United Nations Development Programme
Global Environmental Facility

FINAL REPORT (19 January 2023)

Terminal Evaluation of the UNDP-Supported GEF-Financed Project

Strengthening the resilience of rural livelihoods and sub-national government system to climate risks and variability in Benin

GEF Project ID: 5904 UNDP PIMS ID: 5433

Irrigation scheme (Bohicon municipality)

Water reservoir in Kadolasi village (Ouaké municipality)

Country:	Benin
Region:	West Africa
GEF Focal Area:	Climate Change (GEF-6)
GEF Agency:	United Nations Development Programme (UNDP)
Project Executing Agency:	Ministry of Development and Government Action Coordination (MDC)
Evaluation Time Frame:	1 October – 1 December 2022
Evaluation Consultants:	Vincent LEFEBVRE, Agronomist
	Romaric EHINNOU KOUTCHIKA, Geographer

Acknowledgements:

The consultants wish to acknowledge the hard work and commitment of project staff as well as the involvement of the beneficiaries and the Government staff. I would like to express also my appreciation for the support provided by UNDP and above all the project team for facilitating the meetings with Government and contacts with the final beneficiaries.

Drinking water through in Aouignankame (Savalou municipality)

Water storage for irrigation scheme (Bohicon municipality)

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Executive Summary

Project summary table

Project Details		Project Milestones	
Project Title	Strengthening the resilience of rural livelihoods and sub-national government system to climate risks and variability in Benin	PIF Approval Date:	02/03/2016
UNDP Project ID (PIMS #):	5433	CEO Endorsement Date (FSP) / Approval date (MSP):	02/10/2017
GEF Project ID:	5904	ProDoc Signature:	11/12/2017
UNDP Atlas Business Unit, Award ID, Project ID:	UNDP Atlas BU: BEN10 ; Award ID: 00104207 ; Project ID: 00107983	Date Project Manager hired:	05/02/2018
Country/Countries:	Benin	Inception Workshop:	22/02/2018
Region:	West Africa	Mid-Term Review Completion Date:	29/12/2020
Focal Area:	Climate Change Adaptation	Terminal Evaluation Completion date:	19/01/2023
GEF Operational Programme or Strategic Priorities/Objectives:	Climate Change Adaptation	Planned Operational Closure Date:	11/12/2022
Trust Fund:	Least Developed Country Fund		
Implementing Partner (GEF Executing Entity):	Ministry of Development and Government Action Coordination (MDC)		
NGOs/CBOs involvement:	-		
Private sector involvement:	-		
Geospatial coordinates of project sites:	Kpakpalaré 09°32.280N 001°22.627E Kadolasi 09°43'37.9"N 1°22'41.2"E Aouiankanmè 08°00.497'N 002°04.602'E Damè 07°59.703'N 002°04.128'E Kotan 06°33.279'N 002°41.870'E Agbodji 06°39.374'N 001°59.240'E Danmè-Kpossou 06°34.885N 002°36.309E Dakpa 07°12.613N 002°02.487E Sèhomi 06°30.486N 001°57.924E		

PDF/PPG	at approval (US$)	at PDF/PPG completion (US$)
GEF PDF/PPG grants for project preparation	100.000	99.052,58
Co-financing for project preparation (TRAC)	60.000	60.000,00
Project	**at CEO Endorsement**	**at TE (US$M)**
[1] UNDP contribution:		425.304,00
[2] Government:	3.000.000	2.750.000,00
[3] Other multi-/bi-laterals:	15.000.000 12.000.000	No realistic estimate available
[4] Private Sector:	-	-

[5] NGOs:	-	-
[6] Total co-financing [1 + 2 + 3 + 4 + 5]:	30.000.000	3.175.304,00
[7] Total GEF funding:	4.450.000	4,449,260.04[1]
[8] Total Project Funding [6 + 7]	34.450.000	7.281.959,00

Project description

The project " Strengthening the resilience of rural livelihoods and sub-national government system to climate risks and variability in Benin " focuses on the need to address populations' vulnerability to climate change in a context of rapidly rainfall changing patterns that result in agricultural productivity variations and in turn revenue fluctuations. This affects primarily the most vulnerable parts of the population.

It addressed a series of shortcomings: (i) Insufficient integration of climate risks and actions into development planning processes, above all in decentralised entities, (ii) low levels of extension advice for agriculture and livelihoods diversification, (iii) limited knowledge in designing and delivering climate-resilient water infrastructures and (iv) limited availability of information on adaptation and climate-proof activities and the need to promote tested and proven alternative livelihoods options that reduce populations' vulnerability to climate change.

The project' drive was set on addressing three main issues: the lack of municipality's capability in mainstreaming climate change adaptation and adjust its plans and processes accordingly (component 1), reducing agricultural vulnerability by controlling the water cycle - in particular run-off – and using ground water to buffer agricultural shocks due to climatic fluctuations and (iii) increase beneficiaries' adaptive capacities through alternative income generating activities

The project targeted 9 villages within 5 municipalities over the entire country (North, Centre, South).

The project started officially in February 2018 for 5 years and is due to close in February 2023. It was a full-scale project of 4.450.000US$ with a total cofinancing of 30.000.000US$.

