effectiveness of project management and implementation, (ii) the commitment of stakeholders and their ownership of the net benefits of the project, and (iii) the contribution of GEF additionality to the results achieved by the project.

236. Lesson 1.
The effectiveness of GEF-SP project's steering and implementation
The participatory approach adopted for both the steering and the implementation of the GEF-SP project facilitated the efficient execution of the project and reduced the risks of failure. In other words, steering and implementation were crucial to the success of GEF-SP project and the sustainability and durability of the results.

237. Lesson 2.
Stakeholders' commitment and ownership of the net benefits of GEF-SP project
The commitment of stakeholders (institutional, professional, and financial), and their regular participation in GEF-SP project activities (CoPil, technical studies, training, etc.) contributed to the effectiveness of the results and strengthened ownership of the net benefits obtained by GEF-SP project.

238. Lesson 3.
The contribution of GEF addionnality to the results of the GEF-SP project
Without GEF funding, the project's achievements would not have been possible. In fact, without GEF support, the project wouldn't have been able to mobilise farmers (cooperatives and agricultural associations) to adopt solar pumping systems and provide the support required for the dissemination of quality solar systems.

7.3.2. Good practices: institutionalising - territorialising – professionalising

239. The three good practices presented below are intended to be capitalized on and shared with other regions in Morocco (advanced regionalization) and/or with other countries (Africa, MENA, etc.). These three good practices concern: (i) the institutionalisation of the support model developed by the project, (ii) the territorialization of this model, particularly in the regions, and (iii) the professionalisation of stakeholders through the labeling of the quality of solar pumping installations.

240. Good practice 1.
Institutionalization of the support model developed by the GEF-SP project
GEF-SP project has developed a support model for farmers and their professional organizations to integrate quality requirements and ensure the sustainability of their solar pumping investment projects in Morocco. This model is built on three pillars, namely: (i) institutional and professional capacity building, (ii) quality standards, and (iii) technical assistance.

241. With a perspective of scaling up and replication of GEF-SP project experience, the institutionalization of accompaniment would be a best practice to be structured, shared and disseminated.

242. Good practice 2.

The territorialization of the model developed by GEF-SP project

Another good practice, which GEF-SP project can claim is the experimentation of pilot projects in the regions. This experience consisted in testing the validity of the model for accompanying pilot projects of solar pumping for agricultural irrigation through: (i) quality requirements and criteria (technical and economic studies - modular solution and configurations - site parameterisation and operator needs - installation operations), (ii) the contractualisation linking the project owner and the service provider, based on quality assurance and after-sales service, and (iii) tools for monitoring the impact of the technical and environmental performance of the installed projects, and (iv) good practices and requirements related to the rational use of water resources).

243. Good practice 3.

Professionalization of the solar pumping market

GEF-SP project has initiated the professional development of solar pumping in Morocco through (i) the professional qualification of companies to participate in the supply, transport and installation of solar pumping projects and in the design and the deployment of the TaqaPro label, (ii) the standardization of technical specifications for the choice of equipment (modules, inverters, pumps, AC/DC safety components) as well as for the installation, maintenance and servicing of the systems, (iii) awareness raising and dissemination of quality standards, structuring and labeling of micro-enterprises by the RESOVERTs, (iv) industrial integration through the emergence of a local market in terms of manufacturing and assembly of solar system components, (v) proposal of adapted financing mechanisms and incentives to boost the pumping market, and (vi) strengthening of financing capacities for the structuring of the solar pumping market through tax exemptions for solar pumping.

244. All these benefits, developed by the GEF-SP project, have been the subject of technical specifications for the setting up and technical monitoring of solar pumping projects in Morocco.

245. Through these contributions from partners (professionals, banking sector and regional networks), the GEF-SP project has succeeded in: (i) ensuring the conditions for the sustainability and long-term impact of its results (impact effects), and (ii) laying the foundations for private sector commitment to a large-scale expansion of the pumping market in Morocco (national/regional) and Africa.

8. ANNEXES

8.1. ToR of the THE (without annexes to the ToR

ROYAUME DU MAROC

Termes de reference

Evaluation finale du projet Projet GEF-Pompage Solaire « Promotion du développement des systèmes de pompage photovoltaïques pour l'irrigation »

Réf : IC-04-05-2022 **09.05.2022**

Lieu :	Basé à domicile avec des missions à Rabat/Maroc
Date limite de soumission:	13/05/2022 à 16h00
Type de contrat :	Contrat Individuel
Langue requise :	français
Description de la mission:	Evaluation finale du projet Projet GEF-Pompage Solaire « Promotion du développement des systèmes de pompage photovoltaïques pour l'irrigation »
Durée de la mission :	30 jours ouvrables.

I. INTRODUCTION

Conformément aux politiques et procédures de suivi et d'évaluation du PNUD et du FEM, tous les projetsde moyenne ou grande envergure appuyés par le PNUD et financés par le FEM doivent faire l'objet d'uneévaluation finale (EF) à la fin du projet. Les présents termes de référence (TdR) énoncent les attentes associées à l'EF du projet de grande envergure intitulé projet GEF-Pompage Solaire « Promotion du développement des systèmes de pompage photovoltaïques pour l'irrigation » (N°5284 PIMS), mis en œuvre par l'Agence

Marocaine pour l'Efficacité Energétique. Le projet a démarré le 14er Octobre 2016 et se trouve actuellement dans sa dernière année de mise en œuvre, sachant que le projet a bébéficié d'uneprolongation de 18 mois. Le processus d'EF doit suivre les directives décrites dans le document
«Directives pour réaliser les évaluations finales des projets appuyés par le PNUD et financés par le FEM».

II. HISTORIQUE ET CONTEXTE DU PROJECT

Au Maroc, les effets du changement climatique sont perceptibles depuis plusieurs années avec la diminution régulière de la disponibilité en eau, l'irrégularité de la production agricole et l'intensification des phénomènes climatiques extrêmes (sécheresses, inondations, augmentation du niveau de la mer, etc.).
Les impacts de ce changement climatique sont multiples et touchent plusieurs secteurs sensibles tels que les ressources en eau, l'agriculture, les forêts, les ressources naturelles, la biodiversité et la santé humaine. Les impacts sont également économiques, avec une grande vulnérabilité des secteurs du tourisme et des infrastructures, et sociaux avec l'augmentation de la pauvreté et le développement de la migration vers les villes. Ces impacts freinent le développement du Maroc et notamment au niveau des zones vulnérablestelles que les oasis, les forêts, les montagnes et le littoral.

Conscient de cette problématique et afin de pallier, le Maroc s'est engagé à adopter une approche intégrée, participative et responsable envers la lutte contre le changement climatique. La stratégie du Maroc est fondée sur deux principes, à savoir la mise en œuvre d'une politique d'atténuation des émissions de gaz à effet de serre, notamment par l'introduction de technologies propres, et la mise en place d'une politique d'adaptation qui prépare l'ensemble de sa population et de ses acteurs économiques à faire face à la vulnérabilité de territoire et son économie aux effets néfastes au changement climatique.

Le royaume a soumis récemment sa contribution prévue déterminée au niveau national (INDC) à la CCNUCC. Avec l'appui international, il s'engage à réduire ses émissions des gaz à effet de serre de 32% à l'horizon 2030. Cet objectif ambitieux a valu au Maroc le rating « Suffisant » du Global Climate Tracker plaçant le royaume au 3ème rang mondial juste après le Bhoutan et le Costa Rica. Ce classement confirme que les objectifs de réduction adoptés par le Royaume se situe à un niveau cohérant avec l'objectif planétaire de réduire les émissions des GES pour limiter le réchauffement climatique à une augmentation maximale de 2°C.

Cette volonté politique de lutter contre le réchauffement climatique est aujourd'hui reflétée dans la Charte Nationale de l'Environnement et du Développement Durable, initiée par sa Majesté le Roi Mohammed VI lors de ses discours de 2009 et de 2010, et de formalisée dans une Loi Cadre qui est devenue une référence pour les nouvelles politiques publiques du Royaume.

Le présent projet vise à promouvoir l'adoption de systèmes de pompage photovoltaïques (PV) pour l'irrigation localisée par la création d'un cadre propice à la mise en œuvre du programme national ; le renforcement des capacités des différents acteurs concernés ; l'appui à la sensibilisation des opérateurs et des agriculteurs sur l'intérêt économique et environnemental du pompage solaire ; la mise en œuvre de mécanismes de financement facilitant l'acquisition des systèmes PV de pompage ; la normalisation des installations

solaires pour l'irrigation ; et la mise en œuvre d'un cadre de suivi des impacts du projet en matière d'atténuation des émissions des GES.

Le Point Focal National du projet est l'Agence Marocaine pour l'Efficacité Energétique (AMEE). Le projet est mis en œuvre en étroite collaboration avec le MTEDD, le MAPMDREF, le GCAM, le MEF et d'autres partenaires.

L'objectif du projet est la mise en place d'un cadre propice au développement du pompage solaire et création des conditions favorables (techniques, financières, organisation et accompagnement) pour sa réussite.

Le projet est structuré en 4 produits ciblés par le programme selon les axes ci- après :

I. Les unités de pompage PV comprenant un ensemble de configurations sont conçues, évaluées,

installées et en cours de mise en œuvre à travers :

- L'Accompagnement des projets de pompage solaire grâce à des protocoles de configuration,
  d'implantation et de maintenance ;
- La Réalisation de projets de démonstration pour le potentiel de pompage d'eau par énergie solaire
  ;
- La Mise en place d'un schéma de disposition finale et de recyclage pour réduire les effets de fuite de
  réduction des émissions GES associées au projet ;
- La Mise en place d'un système de suivi et des indicateurs pour assurer de manière fiable le suivi de la consommation d'énergie, de l'eau et des réductions d'émissions de GES.

II. Un cadre propice de mise en œuvre durable et des standards pour les pratiques de pompage solaire et de fertirrigation sont développés :

- La Conception et mise en œuvre d'un modèle d'entreprise de service d'énergies renouvelables (RESCO) pour soutenir la mise en œuvre du Programme national de promotion pour le pompage solaire de l'eau d'irrigation ;
- La Conception et mise en place d'un système de contrôle de qualité ;
- L'Elaboration d'un outil de vulgarisation et d'accompagnement à la reconversion à l'irrigation localisée, à l'optimisation de la fertirrigation pour démontrer aux agriculteurs les avantages financiers immédiats du passage à un régime de fertirrigation optimal ;
- L'Elaboration d'un concept de NAMA en appui au programme.

III. Des Mécanismes de soutien financier et d'incitations sont identifiés, conçus et proposés au MEF

pour mise œuvre tels que :

- L'Appui des banques locales du secteur privé pour concevoir et offrir des produits financiers adaptés

aux agriculteurs pour soutenir l'adoption du pompage solaire ;
- La Proposition d'incitations et avantages fiscaux pertinents qui renforcent l'intérêt d'acquérir la
  technologie PV ;
- L'Analyse et proposition d'options pour un meilleur alignement des subventions avec les pratiques
  de fertirrigation durable.