Objective: Support resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change.	**Indicators:** - Vulnerability assessments show decrease in vulnerability in all 9 villages as per the methodology used in the preparation phase vulnerability assessment - Target population's average annual income level
Component/Outcome 1: Climate change and gender are included in development plans and budgets at national and sub- national levels	**Indicators:** - Number of Municipalities that have considered climate change and gender in their PDC (communal development plan) and PAI (Annual investment plan) - Number of extension agents and NGOs skilled to deliver adaptation extension and TOTs.
Outputs - Five targeted departments and municipalities and all relevant Ministries have integrated gender responsive climate change adaptation in their planning and budgeting work - Agricultural extension agents and local NGOs active in the 5 targeted municipalities are trained on resilience to climate change - Lessons learned are summarized in a repository and shared	
Component/Outcome 2: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns	**Indicators:** - Number of operating financed water infrastructures per municipality, including management - Number of people who master and use climate
Outputs - At least 9 small scale climate resilient water harvesting infrastructures are designed and	

[1] As of 3 JAN 2023

implemented in the 9 targeted villages - Resilient practices, such as drip irrigation techniques or short cycle improved seeds, are adopted by at least 300 households in the five targeted municipalities	resilient techniques promoted by the project (e.g, drip irrigation, short cycle seeds ...)
Component/Outcome 3: improve the targeted communities' adaptive capacities by supporting the diversification of their income generating activities	I**ndicators:** - Number of women engaged in subsistence agriculture trained / strengthened on alternative livelihoods to agriculture - Number of farmers with access to finance as a result of training and more diversified activities
Outputs - Targeted population's dependency and vulnerability to climate change effects is reduced through the introduction of alternative livelihoods for approximately 4000 persons - All women of target population (3,281 women) are trained on alternative livelihoods to agriculture to better cope with climate change impacts - The capacities of 300 rural entrepreneurs and 50 SMEs (aiming at 50% women) to develop business plans in the field of sustainable craft and small scale manufacture are strengthened in order to stimulate employment and revenue increase	

Box 1: Summary of project components, outcomes, output & indicators

GEF global benefits included climate change vulnerability reduction of populations most at risk and improved water management for agricultural production. In addition, gender mainstreaming played an important role in this project as several activities were mostly benefitting/interesting women.

The project was overseen by three main stakeholders: the Ministry of Development and Government Action Coordination (MDC) as the implementing partner, the Partnership and Expertise Centre for Sustainable Development (CePED) as the executing entity and the Ministry of Agriculture, Livestock and Fisheries as co-chairman with MDC of the project board.

Findings

Design/formulation: the project is part of a larger strategy aiming at ensuring climate additionality through funding efforts. The design is very straightforward with three outcomes, clearly delineated, three outputs per outcome and two or three indicators per outcome and finally indicators for the objective. It is benefiting from lessons learned from PANA-1 and some other interventions. The approach has been to focus on three issues: (i) A *lack of capacity of decision maker*s – especially at decentralised level - to address climate change risks issues in their planning processes, (ii) the high vulnerability to extreme weather events because of a lack of capacity to absorb climate change-related shocks and (iii) a limited number of livelihood options not directly dependant on primary agricultural production.

The review of the *logical framework* showed that most if not all indicators are SMART, the results of an excellent initiative at the start of the project to develop an operationalisation plan for monitoring and evaluation. A comprehensive *analysis of risks* was carried out and the SESP was updated in 2021 to accommodate new risks and delete others because of the construction of water tanks and the reservoirs.

Overall, stakeholders ' participation has been very high with a special mention for MDC and CePED that were mostly proactive in ensuring project implementation.

The project replication approach is very strong in this project with an output on compiling lessons learned and the development of an ex-post model for project follow-up.

The *management arrangements* consisted of a steering committee and a project coordination unit (3 contractual staff and 4 UNVs).

On the *implementation* side, this project was characterised by a high level of adaptive management measures eventually resulting in an excellent delivery (96%) without any need for no-cost extensions. It took advantage of local knowledge to save resources, provided solutions to populations highly impacted by COVID19, etc.).

An efficient *M&E system* was established, steering the intervention. Under finance, there has been a good control of delivery despite a slow-down during COVID. Both the *implementing partner and implementing agency* have provided good support to the project.

Project's main achievements

As for the first outcome of the project ("Climate change and gender inclusion in development plans and budgets"), it is achieved. The issue lies with municipalities' inability to implement CCA-responsive activities. Local technical staff has been trained in CCA-friendly agricultural practices. Under the second outcome ("Improvement of productive agricultural infrastructure and human skills), 11 water infrastructures, including water throughs were built. Management committees were created to ensure maintenance of infrastructures. These committees are to be operationalised. Theactivity on bamboo plantation was not successful, attracting few village residents. Farmers were exposed to climate-resilient practices with a reasonable rate of adoption despite several issues related to crop rotation. The 3rd component ("Improving the targeted communities' adaptive capacities by supporting the diversification of their income generating activities") was partially achieved: several income generating activities were created (soap manufacturing, fish farming, gel). The training sessions mostly benefitting female farmers on climate-resilient agricultural practices were very effective, resulting in revenue increase. Still, beneficiaries did not have access to microfinance as a strategy to increase their business basis.

The sustainability and potential impact of the project are variable as per outcome. They are most worrisome for local management committees; there are also technical (insufficient adoption of some key techniques) and environmental risks in the project (pesticide[2] and water reservoir contamination). they have been trained but to this day, they are not yet officially in charge of the infrastructure, pending final acceptance of works.

Evaluation rating table

1. Monitoring & Evaluation (M&E)	Rating
M&E design at entry	HS
M&E Plan Implementation	HS
Overall Quality of M&E	HS
2. Implementing Agency (IA) Implementation & Executing Agency (EA) Execution	**Rating**
Quality of UNDP Implementation/Oversight	HS
Quality of Implementing Partner Execution	S
Overall quality of Implementation/Execution	HS
3. Assessment of Outcomes	**Rating**
Relevance	HS
Effectiveness	S
Efficiency	HS
Overall Project Outcome Rating	S
4. Sustainability	**Rating**
Financial sustainability	MU
Socio-political sustainability	L
Institutional framework and governance sustainability	MU L (municipalities and IGA) MU (infrastructures)
Environmental sustainability	ML
Overall Likelihood of Sustainability	MU

[2] Mostly related to intensive cotton agriculture in some project sites and to increased use of improved seeds requiring extra care (through IMP and/or use of traditional pesticides)

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	Sustainability ratings:
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Summary of conclusions, recommendations and lessons learned

Conclusions:

Taking stock of lessons learned:

One innovation to be highlighted in the project has been the concern for sustainability beyond project closure and from the Government's side the need to build lessons learned on how to design future interventions that address climate vulnerability ; provisions were made to ensure that lessons learned and best practices are well documented and that an ex-post model for stakeholders' follow-up (MCAPA) is drafted by project's end on how to tackle climate vulnerability in future interventions.

Project design:

The project design has been based on lessons learned from previous interventions successes and failures; in particular attention was given to avoiding dispersion of resources and focussing on one or two critical activities that generate most rural revenue (irrigation farming activities) and at risk from changing weather patterns, and non-farming local activities (alternative income generating activities): (i) institutional support so that authorities can better plan climate-resilient interventions that reduce populations' vulnerability, (ii) ensure access to water for agricultural production as it is the primary sector impacted by climate change and (iii) alternate income generating activities as a strategy to reduce risks.

Implementation:

The PMU was very effective in this project with controlled delays through COVID 19, an M&E system that was truly functional, meaning most results were achieved by project's end – there was no need for extension, delivery has been exceptional in a COVID19 environment and overall, the project managed to bring together all planned stakeholders that did contribute to the best of their possibilities -.

It is of particular interest to show the path in implementation taken by PMU: outputs from outcome 2 and outcome 3 were somewhat implemented in a sequential manner because it was (logically) deemed difficult to push for microfinance outputs as long as beneficiaries were not both obviously in a conducive mindset (entrepreneurial skills), in operational conditions (they are producing) and in an actual activity that could benefit from microfinance (year-long vegetable production). So by project's end, beneficiaries were not yet in the right conditions and mindset to consider accessing the microfinance sector. Co-financing: Government has been very effective through co-financing in contributing to the projects' results, not only with conventional co-financing (vehicles, HR and

premises) but mostly with actual activities implementation that enhance project results (strengthening sustainability, dialogue and coordination with stakeholders).

Impact:

The impacts vary between outputs: it is low for outcome 1 because municipalities are unable and/or unwilling to commit time and HR to identify funding sources that would support CCA. There is, however, an exception (Bohicon municipality). On the positive side, CePED is working hard on designing the ex-post model for supporting stakeholders in strengthening the resilience of populations to climate change (MCAPA). If adopted by Government, it should be impactful in the sense that there is a strong follow-up mechanism in place, ensuring results' impact

With early implementation, it appeared that this would likely be difficult to achieve and PMU set on prioritising unrelated activities to outcome 2 (fish farming, soap production, hydro-alcoholic gel…). It is high for outcome 2 with effective revenue rises for farmers and somewhat mixed again for outcome 3 with good prospects in fish farming and the need to reassess profitability of soap manufacturing as an individual IGA.

Sustainability: overall, the prospects for sustainability are difficult to measure but for sure, most achievements remain very fragile by project's end.

Recommendations:

The following is recommended:

Rec #	TE Recommendation	Entity Responsible	Time frame
	Category 1: Ensuring sustainability and increase potential		
R.1	Enhance support to municipalities to implement CCA activities	Project team	Before project closure
R.2	Improve effectiveness and organisational setup of infrastructures' related governance structures	PMU	Before project closure
R.3	Accelerate capacity building of most entrepreneurial beneficiaries to initiate access to microfinance	PMU and FNM	Before project closure
R.4	Enhance stakeholders' technical capacities	PMU and ATDA	Before project closure
R.5	Identify additional lessons learned	CePED / PMU	Before project closure
R.6	Enhance sustainability	CePED	Before project closure
	Category 2: Way forward on vulnerability reduction		
R.7	Project 's follow-up – what next?	UNDP and MDC	Within 6 months
R.8	Support municipalities in financing CCA-proof development plans	MDC	Within 6 months

Lessons learned:

Several lessons learned should be considered for future interventions:

Less lear #	TE Lessons learned
	Category 1: Implementation
LL.1	An executing entity leadership is key to ensure a smooth implementation
LL.2	PRODOC analysis at project start and the formulation of an M&E strategy operationalization facilitates greatly the implementation through better understanding the subtleties of indicators and adjusting either indicator definition or implementation to stay in line with project logic
LL.3	The use of biannual work plans in addition to regular AWP reduces significantly the uncertainly of implementation
	Category 2: activities and adaptive management
LL.4	Unplanned activities and innovation is key to solving issues
LL.5	Water trough construction has been very effective at reducing tensions between farmers and livestock breeders
	Category 3: participation and beneficiaries' proactivity
LL.6	Listening to populations and Integrating local knowledge can have highly valuable effects
	Category 4: Impact
LL.7	Activities can generate unexpected results that in turn become beneficial for the project and the population
	Category 5: Follow-up
LL.8	The lack of 2nd phase is an issue for sustainability because organisational structures are weak and there is a risk of project achievements collapsing

List of Acronyms and Abbreviations

ANOPER	*Association Nationale des Organisations Professionnelles d'Eleveurs de Ruminants* - National Association of Professional Ruminant Breeders' Organisations
APSFD	*Association Professionnelle des Systèmes Financiers Décentralisés* - Professional Association of Decentralised Financial Systems
ATDA	*Agence Territoriale pour le Développement Agricole* - Territorial Agency for Agricultural Development
AWP	Annual Work Plan
CCA	Climate Change Adaptation
CDR	Combined Delivery Report
CBA	Cost-Benefit Analysis
CePED	*Centre de Partenariat et d'Expertise pour le Développement Durable* - Partnership and Expertise Centre for Sustainable Development
CO	Country Office (of UNDP)
COP	Conference Of Parties
CPAP	Country Programme Action Plan
CSO	Civil Society Organisation
DAC	Development Assistance Committee
DGCL	*Direction Générale des Collectivités Locales* - Directorate-General for local authorities
DGPSIP	*Direction Générale de la Programmation et du Suivi des Investissements Publics* - General Directorate for Public Investments Programming and Monitoring
DGE	*Direction Générale de l'Eau* – General Directorate for Water
EA	Executing Agency
EMICoV	*Enquête Modulaire Intégrée sur les Conditions de Vie des ménages* - Integrated Modular Survey on Households Living Conditions
FaDeC	*Fond d'Appui au Développement des Communes* - Municipal Development Support Fund
FAO	Food and Agriculture Organisation
FDC	*Fond de Développement des Communes* – Municipality Development Fund
FNDA	*Fond National de Développement Agricole* – National Agricultural Development Fund
FNM	*Fond National de la Microfinance* - Microfinance National Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH* - German Society for International Cooperation, Ltd.
GRED	*Groupe de Réflexion et d'Etude sur le Développement Durable* - Group for Reflection and Study on Sustainable Development
HQ	Headquarters
HR	Human Resources
IA	Implementing Agency
ID	Identification
IGA	Income Generating Activity
INBAR	International Network for Bamboo and Rattan
INDC	Intended Nationally Determined Contribution
INRAB	*Institut National de Recherche Agronomique du Bénin* - National Institute for Agricultural Research of Benin
INSAE	*Institut national de la statistique et de l'analyse économique* – National Institute for Statistics and Economic Analysis
IS	Information System
LPAC	Local Project Appraisal Committee

LDC	Least Developed Country
MAEP	*Ministère de l'Agriculture, de l'élevage et de la Pêche* – Ministry of Agriculture, Livestock and Fisheries
MCVDD	*Ministère du Cadre de Vie et du Développement Durable* - Ministry of Living Environment and Sustainable Development
MDC	*Ministère du Développement et de la Coordination Gouvernementale* - Ministry of Development and Government Action Coordination (previously known as Ministry of Planning and Development)
MEF	Ministry of Finance and Economy
ME(E)M	*Ministère de l'Eau (Energie) et des Mines* – Ministry of Water (Energy) and Mines
MoU	Memorandum of Understanding
MTR	Mid-Term Review
NEX	National Execution (modality of UNDP)
NGO	Non-Government Organization
NIM	National Implementation Modality
NPC	National Project Coordinator
NPO	National Project Officer
NRM	Natural Resource Management
OSD	*Orientations Stratégiques de Développement* - Strategic Development Orientations
PAI	*Plan Annuel d'Investissement* – Annual Investment Plan
PANA	*Programme d'Action National d'Adaptation* - National Adaptation Programme of Action
PASD	*Projet d'Appui aux Stratégies de Développement* - Development Strategy Support Project
PCM	*Project Commune du Millénaire* – Millenium Municipality Project
PCU	Project Coordination Unit
PDC	*Plan de Développement Communal* – Municipality Development Plan
PIF	Project Identification Form (of the GEF)
PIMS	Project Information Management System (of UNDP)
PIR	Project Implementation Review
PMU	Project Management Unit
PNA	Protected Natural Area
PNIASAN	*Plan National d'Investissements Agricoles et de Sécurité Alimentaire et Nutritionnelle* - National Plan for Agricultural Investments, Food and Nutrition Security
PPG	Project Preparation Grant
PRODOC	Project Document
PSDSA	*Plan Stratégique pour le Développement du Secteur Agricole* - Strategic Plan for the Development of the Agricultural Sector
PV	Photovoltaic
SAP	*Système d'Alerte Précoce* – Early Warning System
SESP	Social and Environmental Screening Template
STAP	Scientific and Technical Advisory Panel
SWOT	Strengths, Weaknesses, Opportunities and Threats
TE	Terminal Evaluation
ToT	Training of Trainers
TT	Tracking Tool
UNDAF	United Nations Development Assistance Framework
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme

1. Introduction

This report presents the findings of the Terminal Review (TE) of the full-sized project entitled "Strengthening the resilience of rural livelihoods and sub-national government system to climate risks and variability in Benin". The terminal review was carried out by a team of Independent Consultants, on behalf of UNDP.