IV. Les capacités des bénéficiaires sont renforcées dans le développement, de la mise en œuvre et la gestion des systèmes de pompage solaire et d'irrigation associés à travers :

- Renforcement des capacités des parties prenantes pour développer une prise de conscience et descapacités techniques locales en matière de technologie solaire de pompage, la planification des activités, de coûts de cycle de vie, l'assurance de qualité, de maintenance, d'approvisionnement etde commercialisation ;
- Renforcement des capacités de production nationale d'équipements et de composants à identifier;
- Formation des techniciens à la conception à l'installation, à l'exploitation et à la maintenance de
  système de pompage photovoltaïque ;
- Formation des professionnels de la finance à l'évaluation des projets de pompage solaire bancables;
- Renforcement des capacités des partenaires concernés dans l'application de pratique de
  fertirrigation optimale.

Le budget total du projet est de 73.542.726 USD, financés par le FEM à hauteur de 2.639.726 USD (Don), la contribution du Gouvernement Marocain s'élève à 70.803.000 USD, et celle du PNUD à 100.000 USD.

Enjeux du projet pour le Maroc

- Valoriser les efforts du secteur agricole dans l'atténuation des gaz à effet de serre ;
- Dégager des synergies avec les initiatives nationales en termes de réduction des gaz à effet de serre ;
- Innover des mécanismes de développement propre ;
- Se positionner parmi les projets structurants au niveau international.

La gestion du projet est placée sous la responsabilité du Directeur National du Projet (DNP). La premièreresponsabilité du DNP est de veiller à ce que le projet produise les résultats indiqués dans le document du projet et qu'ils soient livrés aux normes de qualité requises et en considération des contraintes de temps et de coût.

Les fonctions d'Agence d'exécution du FEM sont facilitées par le PNUD par un contrôle indépendant et objectif du projet, un appui technique et stratégique et un suivi de la qualité. Cela permet de veiller à ce que les exigences de gestion et les étapes du projet soient assurées et appuient l'atteinte des objectifs du projet.

Les entités de gouvernance et de gestion du projet GEF-Pompage Solaire sont comme suit :

- Le Comité de Pilotage : ce comité est responsable des décisions relatives à l'orientation stratégique du projet. Il se réunit au moins une fois par an ou en tant que de besoin. Toute question liée à la mise en œuvre, ou tout changement relatif à la conception ou à la portée du projet, devront être discutés par le comité de pilotage.

- L'Unité de Gestion de Projet (UGP) : cette unité est instaurée au sein de l'Agence Marocaine pour l'Efficacité Energétique (AMEE), et a pour mission principale la gestion de la réalisation du projet GEF-Pompage Solaire, sous la supervision directe du Directeur National du Projet et du Comité de Pilotage. Elle est composée d'un Coordonnateur National responsable de la gestion opérationnelle du projet à plein temps, assisté par une assistante technique, une assistante administrative et financière et des cadres de l'Agence Marocaine pour l'Efficacité Energétique (AMEE). L'UGP est chargée, conformément aux responsabilités qui incombent à chacun de ses membres.

- Les Comités thématiques de suivi du projet : ces comités sont mis en place pour assurer la concertation avec les partenaires lors de la préparation des termes de référence des activités inscrites dans le plan de travail annuel approuvé par le comité de pilotage, et le suivi de leur mise en œuvre.

- L'Assurance Qualité du projet : cette responsabilité est déléguée par le Comité de pilotage du projet au PNUD qui veillera au bon déroulement et à la qualité du projet. L'Assurance Qualité est assurée par une chargée de programme du PNUD.

Le projet GEF-Pompage Solaire soutient les Objectifs de Développement Durable (ODD) et plus directement l'ODD 2 ("Mettre fin à la faim, assurer la sécurité alimentaire et promouvoir une agriculture durable"), l'ODD 7 ("Energie abordable, fiable, durable et moderne pour tous"), l'ODD 13 ("Lutte contre le changement climatique et son impact") et l'ODD 15 ("La protection et l'utilisation durable des écosystèmes sur la terre").

Par ailleurs et au vu du contexte de la pandémie COVID-19, le projet a été impacté par la crise sanitaire qui a retardé la mise en œuvre des activités du projet notamment les activités de terrain (projets pilotes) et actions de sensibilisation. Cependant, le projet a poursuivi ses activités à distance moyennant des canaux de communication digitale.

V. OBJECTIFS DE L'EVALUATION FINALE

Le rapport d'EF doit évaluer la réalisation des résultats du projet par rapport à ce qui était prévu et tirer des leçons qui peuvent à la fois améliorer la durabilité des bénéfices de ce projet et contribuer à l'amélioration générale de la programmation du PNUD. Le rapport d'EF encourage la responsabilité et latransparence, et évalue l'étendue des réalisations du projet.

Cette évaluation devra permettre de :

(i) apprécier l'état de réalisation des activités,

(ii) estimer dans quelles mesures le projet a atteint ses objectifs en termes d'effets et

d'impact,

(iii) juger de l'adéquation des moyens mis en œuvre aux objectifs poursuivis,

(iv) identifier les problèmes de mise en œuvre et apprécier les solutions proposées,

(v) capitaliser sur les aménagements et/ou réorientations des activités, de financement et des méthodes de travail.

(vi) proposer des mécanismes visant l'institutionnalisation des acquis du projet, le plan de renforcement des capacités, les résultats des expertises thématiques élaborés par le projet en vue de leur intégration dans le cadre des plans et contrats programmes secoriels dans les domaines de l'agriculture et de l'énergie.

Elle a pour mandat :

1. L'examen des documents de base du projet, notamment le « document du projet » et son cadrelogique ainsi que les rapports annuels du projet ;
2. L'analyse de l'organisation du projet et de son montage institutionnel, afin de juger de son efficacité et de son degré d'adaptation aux spécificités du projet et à son environnement naturel et institutionnel ;
3. L'appréciation du rôle et succès du projet dans la mobilisation des partenaires et des acteurs ciblés ainsi que le degré de leur implication respective dans la réalisation des activités du projet ;
4. L'examen des pratiques de gestion durable réalisés dans les sites ciblés par le projet ;
5. L'évaluation du progrès enregistré à la fin du projet envers la réalisation des objectifs prévus, et
   l'analyse des défis ;
6. L'examen du budget et de la gestion financière ;
7. L'élaboration de propositions et recommandations pertinentes pour une stratégie de sortie duprojet, portant sur tous les enjeux identifiés. Par ailleurs, la mission esquissera et analysera l'intérêt et l'opportunité, le cas échéant, d'une éventuelle seconde phase du projet (deuxième tranche de financement).

En particulier, dans le cas du projet GEF-Pompage Solaire, les aspects suivants seront examinés :

- Evaluer le degré d'appropriation du projet et ses objectifs par les différents catégories cibles (agriculteurs, coopératives et associations agricoles, conseillers agricoles, cadres et techniciens agricoles, secteur privé du pompage solaire, secteur du financement, représentants des départmeents de la transition énergétique et du développement durable, secteur de l'eau),
- Dégager et approcher les changements induits par le projet en termes de comportements des agriculteurs, des coopératives et associations agricoles, des conseillers agricoles, des acteurs d'accompagnement intitutionnels du pompage solaire, des entreprises locales de services en énergies renouvelables et pompage solaire, du secteur du financement
- Faire ressortir l'impact du projet sur l'adoption de nouvelles des solutions propres recourant aux énergies renouvelables pour l'irrigation agricole, les pratiques et modes de conduite et de gestion del'irrigation agricole;
- Evaluer l'impact du projet sur l'évolution de la prise de conscience et le regain d'intérêt suscité par l'approche du projet auprès des agriculteurs, des coopératives et associations agricoles, des conseillers agricoles, des acteurs insitutionnels de l'agriculture, du secteur privé du pompage solaire, des acteurs du financement, représentants des départements de la transition énergétique et du développement durable, secteur de l'eau;

- Evaluer le degré d'intégration du projet dans les programmes et projets sectoriels des partenaires institutionnels au niveau de l'agricuture et l'irrigation agricole, de la transition énergétique, de l'environnement et du développement durable ;
- Analyser et évaluer la performance de la démarche et interventions du projet qui est à caractère institutionnel et innovateur dans ses chantiers en termes d'intégration dans la stratégie de transitionénergétique et de la statégie agricole
- Pertinence et l'adaptation ou non des indicateurs du suivi et de l'évaluation choisis aussi bien au contexte de mise en œuvre qu'aux exigences du document du projet ? Dans quelle mesure la batteriede critères retenus répondent et expriment les effets et les impacts aussi bien spécifiques que globaux du projet ?
- Statuer sur le système de S&E que le projet a mis en place durant sa durée, ainsi que les enseignements à tirer pour les autres projets.
- L'évaluation de l'impact induit par le projet et des différents chantiers ouverts et engagés par le projet avec les différents bureaux d'assistance technique en vue de mesurer l'évolution du projet et d'approcher le degré d'atteinte des objectifs prévus et de l'impact et effets éventuels sur les changements et modes opérés chez les bénéficiaires directs et indirects du projet.
- Evaluer l'impact de la pandémie du COVID-19 en termes de calendrier d'exécution, d'interventions sur le terrain, de mobilisation des parties prenantes et des conditions économiques et sociales des bénéficiaires.

VI. APPROCHE et MÉTHODOLOGIE

Les approches/méthodologies à adopter doivent permettre une mise en œuvre efficace de l'évaluation, y compris les directives de sécurité, des revues documentaires approfondies, l'utilisation prioritaire des consultants nationaux et le recours par les évaluateurs à des réunions et des entretiens virtuels avec les parties prenantes. Ces méthodologies et approches, ainsi que toutes les limitations rencontrées pendant le processus d'EF, doivent être détaillées dans le rapport initial d'EF et le rapport final d'EF

Le rapport d'EF doit ainsi fournir des informations fondées sur des données factuelles crédibles, fiables et utiles.

L'évaluateur doit examiner toutes les sources d'information pertinentes, y compris les documents élaborés pendant la phase de préparation (tels que le FIP, le plan de lancement du PNUD, la Procédure de détection des risques environnementaux et sociaux du PNUD/PDRES), le document de projet, les rapports de projet, dont les RMP annuels, les révisions du budget du projet, les rapports sur les enseignements tirés, les documents stratégiques et juridiques nationaux et tout autre matériel que l'évaluateur juge utile pour étayer cette évaluation. L'évaluateur doit examiner les indicateurs de base/outils de suivi de référence et à mi-parcours du domaine focal du FEM, soumis au FEM au moment de l'approbation du directeur et aux étapes de mi-parcours, ainsi que les indicateurs de base/outils de suivi qui doivent être complétés avant le début de la mission d'EF sur le terrain.

L'évaluateur doit suivre une approche participative et consultative garantissant une implication active de l'équipe projet, des homologues gouvernementaux (le point focal opérationnel du FEM), des partenaires de mise en œuvre, du bureau de pays du PNUD, du conseiller technique régional, des bénéficiaires directset d'autres parties prenantes.

La participation des parties prenantes est indispensable à la réussite de l'EF. Cette mobilisation doit consister en des entretiens avec les parties prenantes qui assument des responsabilités liées au projet, à savoir entre autres (PNUD, GEF, MTEDD, MAMPDREF, ONCA, AMEE, AMISOLE, GCAM, Tamwil El Fellah, Les coopératives et associations agricoles bénéficiaires du projet, les enntreprises de proximité RESOVERT). En outre, l'evaluateur est censé effectuer des missions sur le terrain ou les projets pilotes ont été initiés.

La conception et la méthodologie spécifiques de l'EF devraient ressortir des consultations entre l'équipe de l'EF et les parties susmentionnées quant à ce qui est approprié et réalisable pour atteindre le but et les objectifs de l'EF et répondre aux questions d'évaluation, compte tenu des contraintes de budget, de temps et de données. L'équipe de l'EF doit utiliser des méthodologies et outils tenant compte du genre et veiller à ce que l'égalité des sexes et l'autonomisation des femmes, ainsi que d'autres questions transversales etles ODD, soient intégrées dans le rapport d'EF.

L'approche méthodologique finale, y compris le calendrier des entretiens, les visites sur le terrain et les données à utiliser dans l'évaluation, doit être clairement exposée dans le rapport initial d'EF et faire l'objet d'une discussion approfondie et d'un accord entre le PNUD, les parties prenantes et l'équipe de l'EF.

Toutefois, une certaine souplesse sera permise pour permettre à l'équipe d'évaluation de déterminer les meilleurs outils et méthodes de collecte et d'analyse des données. Par exemple, les TdR peuvent suggérerd'avoir recours à des questionnaires, des visites sur le terrain et des entretiens, mais l'équipe d'évaluation doit pouvoir revoir cette approche en concertation avec le responsable de l'évaluation et les principales parties prenantes. Ces modifications de l'approche doivent être convenues au préalable et reprisesclairement dans le rapport initial d'EF).

Le rapport final doit décrire l'ensemble de l'approche adoptée pour l'EF et la justification de cetteapproche en rendant explicites les hypothèses sous-jacentes, les défis, les forces et les faiblesses concernant les méthodes et l'approche de l'évaluation.

S'il n'est pas possible de se rendre dans le pays ou de se déplacer à l'intérieur du pays pour la mission d'EF, l'évaluateur doit élaborer une méthodologie tenant compte de cette situation et prévoir de procéder à l'évaluation à distance et de façon virtuelle, en ayant notamment recours à des méthodes d'entretien à distance et à des revues documentaires approfondies, à l'analyse de données, à des enquêtes et à des questionnaires d'évaluation.Ce point doit être détaillé dans le rapport initial d'EF et convenu avec l'unité mandatrice.

Si tout ou partie de l'EF doit s'effectuer de manière virtuelle, il convient de tenir compte de la disponibilité, de la capacité ou de la volonté des parties prenantes d'être interrogées à distance. En outre, leur accès à Internet ou à un ordinateur peut poser problème, car de nombreux interlocuteurs gouvernementaux et nationaux peuvent travailler depuis chez eux. Ces limitations doivent être reflétées dans le rapport final d'EF.

Si la collecte de données/mission sur le terrain n'est pas possible, alors les entretiens pourraient s'effectuer à distance par téléphone ou en ligne (Skype, Zoom, etc.). Le

consultant international peut travailler à distance avec le soutien sur place des évaluateurs dans la mesure où ces derniers sont en mesure d'intervenir et de se déplacer en toute sécurité. Aucune partie prenante, aucun consultant ou membre du personnel du PNUD ne saurait être mis en danger et la sécurité est la priorité absolue.
Une courte mission de validation peut être envisagée si elle est jugée sans risque pour le personnel, les consultants et les parties prenantes, et si le calendrier de l'EF le permet. De même, des consultants nationaux qualifiés et indépendants peuvent être recrutés pour conduire l'EF et les entretiens dans le pays, si leur sécurité est garantie.

VII. PORTÉE DÉTAILLÉE DE L'EVALUATION FINALE

L'EF doit évaluer la performance du projet par rapport aux attentes énoncées dans le cadre logique/de résultats du projet (voir l'Annexe A des TdR). Elle doit évaluer les résultats par rapport aux critères décrits dans les Directives pour la réalisation des évaluations finales des projets appuyés par le PNUD et financés par le FEM.
La portée de l'EF doit détailler et inclure les aspects du projet qui seront couverts par l'EF, comme le calendrier, ainsi que les principales questions d'intérêt pour les utilisateurs que l'évaluateur doit aborder.La section du rapport d'EF sur les constatations doit couvrir les sujets énumérés ci-dessous. Une présentation complète du contenu du rapport d'EF est fournie en Annexe C des TdR.

Les critères nécessitant une notation sont marqués d'un astérisque (*).

CONSTATATIONS :

Conception/élaboration du projet :

- Priorités nationales et appropriation par le pays
- Théorie du changement
- Égalité des sexes et autonomisation des femmes
- Mesures de protection sociale et environnementale
- Analyse du cadre de résultats : logique et stratégie du projet, indicateurs
- Hypothèses et risques
- Enseignements tirés des autres projets pertinents (par exemple, dans le même domaine focal)incorporés dans la conception du projet
- Participation prévue des parties prenantes
- Les liens entre le projet et d'autres interventions au sein du secteur
- Modalités de gestion

Mise en œuvre du projet :

- Gestion adaptative (modification de la conception du projet et des produits du projet au cours de la
mise en œuvre)
- Participation réelle des parties prenantes et accords réels de partenariat
- Financement et cofinancement du projet
- Suivi et évaluation : conception à l'entrée (*), mise en œuvre (*) et évaluation globale du S&E

(*)

- Partenaire de mise en œuvre (PNUD) (*) et agence d'exécution (*), contrôle/mise en œuvre globale du projet et exécution (*)
- Gestion des risques, y compris les Norme environnementales et sociales

Résultats du projet :

- Évaluer la réalisation des résultats par rapport aux indicateurs en rendant compte du niveau de progrès pour chaque objectif et indicateur de résultat au moment de l'EF et en notant les réalisations finales
- Pertinence (*), Efficacité (*), Efficience (*) et réalisation globale du projet (*)
- Durabilité : financière (*), sociopolitique (*), du cadre institutionnel et de la gouvernance (*), environnementale (*) et probabilité globale de durabilité (*)
- Appropriation par les pays
- Égalité des sexes et autonomisation des femmes
- Questions transversales (réduction de la pauvreté, amélioration de la gouvernance, atténuation des changements climatiques et adaptation à ceux-ci, prévention des catastrophes et relèvement, droits fondamentaux, renforcement des capacités, coopération Sud-Sud, gestion des connaissances, volontariat, etc., selon les cas)
- Additionnalité du FEM
- Rôle de catalyseur / Effet de réplication
- Progrès vers l'impact

Principales constatations, conclusions, recommandations et enseignements tirés

- L'EF doit inclure un résumé des principales constatations. Les constatations doivent être présentées
  sous forme d'énoncés de faits fondés sur l'analyse des données.
- La section sur les conclusions est rédigée à la lumière des constatations. Les conclusions doivent être exhaustives et équilibrées, largement étayées par les preuves et s'inscrire dans la logique des constatations de l'EF. Elles doivent mettre en avant les forces, les faiblesses et les résultats du projet, répondre aux principales questions de l'évaluation et donner des pistes de réflexion pour l'identification et/ou la résolution des problèmes importants ou des questions pertinentes pour les bénéficiaires du projet, le PNUD et le FEM, y compris les questions relatives à l'égalité des sexes et à l'autonomisation des femmes.
- Le rapport doit présenter des recommandations concrètes, pratiques, réalisables et à l'attention desutilisateurs cibles de l'évaluation concernant les mesures à adopter ou les décisions à prendre. Les recommandations doivent être spécifiquement étayées par des preuves et liées aux constatations etaux conclusions relatives aux questions clés traitées par l'évaluation.
- Le rapport d'EF doit également comprendre les enseignements qui peuvent être tirés de l'évaluation, y compris les meilleures pratiques concernant la pertinence, la performance et le succès, qui peuvent fournir des connaissances acquises à partir de circonstances particulières (les méthodes de programmation et d'évaluation utilisées, les partenariats, les leviers financiers, etc.) applicables à d'autres

interventions du FEM et du PNUD. Lorsque c'est possible, l'équipe de l'EF doit inclure des exemples de bonnes pratiques concernant la conception et la mise en œuvre du projet.

- Il est important que les conclusions, les recommandations et les enseignements tirés du rapport d'EF intègrent l'égalité des sexes et l'autonomisation des femmes.

Le rapport d'EF comprendra un tableau de notations d'évaluation, comme présenté ci-dessous :

Table 35 : Tableau de notations d'évaluation pour le projet GEF-Pompage Solaire

Suivi et évaluation (S&E)	Note[1]
Conception du S&E à l'entrée	
Mise en œuvre du plan de S&E	
Qualité globale du S&E	
Mise en œuvre et exécution	Note
Qualité de la mise en œuvre/du contrôle du PNUD	
Qualité de l'exécution par le partenaire de mise en œuvre	
Qualité globale de la mise en œuvre/exécution	
Évaluation des résultats	Note
Pertinence	
Efficacité	
Efficience	
Note de la réalisation globale du projet	
Durabilité	Note
Ressources financières	
Socioéconomique	
Cadre institutionnel et de gouvernance	
Environnementale	
Probabilité globale de durabilité	

VIII. CALENDRIER

La durée totale de l'EF sera d'environ (25-30) jours ouvrables en moyenne) sur une période de six semainesà compter du (20/05/ 2022). Le calendrier provisoire de l'EF est le suivant :

Calendrier	Activité
(13./…05./2022)	Clôture des candidatures
(17/05/2022)	Sélection de l'évaluateur
(23./05/2022)	Période de préparation de l'EF (communication des documents de projet)
(30/05./2022)	Examen des documents et préparation du rapport initial d'EF
(15/06./2022)	Finalisation et validation du rapport initial d'EF – au plus tard au début de la mission d'EF
(16/06/2022)	Mission d'EF : réunions avec les parties prenantes, entretiens, visites sur leterrain, etc.