1.1 Purpose and objective of the evaluation

Pursuing the UNDP and GEF monitoring and evaluation (M&E) policies and procedures, all UNDP-implemented and GEF-funded projects are required to undergo a terminal evaluation upon completion of implementation. Towards this end, UNDP has commissioned the terminal evaluation by contracting a team of independent evaluators. It was carried out per UNDP-GEF Monitoring and Evaluation Policy and facilitated by the UNDP Country Office in Cotonou.

The purpose of the terminal evaluation as per TORs (see Annex 1) was to assess the achievement of project results and to draw lessons that can both improve the sustainability of the benefits from this project, and aid in the overall enhancement of UNDP and Government programming.

A systematic and comprehensive evaluation of the performance of the project using the six DAC criteria assessing its design, processes of implementation, and achievements relative to project objectives, was carried out. It was aimed at obtaining and providing timely, precise and reliable information on how well the project was designed, implemented, progress made towards project objectives and how resources were used cost-effectively. The evaluation looked as well at the project's impact and its sustainability through ownership and empowerment.

The specific objectives of the terminal evaluation are to:

- Assess the design, implementation and, monitoring and evaluation processes;
- Assess the project's achievements in relation to its goals, objectives and planned outcomes;
- Assess the management and potential for project results in terms of ownership, sustainability and future programme design;
- Determine whether the project contributed towards GEF' strategic objectives and global environmental benefits;
- Provide specific and practical recommendations, and document lessons learned that can be utilized for improving future projects.

1.2 Scope and methodology

1.2.1 Scope

The evaluation focused primarily on assessing the performance of the project in view of the accomplished outcomes, objectives and effects using the evaluation criteria of relevance, coherence, effectiveness, efficiency, sustainability, and impact, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported and GEF-financed Projects. *Relevance* assesses how the project relates to the development

priorities at the local, regional and national levels for climate change and is coherent with the main objectives of GEF focal areas. It also assesses whether the project addressed the needs of targeted beneficiaries at the local, regional and national levels. *Coherence* examines the project's congruity with other interventions in the country, the targeted sector and/or institution. *Effectiveness* measures the extent to which the project achieved the expected outcomes and objectives, how risks and risk mitigation were being managed, and what lessons can be drawn for other similar projects in the future. *Efficiency* is the measure on how resources (funds, expertise, time, etc.) are economically converted to results. *Impact* examines the positive and negative, primary and secondary long-term effects produced by the development intervention, directly or indirectly, intended or unintended. It looks at whether the project achieved the intended changes or improvements (technical, economic, social, cultural, political, and ecological). In GEF terms, impact/results include direct project outputs, short to medium-term outcomes, and longer-term impact including global environmental benefits, replication effects and other local effects including on communities. *Sustainability* is the ability of the project interventions to continue delivering benefits for an extended time after completion; it examines the project's sustainability in financial, institutional, social and environmental terms.

Employing the above-explained evaluation criteria, the terminal evaluation covered all activities supported by UNDP and completed by the project team and Government agencies as well as activities that other collaborating partners including beneficiaries, participated in.

In relation to timing, the evaluation covered all activities of the project from project document signature in May 2016 to the evaluation in November 2023 (4 months before project closure).

The evaluation has been conducted in a way that it provides evidence-based information that is credible, reliable and useful.

1.2.2 Methodology

The Evaluation team adopted a participatory and consultative approach ensuring close engagement with government counterparts, UNDP Office, the project team, and key stakeholders both at local and central levels.

Several basic principles were used to conduct the evaluation :

- **Effective participation** of all stakeholders (government including line ministries and decentralised entities, UNDP and final beneficiaries)
- **Crosschecking** of gathered information
- Emphasis on **consensus and agreement** on the recommendations by the stakeholders.
- **Transparency** of debriefing

Overall, the evaluation tools used during the evaluation were the following: a review of key documents and literature, consultation and interview of stakeholders and on-site visits of project achievements.

The data collection tools included semi-structured questionnaires for key informants (checklist) and interview guides for discussions with beneficiaries. The tools were developed by the evaluation team focusing on the evaluation criteria and major planned outcomes.

The adopted methodology is detailed in Annexe 2.

Gender was considered through participation and inclusion in interviews and also at project sites: the team incorporated gender and women's rights dimensions into the evaluation approach, method and analysed how the project affected men and women differently. As per the 2020 GEF Terminal Evaluation guidelines, specific Evaluation Rating Criteria were used in combination with 5 DAC evaluation criteria: these are outcomes, quality of monitoring and evaluation (M&E), quality of implementation and execution, and sustainability (environmental, social, financial and institutional).

Project performance was assessed and rated using the criteria of relevance, effectiveness, efficiency and impact using the standard rating scales (see Table 1). The primary reference points for assessing the performance were the indicators and targets set in the Strategic Results Framework, with consideration given to contextual factors.

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	Sustainability ratings:
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Table 1: TE Rating Scales

1.2.3 Data Collection and Analysis

Three main sources of information were available for data collection: (i) documents, (ii) interviews and (iii) on-site visits.