(20/06/2022)	Réunion de clôture de la mission et présentation des premièresconstatations – au plus tôt à la fin de la mission d'EF
(27-01./07./2022)	Préparation du projet de rapport d'EF
(04./07./2022)	Diffusion du projet de rapport d'EF pour commentaires
(10./07/2022)	Intégration des commentaires sur le projet de rapport d'EF dans la pisted'audit et finalisation du rapport d'EF
(18./07/2022)	Préparation et publication de la réponse de la direction
(21/07/2022)	Atelier de clôture avec les parties prenantes
(31./07./2022)	Date prévue de l'achèvement de l'ensemble du processus d'EF

[1]Les réalisations, l'efficacité, l'efficience, le S&E, la mise en œuvre/le contrôle et l'exécution, la pertinence sont notés sur une échelle de six points : 6=Très satisfaisant (TS), 5=Satisfaisant (S), 4=Moyennement satisfaisant (MS), 3=Moyennement insatisfaisant (MI), 2=Insatisfaisant (I), 1=Très insatisfaisant (TI). La durabilité est notée sur une échelle de quatre points : 4=Probable (P), 3=Moyennement probable (MP), 2=Moyennement improbable (MI), 1=Improbable (I)

Il peut être envisagé une extension de délai si l'évaluation est retardée d'une manière ou d'une autre enraison de la COVID-19.
Les options pour les visites de sites doivent figurer dans le rapport initial d'EF.

IX. DOCUMENTS À PRODUIRE DANS LE CADRE DE L'EVALUATION FINALE

#	Élément livrable	Description	Calendrier	Responsabilités
1	Rapport initial d'EF	L'évaluateur précise lesobjectifs, la méthodologie et le calendrier de l'EF	Au plus avant lamission d'EF : (30./05/2022)	L'évaluateur soumet le rapport initial à l'unité mandatrice et à la direction du projet
2	Présentation	Premières constatations	Fin de la mission d'EF : (20./06/2022)	L'évaluateur présente ses constatations à l'unité mandatrice et à la direction du projet
3	Projet de rapport d'EF	Projet de rapport complet conformémentaux directives de l'Annexe C des TdR avecles annexes	Dans la semaine suivant la fin de lamission d'EF : (04/07/2022)	L'évaluateur soumet le projet de rapport à l'unité mandatrice; il est ensuite révisé par le CTR, l'unité coordinatrice du projet et le PFO FEM

5	Rapport final d'EF* dans les deux versions Française et Anglaise + piste d'audit	Rapport final révisé et piste d'audit de l'EF danslaquelle l'EF détaille comment il a été donné suite (ou non) aux commentaires reçus dans le rapport final d'EF (voir le modèle en Annexe H des TdR)	Dans la semaine suivant la réceptiondes commentaires sur le projet de rapport : (31/07/2022)	L'évaluateur soumet les deux documents à l'unitémandatrice

*Tous les rapports finaux d'EF seront soumis à une analyse de la qualité effectuée par le Bureau indépendant d'évaluation (BIE) du PNUD. Pour plus de détails sur l'analyse qualité des évaluations décentralisées réalisée par le BIE, veuillez consulter la section 6 du Guide d'évaluation du PNUD[2].

[2] Disponible sur : http://web.undp.org/evaluation/guideline/French/section-6.shtml

X. DISPOSITIONS RELATIVES À L'EVALUATION FINALE

La responsabilité principale de gérer l'EF incombe à l'unité mandatrice. L'unité mandatrice de ce projet d'EF est le bureau de pays du PNUD.

L'unité mandatrice passera un contrat avec les évaluateurs et s'assurera que l'évaluateur disposera en temps utile des facilités de voyage dans le pays. L'équipe projet sera chargée de prendre contact avec l'évaluateur afin de lui fournir tous les documents nécessaires, préparer les entretiens avec les parties prenantes et organiser les visites sur le terrain.

L'unité mandatrice et l'équipe du projet apporte le soutien pour l'organisation de réunions virtuelles/à
distance en cas de besoin. L'unité mandatrice devra fournir une liste mise à jour des parties prenantes etde leurs coordonnées (téléphone et courriel) à l'équipe du projet.

XI. QUALIFICATION ET EXPERIENCES REQUISES

Un évaluateur indépendant conduira l'EF – ayant l'expérience des projets et des évaluations dans d'autresrégion. L'évaluateur sera responsable de la conception générale et de la rédaction du rapport d'EF et de la coordination de la mission. L'expert(e) sera chargé(e) d'évaluer les tendances naissantes concernant les cadres réglementaires, les allocations budgétaires, le renforcement des capacités, de travailler avec l'équipe projet pour définir l'itinéraire de la mission d'EF, etc.).
L'évaluateur ne peut pas avoir participé à la préparation, la formulation, et/ou la mise en œuvre du projet(y compris la rédaction du Document de projet), ne doit pas avoir effectué l'évaluation de ce projet et ne doit pas avoir de conflit d'intérêts en relation avec les activités liées au projet.
L'évaluateur sera sélectionné sur la base des compétences suivantes :

1/ Expert (e) National (e) ou International (e)

Éducation

- Diplôme master en techniques d'évaluation/Environnement/Développement Durable/Energies
  /Agricuture ou tout autre domaine étroitement lié;

Expérience

- Expérience récente dans les méthodologies d'évaluation de la gestion axée sur les résultats;
- Expérience dans l'application d'indicateurs SMART et dans le remaniement ou la validation des
  scénarios de départ;
- Compétences dans le domaine des énergies renouvelables et du pompage solaire ;
- Compétence dans le domaine de l'environnement agricole
- Expérience professionnelle dans l'évaluation des projets;
- Expérience professionnelle d'au moins 10 ans dans l'évaluation des projets de développement ;
- Compréhension avérée des questions liées au genre dans le domaine de l'énergie - agriculture;
- Excellente aptitude à la communication;
- Compétences avérées en matière d'analyse;
- Une expérience dans l'évaluation/la révision de projet dans le système des Nations Unies seraconsidérée comme un atout ;
- Une expérience dans la mise en œuvre d'évaluations à distance sera considérée comme un
  atout.

Langue

- Maîtrise de l'anglais et le français à l'écrit et à l'oral.

XII. CODE DE DÉONTOLOGIE DE L'ÉVALUATEUR

L'évaluateur est tenue de respecter les normes éthiques les plus élevées et de signer un code de conduite
à l'acceptation de la mission. Cette évaluation sera menée conformément aux principes énoncés dans les
«Directives éthiques pour l'évaluation» du GNUE. L'évaluateur doit protéger les droits et la confidentialité des informateurs, des personnes interrogées et des parties prenantes en prenant des mesures pour assurer le respect des codes juridiques et autres codes pertinents régissant la collecte et la communication des données. L'évaluateur doit également assurer la sécurité des informations collectées avant et après l'évaluation et respecter des protocoles visant à garantir l'anonymat et la confidentialité des sources d'information lorsque cela est prévu. Par ailleurs, les informations et les données recueillies dans le cadre du processus d'évaluation doivent être utilisées uniquement pour l'évaluation et non à d'autres fins sans l'autorisation expresse du PNUD et de ses partenaires.

XIII. MODALITÉS DE PAIEMENT ET SPÉCIFICATIONS

- Versement de 20 % du paiement après la présentation satisfaisante de la version finale du rapport initial d'EF et après approbation de l'unité mandatrice
- Versement de 40 % du paiement après la présentation satisfaisante du projet de rapport d'EF à l'unité mandatrice
- Versement de 40 % du paiement après la présentation satisfaisante du rapport final d'EF et aprèsapprobation de l'unité mandatrice et du CTR (via les signatures sur le formulaire d'approbation du rapport d'EF), et une fois soumise la piste d'audit de l'EF

Critères à remplir pour émettre le paiement final de 40 %[3]

- Le rapport final d'EF comprend toutes les exigences énoncées dans les TdR de l'EF et suit lesdirectives relatives à l'EF.
- Le rapport final d'EF est rédigé clairement, organisé de façon logique et il est spécifique au
  projet concerné (le texte n'a pas été copié et collé à partir d'autres rapports d'évaluation).
- La piste d'audit inclut les réponses et les justifications de tous les commentaires recensés.

Conformément au règlement financier du PNUD, lorsque l'unité mandatrice et/ou le consultant déterminent qu'un livrable ou qu'un service ne peut être fourni de manière satisfaisante en raison de l'impact de la COVID- 19 et des limitations sur l'EF, ce livrable ou ce service ne sera pas payé.

En raison de la situation actuelle et des implications de la COVID-19, un paiement partiel peut être envisagé à hauteur du temps investi dans la production du livrable dont il n'a pu assurer la fourniture complète en raison de circonstances échappant à son contrôle.

XIV. PROCESSUS DE PRÉSENTATION DES CANDIDATURES

Présentation recommandée de la proposition :

[3] L'unité mandatrice est tenue d'effectuer les paiements à l'équipe de l'EF dès que les conditions prévues dans les TdR sont remplies. Si unediscussion continue oppose l'unité mandatrice à l'équipe de l'EF quant à la qualité et à l'exhaustivité des derniers éléments livrables, le conseiller régional S&E et la direction du fonds vertical doivent être consultés. Si nécessaire, la haute direction de l'unité mandatrice, l'unitédes services d'achat et le bureau d'appui juridique seront également informés afin qu'une décision puisse être prise quant à la rétention ou non du paiement de tout montant qui pourrait être dû à l'évaluateur ou aux évaluateurs, à la suspension ou à la résiliation du contrat et/ou au retrait du contractant concerné de toutes les listes pertinentes. Pour plus de détails, voir la Politique du PNUD en matière de contrat individuel : https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PSU_Individual%20Contr act_Individual%20Contract%20Policy.docx&action=default

a) Lettre de confirmation d'intérêt et de disponibilité à l'aide du modèle[4] fourni par le PNUD;
b) CV et Notice personnelle (Formulaire P11)[5] ;
c) Brève description de l'approche de travail/proposition technique indiquant les raisons pour lesquelles la personne estime être la mieux placée pour réaliser la mission attribuée, et méthodologie proposée indiquant de quelle manière elle abordera et réalisera la mission attribuée (1 page max)
d) Proposition financière indiquant le montant total tout compris du contrat et de tous les autres frais de déplacement associés (billet d'avion, per diem, etc.), en répartissant les coûts à l'aide du modèle joint au modèle de Lettre de confirmation d'intérêt. Dans le cas où un candidat travaillerait pour une organisation/entreprise/institution et prévoirait la facturation par son employeur des frais de gestion relativement à la procédure pour qu'il soit mis à la disposition du PNUD en vertu d'un accord de prêt remboursable (RLA), le candidat devra le signaler ici et s'assurer que tous les frais associés sont compris dans la proposition financière soumise au PNUD.

Critères d'évaluation de la proposition : seules les propositions conformes aux critères seront évaluées.Les propositions seront évaluées selon une méthode combinant plusieurs notations – où la formation et l'expérience dans des fonctions similaires compteront pour 70 % et le tarif proposé comptera pour 30 % la note totale. Le contrat sera attribué au candidat qui obtiendra la meilleure note combinée et aura accepté les conditions générales du PNUD.

Phase 1 : Evaluation technique des offres

L'évaluation technique sera effectuée sur la base des critères suivants :

Critères	Notation
Méthodologie	30
Note méthodologique proposée Non conforme : Incohérente ou non conforme aux TdRs ou omission d'un élément essentiel qui touche à la substance des TdRs(mauvaise compréhension) (0 point) ; Simple : Reprend de manière très simple les termes de référence (15 points) ; Améliorée : Bon niveau de détail, innovation et valeur ajoutée, pertinence de l'approche présenté Conforme aux TDRs, détaillants la consistance avecbonne compréhension de l'ensemble des missions et apportant une valeur ajoutée (Enrichissement ou nouvelle propositions pertinentes) (30 points) ;	30
Profil de l'évaluateur	70
Diplôme master en Evaluation/Environnement/Développement	10

Durable/Energies ou tout autre domaine étroitement lié ;	
Expérience dans le domaine des énergies renouvelables, du pompage solaire, de l'irrigation agricole; <5 ans : 0 points 5-10 : 10 points >10 ans : 20 points	20

[4] https://intranet.undp.org/unit/bom/pso/Support%20documents%20on%20IC%20Guidelines/Template%20for%20Confirmation%20of%20Interest%20and%20Submission%20of%20Financial%20Proposal.docx

[5] http://www.undp.org/content/dam/undp/library/corporate/Careers/P11_Personal_history_form.doc

Expérience professionnelle dans l'évaluation des projets financés par le FEM ;(au moins 1 référence)	15
Expérience professionnelle dans l'évaluation des projets de développement ; (5 points par référence/Evaluations)	25
Total	100

XV. DEPOTS DES OFFRES

Tous les documents associés à la candidature devront être envoyés à l'adresse (13, Avenue AhmedBalafrej Souissi Casier ONU, Poste Rabat-Chellah 10 000 Rabat Morocco) dans une enveloppe cachetée portant la référence suivante : IC 04-05-2022 : « Consultant pour l'évaluation finale du Projet GEF-Pompage Solaire Promotion du développement des systèmes de pompage photovoltaïques pour l'irrigation au Maroc », ou par courrier électronique à l'adresse suivante UNIQUEMENT : registry.ma@undp.org d'ici au 13/05 à 16 h00 (Heure de Rabat) . Les candidaturesincomplètes ne seront pas examinées.

8.2. Project Results Framework

Ce projet contribuera à la réalisation de l'Effet suivant du Programme Pays : Les principes de la Charte Nationale de l'Environnement et du Développement Durable sont mis en œuvre en assurant la cohérence entre les stratégies sectorielles et les priorités en matière d'environnement, d'adaptation aux changements climatiques et de gestion des risques et en renforçant la convergence territoriale dans les zones et pour les populations les plus vulnérables, avec une attention particulière au genre					
Indicateurs de Résultats du Programme Pays : Indicateur 5.1.1 : Nombre de stratégies produites/revues de manière cohérente et intégrant les principes de la CNEDD Indicateur 5.3.1 : Nombre de stratégies élaborées en matière d'atténuation et d'adaptation au CC Indicateur 5.3.2 : Nombre d'entités ayant bénéficié de renforcement des capacités en matière de CC et gestion des risques					
Domaine de Résultat Clé « Environnement et Développement durable » Principalement Applicable : 1. Intégrer l'environnement et l'énergie OU 2. Catalyser la finance environnementale OU 3. Promouvoir l'adaptation aux changements climatiques OU 4. Étendre l'accès aux services environnementaux et énergétiques aux personnes pauvres.					
Objectif applicable du domaine d'intervention du FEM : CCM 3 – « Promouvoir l'investissement dans les technologies d'énergie renouvelable »					
	Indicateur	**Situation de référence**	**Cible en fin de projet**	**Source de vérification**	**Risques et hypothèses**
Objectif du Projet : Promouvoir l'adoption de systèmes de pompage photovoltaïque[10] pour l'irrigation localisée au Maroc	Nombre supplémentaire de tonnes d'émissions de CO_2 évitées par an (en plus du scénario de référence et attribuées au projet)	0	11 697 tCO_2/an Total de 233 940 tCO_2 sur la durée de vie de 20 ans de toutes les pompes	Rapports trimestriels de suivi de l'état d'avancement (ces rapports comporteront une section réservée au suivi des réductions d'émissions). Cette section sera alimentée par le système d'information élaboré pour le calcul et le suivi des réductions d'émissions.	**Hypothèse** : Réduction d'émissions directes sur une base annuelle, en appliquant un facteur de causalitédu FEM de 60%[11]. **Risque** : Fuites liées à la réutilisation des pompes à combustible substituées
	• Nombre de pompes solaires installées (cumulative) • Combustible économisé (tep/an)	1 500 2 700 tep/an	3 750 4 050 tep/an[12] (942 020 MWh sur la durée de vie)	Rapports trimestriels de suivi de l'état d'avancement	Hypothèse : application quesd'un facteur de causalité du FEM de 60%. Risque : voir section 8 sur les risques de retard de mise en œuvre des modalités opérationnelles d'octroi des subventions et de réalisation des projets de pompage solaire

[10] Objectif (Atlas output) suivi trimestriellement ERBM et annuellement en APR/PIR

[11] En raison du facteur de causalité, la réduction d'émissions associée au Projet est ainsi évaluée à 11 697 tCO_2, soit la différence entre la cible en fin de projet (19 495 tCO_2) et la situation de référence (7 798 tCO_2)

[12] Application d'un facteur de causalité de 60% équivalent à 47 101,5 MWh (942 020 MWh durant la durée de vie) - http://www.iea.org/statistics/resources/unitconverter/ -

	Nombre de nouveaux partenariats avec des RESCOs promus pour la fourniture de solutions améliorées d'efficacité énergétiques et/ou d'énergie durable ciblant les communautés/groupes mal desservis et les femmes.	0	5 RESCOs créées ou accompagnées	Rapports trimestriels de suivi de l'état d'avancement Liste des RESCOs ayant bénéficié de renforcement de capacités et d'assistance technique Statistiques et rapports d'activités des banques partenaires	Hypothèse : les activités du projet catalyseront avec succès l'intérêt des RESCO du secteur privé pour les produits et opportunités de marché du pompage solaire
	Nombre de personnes (femmes et hommes) bénéficiant d'un accès amélioré à des plateformes d'énergie durable	0	18 750 (3 750 systèmes de pompage solaire bénéficiant à 3 750 foyers ruraux composés en moyenne de 5 personnes chacun)	Rapports trimestriels de suivi de l'état d'avancement	Hypothèse : la cible du nombre de pompes solaires installées est atteinte
Produit 1[13] : **Les unités de pompage PV comprenant un ensemble de configurations sont conçues, évaluées, installées et en cours de mise en œuvre**	Puissance cumulée des pompes solaires installées – kW	9 560 kW	23 900 kW	Rapports trimestriels de suivi de l'état d'avancement	Hypothèse : application d'un facteur de causalité du FEM de 60%. Risque : voir section 8.0 sur les risques de retard de mise en œuvre des modalités opérationnelles d'octroi des subventions et de réalisation des projets de pompage solaire
	Nombre d'unités de pompage PV de démonstration de grande taille installées / (femmes et hommes)	0	10	Rapports trimestriels de suivi de l'état d'avancement	
	Disponibilité d'un système MRV	Non : absence de procédures et de système de suivi et d'évaluation des émissions et des impacts du programme	Oui : Système MRV conçu et opérationnalisé pour assurer de manière fiable le suivi des avancées du projet et des réductions d'émissions de GES	Rapport de conception du système MRV, Rapports trimestriels de suivi de l'état d'avancement	Hypothèse : bonne coopération entre les agriculteurs ciblés pour le reporting des informations opérationnelles des systèmes solaires installés

[13] Tous les produits sont suivis annuellement dans le APR/PIR. Il est vivement recommandé de ne pas définir plus de 4 produits.

Produit 2 : **Un cadre de mise en œuvre durable et des standards pour les pratiques de pompage solaire et de fertirrigation en goutte à goutte sont développés**	Nombre de RESCOs créées ou accompagnées	0	5	Rapports trimestriels de suivi de l'état d'avancement retraçant la liste des RESCOs ayant bénéficié des activités de renforcement de capacités et d'assistance technique du projet	
	Disponibilité de procédures de normalisation et de labellisation des équipements (Oui/Non)	Non : Absence de procédures de normalisation et de labellisation des principaux composants de pompage solaire	Oui : Des procédures de normalisation et de labellisation sont adoptées, testées et en place pour les principaux composants de pompage solaire	Rapports trimestriels de suivi de l'état d'avancement, rapports d'activité de l'ADEREE	
	Disponibilité d'un système d'audit et d'évaluation de la qualité des installations (Oui/Non)	Non : Absence de contrôle des systèmes de pompage PV	Oui : un système d'audit et d'évaluation de la qualité des systèmes de pompage PV est développé	Rapports trimestriels de suivi de l'état d'avancement	
	Disponibilité d'un outil d'information sur le régime optimal de dosage d'engrais en irrigation localisée et de calcul des économies de coûts pour les agriculteurs (Oui/Non)	Non : Absence d'information des agriculteurs sur la gestion optimale de la fertirrigation et ses avantages financiers	Oui : Un outil d'information sur le régime optimal de dosage d'engrais en irrigation localisée et de calcul des économies de coûts pour les agriculteurs est conçu et opérationnel	Rapport de conception de l'outil d'information sur la fertirrigation, Rapports trimestriels de suivi de l'état d'avancement	Hypothèse : Participation active des services ministériels régionaux à la sensibilisation des agriculteurs sur l'intérêt d'optimiser la fertirrigation
	Disponibilité d'un concept de NAMA actualisé en appui au programme d'installation du pompage PV (Oui/Non)	Non : Absence d'un concept de NAMA actualisé en appui au programme national de pompage solaire	Oui : Le concept de la NAMA actualisé et validé pour soumission au registre NAMA de la CCNUCC	Document de NAMA Rapports trimestriels de suivi de l'état d'avancement	Hypothèse : Engagement du Gouvernement marocain à adopter, appuyer, suivre et vérifier la NAMA proposée