Gathered data was crosschecked with different stakeholders within/between these different sources of information.

The information included in this report has been crosschecked from different sources of information. Information captured from one source of information and not crosschecked was not included in the report.

1.2.4 Limitations

Due to post-effects of the global pandemic of COVID19, the evaluation was conducted in a hybrid manner with the international consultant home-based and the national consultant who conducted interviews with stakeholders on a face-to-face basis and visiting project sites.

While this approach has not been an issue for interviews as international phone and internet communications were of reasonably good quality, the absence of in-country visits for the international consultant meant it was more difficult for him to understand on-site project achievements, hence relying on experience from the national consultant to understand key issues on project sites.

Some stakeholders, mostly from municipalities were not available for interviews during the planned field trips although this issue was solved afterwards through catching-up meetings and/or remote (phone and WhatsApp) interviews.

1.2.5 Ethics

The evaluation was conducted following the UNEG Ethical Guidelines for Evaluators (Evaluation Consultant Code of Conduct Agreement attached in).

The rights and dignity of all stakeholders were respected, including interviewees, project participants (project, UNDP, Government staff), beneficiaries (beneficiary institutions and communities) and other evaluation stakeholders. The evaluation team explained and preserved the confidentiality and anonymity of the participants so that those who participate in the evaluation are free from external pressure and that their involvement in no way disadvantages them.

The final report of the evaluation does not indicate a specific source of citations or qualitative data to preserve this confidentiality.

The confidentiality of stakeholders was ensured and consultation processes were appropriately contextualised and culturally sensitive, with attention given to issues such as gender empowerment and fair representation for vulnerable groups, wherever possible.

Whilst every effort was made to reflect the inputs of stakeholders fairly and accurately in the report, the evaluation ratings, conclusions and key recommendations are those of the sole evaluator, not binding on any individual or institutional stakeholder.

1.3 Structure of the evaluation report

The terminal evaluation report is presented in five sections. It initially presents an *executive summary* of the terminal evaluation, giving a brief background of the project and its design, a summary of its findings related to the

activities, management, and important aspects such as partnership and sustainability, conclusions and recommendations for future action and programming.

It is followed by an *introduction*, which describes the context and background of the evaluation and gives a brief description of the purpose, scope and focus of the evaluation, the methodology used, and the structure of the report. The next section presents information on the project, including project description, development context, and strategy.

The *findings* section is dedicated to the results achieved towards the outcomes of the project, which is the core of the report, presented under three subheadings related to programme design, implementation, and evaluation criteria. The final section considers the *conclusions* of the evaluation and *recommendations* for future action.

2. Project description and development context

2.1 Project start and duration

The project “Strengthening the resilience of rural livelihoods and sub-national government system to climate risks and variability in Benin” was designed by the Government of Benin with the support of UNDP with an initial project idea (PIF) submitted back in August 2014 and reviewed in March 2015 (STAP review).

This was turned into a full scale project that started by early 2018 with the recruitment of the Project Manager. It was the culmination of a consultation process (i) within MDAG, (ii) with other relevant ministries (e.g., MAEP) and (iii) with relevant local stakeholders – mainly municipalities and civil society organisations – that resulted in the formulation of the project. With the LPAC conducted in October 2016, the final version of the project was submitted to GEF for review in early 2017 and finally approved in October 2017.

The PRODOC was signed in December 2017 between UNDP and the Government with the first transfer of funds occurring in February 2018, which was the official project start-up date.

The project had an estimated end date by February 2023 (five years).

2.2 Development context

The Republic of Benin is located in West Africa in the Gulf of Guinea, between latitudes 6°30' and 12°30'N and longitudes 1° and 3°40'E. It covers an area of 114,763 km². With an average annual population growth rate of 2.7%, its population stands at 12.5 million (UNFPA, 2021).

Benin's topography is mostly low-lying or gentle-sloping, and is marked by five main geomorphological complexes, namely: the sandy coastal plain, the sedimentary plateaux of the Terminal Continental, the crystalline peneplain, the Atacora chain and the Gourma plain. From a climate viewpoint, there is a gradual transition from a tropical continental climate in the north to a sub-equatorial climate in the south, through a somewhat transitional climate in the centre of the country. On a yearly basis, average rainfall varies between 700 mm (extreme North) and 1500 mm (extreme South-East), while temperature revolves around 27°C, but with extremes that can exceed 45°C in the North (MCVDD, 2019).

Benin is a Least Developed Country (LDC) whose economy relies on agriculture, trade and transport with neighbouring countries. The Strategic Development Orientations (OSD) focus on the acceleration of Benin's economic growth, which is based primarily on the promotion of the agricultural sector (Strategic Plan for the Development of the Agricultural Sector - PSDSA 2025) and the National Plan for Agricultural Investments, Food and Nutritional Security (PNIASAN 2017 - 2021)

The agricultural sector remains a dominant sector in the economy of Sub-Saharan African countries. It employs about 70% of the working population and contributed nearly 28% of GDP in 2019 (Performance Report, 2020).

This sector is characterised by low productivity linked to the use of traditional tools and a low rate of adoption of

improved seeds, lack of water control, poor organisation of the sectors, insufficient technical supervision, lack of infrastructure, poor financing of production activities and poor consideration of gender in development policies.