Produit 3 : Des mécanismes de soutien financier et d'incitations sont identifiés, conçus et proposés en collaboration avec le MEF pour mise œuvre	Nombre de banques impliquées dans le programme	0 : Les banques locales privées ne sont pas impliquées dans le financement du programme	4 banques locales privées totalement impliquées dans le financement du programme	Rapports trimestriels de suivi de l'état d'avancement, Rapports statistiques et d'activités des banques partenaires	En supposant une perception positive des banques de ce segment de marché
	Disponibilité d'incitations fiscales au pompage solaire (Oui/Non)	Non : Absence d'incitations fiscales au pompage solaire	Oui : Incitations/instruments fiscaux pertinents conçus en collaboration avec le Ministère des Finances pour adoption	Rapport d'analyse de modélisation dynamique, Rapports trimestriels de suivi de l'état d'avancement	Adhésion du Ministère des Finances à l'approche de modélisation et son accord pour l'approbation des instruments proposés
	Disponibilité d'une analyse des options d'alignement des subventions aux engrais avec les pratiques de fertirrigation durables en goutte à goutte	Non : Absence d'options d'alignement	Oui : Les options d'alignement des subventions aux engrais avec les pratiques de fertirrigation durables en goutte à goutte sont analysées	Rapport d'analyse des options Rapports trimestriels de suivi de l'état d'avancement du projet	Adhésion du Ministère de l'Agriculture et du Ministère des Finances à l'analyse
Produit 4 : Les capacités des bénéficiaires sont renforcées dans le développement, la mise en œuvre et la gestion des systèmes de pompage solaire et d'irrigation goutte à goutte associés	Nombre d'acteurs dont les capacités techniques sont renforcées concernant la technologie PV, son entretien et sa commercialisation	0	400	Rapports de formation, rapports du projet, rapport de communication et de sensibilisation, compte rendu du comité de pilotage du projet	
	Nombre de techniciens formés (femmes et hommes) spécialisés en conception, installation, exploitation et maintenance des systèmes de pompage solaire	0	30	Rapports de formation, Rapports trimestriels de suivi de l'état d'avancement	Adhésion des organismes de formation professionnelle
	Nombre de professionnels de la finance dont les capacités d'évaluation des projets de pompage solaire sont renforcées (femmes et hommes)	0	40	Rapports de formation, Rapports trimestriels de suivi de l'état d'avancement	Adhésion des banques commerciales au projet

	Nombre d'acteurs dont les capacités sont renforcées en matière de maîtrise optimale des pratiques de fertirrigation (agriculteurs, associations d'usagers de l'eau, agences régionales de développement agricole, RESCO et banques)	0	160	Rapports de formation, Outils de communication et de formation Rapports trimestriels de suivi de l'état d'avancement	Adhésion de l'Agence de Développement Agricole et du Ministère de l'Agriculture

8.3. Status of the GEF-SP project achievements at its closure (April 2022)

Indicator	Baseline	Target at the end of the project	Status of output achievement	Achievement rate
Output 1. PV pumping units consisting of a range of configurations are designed, evaluated, installed, and being implemented				
Cumulative power of installed solar pumps in kW	9.560 kW	23.900 kW	The cumulative number of indirectly supported projects: 13163 kWp, for the period 2018-June 2020, and a partial figure of 10085.5 kWp for the period July 2020-January 2022, i.e. a total of 23221.5 kWp equivalent to 97% of the project target (2809 projects).	**97,1%**
			As the national subsidy programme is not operational, the GEF-Solar Pumping project carried out traceability approaches for some of the solar pumping market during the period 2020-January 2022, through surveys of the Resoverts and AMISOLE companies trained and supported by the project, as well as the Crédit Agricole and Tamwil El Fellah which finance projects.	**Not operational**
Number of large demonstration solar pumps installed.	0	10	54 projects examined 20 projects selected 16 conventions signed between AMEE and the beneficiaries for the realization of demonstration projects. 14 projects achieved. The pilot projects are carried out on the basis of an implementation model combining technical, quality and installation label aspects.	**140%**
Availability of MRV system.	Lack of procedures and systems for monitoring and evaluating emissions and program impacts.	MRV system designed and implemented to reliably monitor project progress and GHG emission reductions.	In support of the MRV system, a computerized remote monitoring tool for real-time monitoring of energy performance and gains in terms of CO2 avoided has been designed.	**100%**
Output 2. A sustainable implementation framework and standards for solar pumping and drip fertigation practices are developed.				
Number of RESCOs established	0	5	4 regional networks comprising 80 specialised small enterprises structured and supported (including 10	200%

			small new enterprises created on 5 targets).	
Availability of procedures for standardisation and labelling of equipment.	Lack of standardisation and labelling procedures for the main solar pumping components.	Standardisation and labelling procedures are adopted, tested, and implemented and operational for the main solar pumping components.	Creation by AMEE, the Solar Cluster and AMISOLE of the Taqapro-Solar Pumping Label. Labelling of 63 companies specialised in solar pumping. Adoption in 2020 of 19 solar photovoltaic norms. Development and dissemination of a manual on minimal technical requirements based on the relevant normative reference.	100%
Availability of a system for auditing and evaluation of the quality of installations.	Lack of control of PV pumping systems.	A system for auditing and evaluation of the quality of installations is established	A quality referential for equipment, systems and services related to PPV has been developed and shared with relevant partners. Upgrading of the AMEE PV simulator for quality assessment of solar modules.	100%
Availability of a tool for informing farmers about the optimal fertiliser dosage in localised irrigation and for calculating cost savings.	Farmers' lack of information about optimal fertigation management and its financial benefits	A tool providing information on the optimal fertiliser dosage in localised irrigation and calculating cost savings for farmers is designed and operational	A technical information manual on the optimal fertilizer dosing in localized irrigation and calculation of cost savings for farmers has been prepared in Arabic and French.	100%
Availability of an updated NAMA concept to support the PV pumping installation programme.	Lack of an updated NAMA concept to support the national solar pumping programme.	The NAMA concept updated and validated for submission to the UNFCCC NAMA register.	The NAMA solar pumping document has been updated.	100%
Output 3. Financial support and incentive mechanisms are identified, designed and proposed in collaboration with MEF for implementation				
Number of banks involved in the program.	0	4 local private banks fully involved in financing the program.	Several local banks are involved in financing renewable energy and energy efficiency projects (solar roofs, solar pumping): Bank of Africa, Crédit Agricole, Tamwil El Fellaf, Attijari Wafabank, Banque Populaire.	100%
Availability of fiscal incentives for solar pumping.	Lack of fiscal incentives for solar pumping.	Relevant tax incentives/instruments designed in collaboration with the Ministry of Finance for adoption	VAT exemptions for solar pumps from 2019 and 2020 have been adopted. VAT exemptions for solar panels have occurred in 2020 and 2021 (without deduction), proposal for 2022 with a right of deduction.	100%
Availability of an analysis of	Lack of	Options for aligning	The technical information	100%

options for aligning subsidies to sustainable fertigation practices in drip irrigation practices.	alignment options	fertilizer subsidies with sustainable drip irrigation practices are examined	manual on fertigation includes a model for calculating savings. The national subsidy program for solar pumps is not yet operational.	
Output 4. Beneficiaries' capacities are strengthened in the development, implementation and and management of solar pumping and drip irrigation systems				
Number of beneficiaries whose technical capacity is strengthened in PV technology, maintenance, and marketing.	0	400 beneficiaries	580	145%
Number of technicians (women and men) specialised in the design, installation, operation, and maintenance of solar pumping systems.	0	30 Technicians	100	333%
Number of finance professionals whose capacity to evaluate solar pumping projects is strengthened (women and men).	0	40 Professionals	44	110%
Number of stakeholders whose capacities are strengthened in terms of optimal control of fertigation practices (farmers, water users' associations, regional agricultural development agencies, RESCO and banks).	0	160 Beneficiaries	320	200%

Table 36 : Status of the GEF-SP project achievements at its closure (April 2022)

8.4. List of people interviewed

Nom, prénom, qualité	Organisation / Titre	Mode de consultation	Date
BADISS, Mahmoud Chef service Certification	Direction de l'Irrigation, de l'Agriculture, de la Pêche maritime, du Développement rural et des Eaux et Forêts, Rabat, Maroc	Entretien en présentiel	18.07.2022 à 10:00
OUHMED, Mohamed Directeur des Énergies renouvelables et de l'Efficacité Énergétique	Ministre de la Transition énergétique et du Développement durable, Rabat, Maroc	Prévoir une seule réunion en présentiel	18.07.2022 à 14:00
LAABDAOUI, Aicha Chef division Efficacité Énergétique	Ministre de la Transition énergétique et du Développement durable, Rabat, Maroc	Prévoir une seule réunion en présentiel	18.07.2022 à 14:00
OUKESSOU, Niama Cadre	Crédit Agricole du Maroc, Direction Financement du Développement Durable, Rabat, Maroc	Entretien en présentiel	19.07.2022 à 10:00
BOUCHOUATA, Ouafaa Cheffe de service	Département de l'Environnement, Rabat, Maroc	Entretien en présentiel	19.07.2022 à 14:00
BAKKALI, Mohamed Directeur	Office National du Conseil Agricole (ONCA), Rabat, Maroc	Prévoir une seule réunion en présentiel	20.07.2022 à 10 :00
HAMIMAZ, Meriem Cheffe de service	Office National du Conseil Agricole (ONCA), Rabat, Maroc	Prévoir une seule réunion en présentiel	20.07.2022 à 10 :00
SEMMAOUI, Khalid	L'Association Marocaine des Industries Solaires et Éoliennes (*AMISOLE*), Rabat, Maroc	Entretien en présentiel	20.07.2022 à 14:00
EL GHAZI, Mhamed Président du RESOVERT	Resovert Fès Meknès, Meknès, Maroc	Entretiens en présentiel	21.07.2022
MELLOUKI, Hicham	Projet pilote Coopérative BASSMA, Meknès, Maroc	Meknès Ain Taoujtate	21.07.2022
TASSINE, Adil Directeur administratif de la Coopérative	Projet pilote coopérative MBROUKA, Taroudant, Maroc	Taroudant	22 & 23.07.2022

ACH-HOUBI, Mohamed	Projet pilote coopérative KSIKSOU	Benguérir	23.07.2022

Table 37 : List of people interviewed

8.5. List of documents reviewed

1	Formulaire d'identification de projet (FIP)
2	Plan de lancement du PNUD
3	Document de projet final PNUD-FEM, avec toutes les annexes
4	Demande d'approbation du directeur
5	Procédure de détection des risques environnementaux et sociaux du PNUD (PDRES) et plans de gestion connexes (le cas échéant)
6	Rapport de l'atelier initial/ (PV du CoPil)
7	Rapport d'évaluation à mi-parcours et réponse de la direction aux recommandations
8	Tous les rapports sur la mise en œuvre des projets (RMP)
9	Rapports d'avancement (trimestriels, semestriels ou annuels, avec les plans de travail et les rapports financiers associés)
10	Rapports de mission de contrôle
11	Procès-verbaux des réunions du comité directeur du projet et d'autres réunions (par ex. réunions du Comité d'examen des projets)
12	Outils de suivi du FEM (de l'approbation du directeur, à mi-parcours et durant la phase finale du projet)
13	Indicateurs de base FEM/FPMA/FSCC (à partir du FIP, de l'approbation du directeur, à mi-parcours et durant la phase finale du projet) ; seulement pour les projets FEM-6 et FEM-7
14	Données financières, y compris les dépenses réelles par résultat et les coûts de gestion, y compris la documentation de toute révision budgétaire majeure
15	Données sur le cofinancement avec les contributions prévues et réelles, ventilées par type de cofinancement, par source et selon que la contribution est considérée comme un investissement mobilisé ou des dépenses de fonctionnement
16	Rapports d'audit
17	Versions électroniques des produits du projet (brochures, manuels, rapports techniques, articles, etc.)
18	Exemples de supports de communication relatifs au projet
19	Liste récapitulative des réunions formelles, ateliers, etc. organisés, avec la date, le lieu, le sujet et le nombre de participants
20	Toute donnée de suivi socioéconomique pertinente, comme les revenus / les niveaux d'emploi moyens des parties prenantes dans la zone cible, l'évolution des revenus liés aux activités du projet
21	Liste de contrats et d'achats d'articles de plus de 5 000 dollars (organisations ou entreprises ayant conclu un contrat pour les produits du projet, sauf en cas d'information confidentielle)
22	Liste de projets/initiatives contribuant aux objectifs du projet approuvés/lancés après l'approbation du projet par le FEM (c'est-à-dire tout résultat à effet de levier ou de catalyseur)
23	Données sur l'activité pertinente du site Internet du projet – par exemple, le nombre de visiteurs uniques par mois, le nombre de pages consultées, etc. sur la période concernée (si elles sont disponibles)
24	Document de programme pays du PNUD (DPP)
25	Liste/carte des sites du projet, en précisant ceux pour lesquels des visites sont proposées
26	Liste et coordonnées du personnel du projet, des principales parties prenantes, notamment des membres du conseil du projet, le CTR, les membres de l'équipe projet et les autres partenaires à consulter
27	Éléments livrables du projet qui fournissent des preuves documentaires de la progression vers la réalisation du projet

Table 38 : List of documents reviewed

8.6. Matrix of evaluation questions (evaluation criteria with key questions, indicators, data sources and methodology)

Table 39 : Matrix of evaluation questions (evaluation criteria with key questions, indicators, data sources and methodology)

Questions d'évaluation	Indicateurs	Sources	Méthodologie
PERTINENCE Comment le projet se rapporte-t-il aux principaux objectifs du domaine focal du FEM et aux priorités en matière d'environnement et de développement au niveau local, régional et national ?			
1. Dans quelle mesure le les produits et les activités du projet GEF-SP sont-ils adapté aux besoins et priorités des bénéficiaires finaux (agriculteurs, coopératives agricoles, etc.) ?	Prise en compte des besoins et priorités des bénéficiaires finaux par le projet Identification des capacités à améliorer	Document de projet PIF	Analyse documentaire Consultations avec les bénéficiaires finaux (entretiens semi-directifs ou/et focus groups) Visites des projets pilotes (cf. calendrier de la mission)
2. Dans quelle mesure le projet GEF-SP est-il aligné sur les enjeux et priorités en matière d'environnement développement au Maroc ?	Alignement du projet GEF-SP sur les politiques publiques et les stratégies sectorielles en matière d'environnement et de développement durable	Document de projet Stratégies et politiques publiques du Maroc en matière d'environnement et de développement durable (agriculture, eau irrigation, etc.)	Analyse documentaire Entretiens avec des personnes ressources qualifiées (AMEE, PNUD, etc.)
3. Dans quelle mesure le projet GEF-SP s'accorde-t-il aux principaux objectifs du domaine focal du FEM ?	Niveau d'adéquation entre les objectifs du projet GEF-SP et les priorités stratégiques du FEM (y compris l'alignement des indicateurs pertinents du domaine focal) Liens explicites avec les objectifs mondiaux en matière climatique Effets bénéfiques en matière de changement climatique	Document de projet Documents stratégiques prioritaires du FEM pour la période d'approbation du projet GEF-SP	Analyse documentaire Entretiens avec des personnes ressources qualifiées (AMEE, PNUD, etc.)
4. Dans quelle mesure le projet GEF-SP était-il lié et conforme aux priorités et stratégies du PNUD pour le Maroc ?	Niveau d'adéquation entre les objectifs et la conception du projet GEF-SP avec l'UNDAF et le CPD	Documents du programme-cadre pays du PNUD pour le Maroc (UNDAF et Plan stratégique)	Analyse documentaire Entretiens avec des personnes ressources qualifiées (AMEE, PNUD, etc.)
EFFICACITE Dans quelle mesure les résultats escomptés et les objectifs du projet ont-ils été atteints ?			

5. Dans quelle mesure les objectifs et les résultats escomptés du projet GEF-SP ont été atteints, ou sont en train de l'être ?	État de réalisation des activités et des résultats (directs, organisationnels et par rapport aux indicateurs du projet	Document de projet Autres documents pertinents du projet Consultations avec l'UGP	Analyse documentaire Entretiens avec l'équipe du projet (UGP) Analyse des réalisation du projet GEF-SP (directs, organisationnels et institutionnels)
6. Y-a-t-il des résultats inattendus du projet GEF-SP ?	Importance et pertinence des résultats inattendus	Idem	Analyse documentaire Entretiens avec l'équipe du projet (UGP) Analyse descriptive des résultats du projet GEF-SP
7. Quel est le degré de réalisation globale du projet GEF-SP ?	Efficacité globale des réalisations	Idem	Analyse approfondie qualitative et quantitative des résultats basée sur les indicateurs du projet GEF-SP
EFFICIENCE Le projet a-t-il été mis en oeuvre de façon efficiente, conformément aux normes et standards nationaux et internationaux ?			
8. Dans quelle mesure les ressources (financières, humaines, temporelles, techniques, matérielles, etc.) ont-elles été allouées de façon optimale afin d'aboutir aux résultats escomptés ?	Financement et cofinancement du projet Taux d'exécution Conformité de l'utilisation des ressources financières avec les normes et standards nationaux et internationaux Additionnalité du FEM	Reporting financier final (PNUD) Révisions du budget du projet	Analyse du budget Analyse d'allocation des ressources
9. Dans quelle mesure le pilotage, la coordination interne et externe, le suivi-évaluation de la performance et la communication du projet GEF-SP ont-ils été assurés de façon efficace ?	État d'avancement de l'exécution Respect du calendrier et des délais	Document de projet Plans de travail annuels, Rapports périodiques d'activités	Analyse de l'exécution du cycle du projet
10. Dans quelle mesure le système de S&E a-t-il été bien conçu, fonctionnel et efficace ?	S&E (conception à l'entrée, mise en œuvre et évaluation globale)	Document de projet CRS, revues internes, rapports annuels, RMA, PIR, évaluation à mi-parcours (2020)	Analyse descriptive du système de S&E du projet
DURABILITE Dans quelle mesure existe-t-il des risques financiers, institutionnels, sociopolitiques et/ou environnementaux pour maintenir des résultats du projet à long terme ?			

11. Existe-t-il des risques politiques, sociaux ou financiers susceptibles de compromettre la durabilité des résultats du projet ?	Existence d'une stratégie de sortie et des interventions explicites visant à garantir la durabilité des résultats du projet Probabilité globale de durabilité	Document de projet Consultations des parties prenantes clés (AMEE, PNUD, etc.) Registre des risques	Analyse des risques entravant la continuité des bénéfices nets du projet GEF-SP
12. Dans quelle mesure les bénéfices nets du projet GEF-SP seront durables ou sont susceptibles de perdurer ?	Identification des capacités requises pour assurer les bénéfices nets du projet GEF-SP	Document de projet Consultations des parties prenantes clés (AMEE, PNUD, etc.)	Analyse des capacités nécessaires à la continuité des bénéfices nets du projet
13. Dans quelle mesure les principales parties prenantes ont-elles identifié leur intérêt pour les bénéfices du projet au-delà de la fin du projet et ont-elles accepté la responsabilité de s'assurer que les bénéfices du projet continuent d'affluer ?	Rôles et des responsabilités spécifiques des parties prenantes définis et convenus dans la stratégie de sortie	Document de projet Consultations des parties prenantes clés (AMEE, PNUD, etc.)	Analyse descriptive des rôles et responsabilités des parties prenantes nécessaires à la continuité des bénéfices nets du projet
ÉGALITE DES GENRES ET AUTONOMISATION DES FEMMES Comment le projet a-t-il contribué à l'égalité des genres et à l'autonomisation des femmes ?			
14. Dans quelle mesure le projet GEF-SP a-t-il intégré dans ses actions la question de l'égalité des sexes et l'autonomisation des femmes ?	Degré et modalités pratiques de l'intégration de l'égalité des sexes et de l'autonomisation des femmes	Document de projet Rapport de l'évaluation à mi-parcours (2020) Revues internes, autres documents pertinents et consultations des parties prenantes clés	Analyse documentaire Analyse contributive
IMPACT Existe-t-il des indications que le projet a contribué à (ou permis de) progresser vers une réduction des pressions exercées sur l'environnement et/ou une amélioration de l'état écologique ?			
15. Y a-t-il des améliorations vérifiables de l'état écologique, ou des réductions du stress écologique, qui peuvent être liées directement aux interventions du projet ?	Contribution aux bénéfices global, national et local prévus par le projet Facteurs contribuant ou entravant le progrès vers l'impact (projet & contexte)	Document de projet et différents pertinents Rapport de l'évaluation à mi-parcours (2020) Revues internes, autres documents pertinents et consultations des parties prenantes clés	Analyse documentaire Analyse contributive au progrès vers l'impact

		Consultations des parties prenantes clés	
IMPACTS DU COVID 19 Comment le projet a-t-il été impacté et quelles mesures ont été prises ?			
16. Comment le projet GEF-SP a-t-il été impacté par le COVID-19 ?	Mesures du confinement prises	Information pertinente du projet GEF-SP disponible	Analyse contextuelle
17. Quelles mesures ont été prises pour en atténuer ses effets du COVID 19 ?	Mesures du confinement prises	Information pertinente du projet GEF-SP disponible	Analyse contextuelle
QUESTIONS TRANSVERSALES			
OBJECTIFS DE DEVELOPPEMENT DURABLE			
18. Dans quelle mesure le projet GEF-SP a-t-il contribué à la réalisation des objectifs de développement durable, particulièrement les ODD 2, 7, 13 et 15 ?	Adéquation des objectifs du projet GEF-SP et les ODD 2, 7, 13 et 15	Document de projet Rapport de l'évaluation à mi-parcours (2020), revues internes, autres documents pertinents et consultations des parties prenantes clés	Analyse documentaire Analyse contributive
REDUCTION DE LA PAUVRETE			
19. Dans quelle mesure le projet GEF-SP a-t-il contribué (ou devrait) réduire la pauvreté des bénéficiaires finaux ?	Importance des ressources financières générées (revenus)	Document de projet Rapport de l'évaluation à mi-parcours (2020), revues internes, autres documents pertinents et consultations des parties prenantes clés	Analyse documentaire Analyse contributive
ATTENUATIONS DES CHANGEMENTS CLIMATIQUES			
20. Dans quelle mesure le projet GEF-SP a-t-il contribué à l'atténuation des changements climatiques au Maroc ?	Mesures d'atténuation envisagées	Document de projet Rapport de l'évaluation à mi-parcours (2020), revues internes, autres documents pertinents et consultations des parties prenantes clés	Analyse documentaire Analyse contributive
GESTION DES CONNAISSANCES			
21. Dans quelle mesure le projet GEF-SP a-t-il mis en place un processus de gestion des connaissances dans le domaine de l'économie circulaire au Maroc ?	Effectivité et qualité du processus de gestion des connaissances	Document de projet Rapport de l'évaluation à mi-parcours (2020), revues internes, autres documents pertinents et consultations des parties prenantes clés	Analyse documentaire Analyse contributive

8.7. Itinerary of the TE mission, including summary of field visits

Dans le cadre de la mission d'évaluation du projet GEF-SP, des visites de terrain ont été organisées par Monsieur A. Touzani, coordonnateur du projet en concertation avec l'équipe d'évaluation. Le travail sur le terrain avait pour objectifs :

(i) Échanger avec les bénéficiaires finaux du projet et recueillir leurs témoignages et perceptions sur les activités réalisées dans le cadre du projet GEF-SP ;
(ii) Visiter les installations de pompage solaire.