Benin remains a country particularly vulnerable to climate variability and change, the consequences of which are felt at national and local levels. For more than two decades, the rainfall patterns that characterise Benin's climate have been subject to fluctuations that are sometimes very marked in the middle of or within seasons. The main risks facing the country are drought, floods and late and violent rains.

Albeit characterised by a smaller geographical scope, other risks include sea level rise, as it might result in large economic and social impacts. Several development sectors are already affected by climate change, as reported in the Third National Communication (TCN), (MCVDD, 2019), and there is now a need to coordinate actions to adapt and build the resilience of both local communities and their livelihoods through a coherent approach.

Aware of these challenges, the government of Benin has made commitments to combat the adverse effects of climate change by ratifying the UNFCCC, the Kyoto Protocol and the Paris Agreement on 30 June 1994, 25 February 2002 and 31 October 2016 respectively. To comply with the various decisions taken by the Conference of the Parties (COP) to combat the adverse effects of climate change.

In rural areas, the incidence of poverty is higher (42%) than in urban areas (32%). Poverty appears much more of a rural phenomenon in Benin, in an economic context mainly characterised by the preponderance of the agricultural sector (EMICoV, 2015). For the human development index, Benin is ranked 30th in Africa (index: 0.525) and 166th out of 189 countries worldwide in the low category according to the 2021/2022 report (UNDP, 2022). The risks associated with climate change are the most obvious in that they manifest themselves continuously through floods and periods of drought that periodically cause significant crop losses. Hence the promotion of climate-smart agriculture practices to help mitigate the negative impacts of climate change and significantly improve the resilience of rural households.

With regard to climate change, the Republic of Benin ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 30 June 1994, and thus committed itself to bearing its share of responsibility in the fight against climate change and for the development of adaptation strategies for its population. Following this commitment, the first strategies were put in place in collaboration with the Global Environment Facility (GEF), including the launch of the National Adaptation Programme of Action (NAPA) in 2008. The aim was to (i) assess the vulnerability of lifestyles, (ii) evaluate the socio-economic situation of stakeholders, and (iii) determine the priority adaptation needs for the country, with regard to its resources and the respective capacities of the various social groups concerned.

2.3 Problems that the project sought to address

Climate change is inducing rainfall patterns alterations and temperature rises in Benin, hence resulting in more extreme weather events. This is highly impacting agriculture and the most vulnerable who rely on agriculture for their subsistence - a serious threat to the country as agriculture is mostly rain-fed -.

In that context, the project aimed at reducing the vulnerability of populations vulnerable to climate risks.

The PMSD aimed to overall reduce climate change vulnerability by supporting, developing, strengthening and

amplifying the positive results obtained under the NAPA 1-Agriculture project (Integrated Adaptation Programme to combat the effects of climate change on agricultural production and food security).

At operational level, the project was to address the country's low resilience to climate change impacts by addressing the following issues:

- Insufficient integration of climate risks and actions into sub-national development planning with municipalities unable to address local vulnerability to climate change in their strategic development plans, investments and activities
- Low levels of extension advice for agriculture and livelihood diversification with a limited number of experienced agricultural extension officers and NGO sable to provide climate resilient agricultural assistance – which is needed for the most vulnerable populations – in particular small holders including women household heads -
- Limited knowledge of climate-resilient water infrastructure design and climate-related livelihood support, requiring capacity building advice to better control water flows through improving water harvesting and managing it for agricultural production
- Limited availability and use of information on adaptation and climate-proof options such as improved agricultural husbandry or micro-irrigation, to provide demonstrable evidence of the benefits of improving climate resilience.
- Promoting alternative livelihood options, rights and entitlements, new agricultural methods, and credit programs that have worked to reduce the vulnerability of climate change.

Out of 77 municipalities in Benin, the project focussed on five municipalities (Avrankou, Savalou, Bopa, Ouaké and Bohicon, spread over the entire country (North, Centre, South). Three had benefitted previously from PANA1 (Bopa, Ouaké et Savalou); 9 sites (villages) were selected within these municipalities (see table below).

Region	Municipality	Village	PANA1 support
North	Ouaké	Kpakpalaré	No
		Kadolasi	Yes
Centre	Savalou	Aouiankanmè	No
		Damè	Yes
South	Avrankou	Kotan	No
		Danmè-Kpossou	No
	Bohicon	Dakpa	No
	Bopa	Sèhomi	Yes
		Agbodji	No

Table 2: Project sites, municipalities and previous PANA1 support

2.4 Theory of Change

The GEF IEO (2017) Guidelines for conducting terminal evaluations require that the project's Theory of Change (ToC) should be described as part of the analysis of project design; where a project did not have an explicit ToC, the evaluator should develop one based on information provided during the evaluation.

A theory of change is a method[3] that explains how a given intervention is expected to lead to specific development change, drawing on a causal analysis based on available evidence. It helps identify the many underlying and root causes of development issues so as to determine what priorities should be addressed to maximise a project's contribution to achieving development change. By articulating the causes of a development issue, making assumptions explicit on how the proposed strategy is expected to yield results, and testing these assumptions against evidence, the theory of change helps ensure a sound logic for achieving project change.

At the core of the Theory of Change is the understanding of how the activities of the intervention are expected to lead to the desired results through identifying (i) the causal pathway from activities to outputs to a sequence of outcomes to impacts and (ii) the causal assumptions showing why and under what conditions (internal and external factors) the various links in the causal pathway are expected to work.