Table 40 : Itinerary of the TE mission

#	Date	Lieu de la visite	Objet de la visite
1	21.07.2022	Meknès, Ain Taoujtate	Projet pilote, coopérative BASSMA En plus de l'équipe d'évaluation, ont participé à cette visite messieurs : (i) Abdlekrim Touzani, coordonnateur du projet GEF-SP, Agence Marocaine de l'Efficacité Énergétique (AMEE), Rabat et (ii) Abdellah Harrak, installateur du système de pompage solaire, Ain Taoujtate (Meknès). - Visite guidée des équipements du système de pompage solaire dédié à l'irrigation de de la coopérative Bassma. - Échanges avec monsieur Abdellah Harrak, technicien installateur des équipements du système de pompage solaire sur les conditions d'installation des équipements du système de pompage solaire
2	21.07.2022	Fès	Visite de l'entreprise spécialisée Taqa Chamssia (Fès) en équipements des systèmes pompage solaire. Le propriétaire de cette entreprise a bénéficié des formations dans le cadre du projet GEF-SP. Il considère que les formations du projet GEF-SP ont été fort utiles pour sa professionnalisation en PS et la structuration de son entreprise. En plus, il a constaté que ces formations ont donné lieu à la création de nouveaux prestataires en PS au Maroc.
3	21.07.2022	Fès	Entretien le président du Resovert de la région Fès – Meknès, monsieur Mhamed El Ghazi et propriétaire de Maison énergie solaire à Fès.

			L'entretien a porté sur le Resovert de la région Fès - Meknès, notamment sa création fin 2019, ses membres et son organisation. Le projet GEF-SP a permis : (i) le développement des savoir-faire en matière de l'énergie solaire, (ii) l'intérêt croissant pour l'utilité du pompage solaire à cause de ses différents avantages comparatifs, (iii) la bonne compréhension de l'énergie solaire pour la protection de l'environnement, (iv) la réduction importante pour la mise en place d'une installation de PS, (v) la contribution de la formation à la professionnalisation du secteur, (vi) la structuration des professionnels du PS à travers l'acquisition du savoir-faire en PS et la sensibilisation des agriculteurs aux avantages du PS, et (vii) le rendement important de la production agricole.
4	22.07.2022	Douar Mghafra, près de Oulad Berhil, Taroudant	Projet pilote, coopérative MBOUROUKA En plus du chef de l'équipe d'évaluation, a participé à cette visite monsieur El Arbi Dahbani, chef de service Solaire, Agence Marocaine de l'Efficacité Énergétique (AMEE), Marrakech. - Visite guidée des équipements du système de pompage solaire dédié à l'irrigation de l'oliveraie de la coopérative Mabrouka. - Échanges avec monsieur Ahmed Bakkal, membre de la coopérative Mabrouka sur : (i) les conditions d'installation des équipements du système de pompage solaire et (ii) les avantages comparatifs de l'utilisation de l'énergie solaire au lieu de l'utilisation du butane pour l'irrigation agricole.
5	23.07.2022	Marrakech	Visite guidée du Green Training de l'Agence Marocaine de l'Efficacité Énergétique (AMEE), Marrakech. Cette visite guidée a été encadrée par monsieur El Arbi Dahbani, chef de service Solaire, Agence Marocaine de l'Efficacité Énergétique (AMEE), Marrakech. Capitalisant sur son expérience en matière de formation continue dans les domaines des énergies

			renouvelables (systèmes solaires photovoltaïques d'électrification décentralisée, systèmes solaires de pompage d'eau, systèmes hybrides, les systèmes solaires thermiques pour le chauffage d'eau sanitaire, les microcentrales hydrauliques, AMEE a étendu son offre de formation aux thématiques d'efficacité énergétique, susceptible de contribuer à bâtir les compétences nationales interpellées par le marché des énergies renouvelables et de l'efficacité énergétique.
6	23.07.2022	Benguérir	Projet pilote, coopérative KSIKSOU En plus de l'équipe d'évaluation, a participé à cette visite monsieur El Arbi Dahbani, chef de service Solaire, Agence Marocaine de l'Efficacité Énergétique (AMEE), Marrakech. - Visite guidée des équipements du système de pompage solaire dédié à l'irrigation de l'oliveraie de la coopérative Ksiksou comprenant (3 femmes et 2 hommes). - Échanges avec monsieur Abdelillah Ach-houbi, président de la coopérative Ksiksou sur : (i) les conditions d'installation des équipements du système de pompage solaire et (ii) les avantages comparatifs de l'utilisation de l'énergie solaire au lieu de l'utilisation du butane pour l'irrigation : retour sur investissement en moins de 24 mois avec subvention / 48 mois sans subvention, sécurité par rapport au risque de la butane, passage à un régime de fertirrigation optimal (rendement plus élevé), etc.

8.8. Questionnaires used and summary of responses

Table 41 : Questionnaires used and summary of responses

PROTOCOLE D'ENTRETIEN TYPE	
Date de l'entretien :	Code de l'entretien :
Consentement – Confidentialité	
Présentation de la mission Je m'appelle Ahmed Bencheikh, et je travaille avec ma collègue Pr. Dr. Khadija Hssaine pour le compte du Programme des Nations Unies pour le Développement (PNUD, Maroc) sur l'évaluation finale projet GEF-Pompage Solaire. Prière de noter que l'objectif d'une évaluation finale est d'aider le PNUD, le GEF et leurs partenaires d'exécution et institutionnels d'apprendre sur les succès ainsi que sur les défis qui pourraient nécessiter une révision ou une réflexion plus approfondie sur les interventions en matière de développement durable au Maroc et dans le monde. Si vous êtes d'accord, j'aimerais m'entretenir avec vous pendant environ 40 à 50 minutes au sujet de votre participation aux activités du projet GEF-Pompage Solaire. Consentement Votre participation dans cette mission d'évaluation est volontaire. Vous avez le droit DE NE PAS participer. Vous pouvez choisir de ne pas répondre à n'importe quelle question, et vous pouvez arrêter de participer à tout moment. Il n'y a pas de risque ni d'avantage pour vous si vous décidez de participer, mais votre participation est très importante pour cette étude. Anonymat et confidentialité Vos réponses seront strictement anonymes. Votre nom n'apparaîtra nulle part et il ne sera aucunement possible de savoir de quelle manière vous avez répondu. A Prière de s'assurer que toutes les informations recueillies au cours de cet entrevue seront traitées confidentiellement. Questions Avez-vous des questions avant de commencer ? Acceptez-vous de participer à cette étude d'évaluation ? □ Oui □ Non	
Durée de l'entretien	40 – 50 mn
Questions	**Résumé des réponses**
Question 1. Comment avez-vous connu le projet GEF-Pompage Solaire ?	

Question 2. Quelle est l'importance du projet GEF-Pompage Solaire pour le Maroc ?
Question 3. Quel est votre avis sur l'approche et outils développés par le projet GEF-Pompage Solaire ?
Question 4. Selon vous, quelles sont les principales réussites du projet GEF-Pompage Solaire ? Et quelle est leur portée pour le Maroc après la clôture projet GEF-Pompage Solaire ?
Question 5. Quels ont été les défis que le projet GEF-Pompage Solaire a rencontré au cours de sa mise en œuvre ?
Question 6. Selon vous, quelles sont les principales leçons à tirer de l'expérience du projet GEF-Pompage Solaire pour d'autres initiatives à venir ?
Question 7. Au terme de cet entretien, quelles recommandations, relatives au projet GEF-Pompage Solaire, faites-vous à la mission d'évaluation ?

8.9. TE Rating Scales and TE Ratings Table

Monitoring and Evaluation (M&E)	Rating
M&E design at entry	Satisfactory (S)
M&E Plan Implementation	Satisfactory (S)
Overall Quality of M&E	Satisfactory (S)
Implementing Agency (IA) /Executing Agency (EA) Execution	**Rating**
Quality of UNDP implementation/Oversight	Satisfactory
Quality of Implementing Partner Execution	Satisfactory (S)
Overall quality of Implementation/Execution	Satisfactory (S)
Assessment of Outcomes	**Rating**
Relevance	Highly satisfactory (HS)
Effectiveness	Satisfactory (S)
Efficiency	Satisfactory (S)
Overall project Outcome	Satisfactory t (S)
Sustainability	**Likelihood**
Financial sustainability	Likely
Socio-political sustainability	Likely
Institutional framework and governance sustainability	Likely
Environmental sustainability	Likely
Overall Likelihood of Sustainability	Likely

Table 42 : TE Rating Scales and TE Ratings Table

8.10. UNEG Code of Conduct for Evaluators

Independence entails the ability to evaluate without undue influence or pressure by any party (including the hiring unit) and providing evaluators with free access to information on the evaluation subject. Independence provides legitimacy to and ensures an objective perspective on evaluations. An independent evaluation reduces the potential for conflicts of interest which might arise with self-reported ratings by those involved in the management of the project being evaluated. Independence is one of ten general principles for evaluations (together with internationally agreed principles, goals and targets: utility, credibility, impartiality, ethics, transparency, human rights and gender equality, national evaluation capacities, and professionalism).

Evaluators/Consultants:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actionstaken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information inconfidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluateindividuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt aboutif and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders.In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/ororal presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.
8. Must ensure that independence of judgement is maintained, and that evaluation findings and recommendations are independently presented.
9. Must confirm that they have not been involved in designing, executing or advising on the project being evaluated and did not carry out the project's Mid-Term Review.

Evaluation Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Evaluator: **BENCHEIKH, Ahmed**

Name of Consultancy Organization (where relevant): Evalua Development Firm, Rabat, Morocco

I confirm that I have received and understood and will abide by the United Nations Code of

Conduct for Evaluation.Signed at Rabat (Morocco) **30 September, 2022**

Signature: 

8.11. TE Report Clearance Form

Terminal Evaluation Report for *(Project Title & UNDP PIMS ID)* **Reviewed and Cleared By:**

Commissioning Unit (M&E Focal Point)

Name: _____

Signature: _____ Date: _____

Regional Technical Advisor (Nature, Climate and Energy)

Name: _____

Signature: _____ Date: _____

8.12. To be attached separately: TE Audit Trail template