A theory of change was designed at project formulation stage. It remained valid during the entire duration of the project but the impact pathway was somewhat altered due to the COVID pandemic ; it that affected the implementation of the project, leading to a review of activities to support the beneficiary populations because of (i) delays in implementation due to lockdowns and (ii) the economic impact of the pandemic that required adjustments of some activities to support affected beneficiary populations.

The amended ToC of the project is located under Annex 8.

2.5 Immediate and development objectives of the project

The project's objective was to support resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change.

It had three outcomes falling under three components (excluding activities on project management); the project details are in Box 2[4]:

(i) Component 1: Climate change and gender are included in development plans and budgets at national and sub- national levels.

(ii) Component 2: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns

(iii) Component 3: Improve the targeted communities' adaptive capacities by supporting the diversification of their income generating activities.

Objective: Support resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change.	**Indicators:** - Vulnerability assessments show decrease in vulnerability in all 9 villages as per the methodology used in the preparation phase vulnerability assessment - Target population's average annual income level

[3] https://undg.org/wp-content/uploads/2017/06/UNDG-UNDAF-Companion-Pieces-7-Theory-of-Change.pdf

[4] Source : original PRODOC

Component/Outcome 1: Climate change and gender are included in development plans and budgets at national and sub- national levels Outputs - Five targeted departments and municipalities and all relevant Ministries have integrated gender responsive climate change adaptation in their planning and budgeting work - Agricultural extension agents and local NGOs active in the 5 targeted municipalities are trained on resilience to climate change - Lessons learned are summarized in a repository and shared	**Indicators:** - Number of Municipalities that have considered climate change and gender in their PDC (communal development plan) and PAI (Annual investment plan) - Number of extension agents and NGOs skilled to deliver adaptation extension and TOTs.
Component/Outcome 2: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns Outputs - At least 9 small scale climate resilient water harvesting infrastructures are designed and implemented in the 9 targeted villages - Resilient practices, such as drip irrigation techniques or short cycle improved seeds, are adopted by at least 300 households in the five targeted municipalities	**Indicators:** - Number of operating financed water infrastructures per municipality, including management - Number of people who master and use climate resilient techniques promoted by the project (e.g, drip irrigation, short cycle seeds ...)
Component/Outcome 3: improve the targeted communities' adaptive capacities by supporting the diversification of their income generating activities Outputs - Targeted population's dependency and vulnerability to climate change effects is reduced through the introduction of alternative livelihoods for approximately 4000 persons - All women of target population (3,281 women) are trained on alternative livelihoods to agriculture to better cope with climate change impacts - The capacities of 300 rural entrepreneurs and 50 SMEs (aiming at 50% women) to develop business plans in the field of sustainable craft and small scale manufacture are strengthened in order to stimulate employment and revenue increase	**Indicators:** - Number of women engaged in subsistence agriculture trained / strengthened on alternative livelihoods to agriculture - Number of farmers with access to finance as a result of training and more diversified activities

Box 2: project components, outcomes and outputs

2.6 Expected results

As indicated in Box 2, the project results were the following:

(i) Climate change and gender are included in development plans and budgets at national and sub-national levels: to be achieved through institutional support

(ii) Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns: through improved access to water for farmers as well as alternate income generating activities

2.7 Baseline indicators established

The project document included a list of indicators for the objective and all three components, referring broadly to the outputs. These indicators were used all along during project implementation but with some minor adaptations.

At the objective level, the indicators (1)and (2) "Vulnerability assessments" and the beneficiaries' "level of income" were established quite late during implementation, by the time of the MTR actually; hence, it is anticipated that only two assessments would be carried out including the final one by project's closure.

This might not be as planned but although they could have been conducted much earlier during implementation (2018/9), actual project results were produced sequentially by municipality, over time. So change at objective level could only be observed once infrastructures and other project results had started to produce effects on beneficiaries ; hence, at a much later stage of project implementation than just mid-term.

As for the baseline of the components' indicators, all were easily established as they were quantitative. Furthermore, (see chapter on M&E), a very detailed assessment on how to measure indicator levels was drafted early during implementation by the M&E project specialist. This facilitated both the establishment of baseline indicators and their subsequent monitoring.

2.8 Main stakeholders

The Ministry of Development and Government Action Coordination (MDC) was the key stakeholder in the project, with the Partnership and Expertise Centre for Sustainable Development (CePED) responsible for leading the project execution. UNDP provided oversight and had a supervisory and facilitating role in project execution (National Implementation Modality – NIM).

As per PRODOC, the project had sought collaborations with the following stakeholders:

- Deconcentrated institutional beneficiaries: prefectures, Departmental Directorate of Agriculture and Livestock, departmental councils, municipalities/communes, Territorial Agencies for Agricultural Development (ATDA);
- Civil society organisations: grassroots community organisations and agricultural associations/cooperatives, COBA;
- Specialised service providers:
    a. Microfinance Fund - Fond National de la Microfinance (FNM)
    b. Fond National de Développement Agricole (FNDA)
    c. Association Nationale des Organisations Professionnelles d'Eleveurs de Ruminants (ANOPER)
    d. National Institute for Agricultural Research of Benin (INRAB)
- Potential beneficiary ministries of the project:
    a. Ministry of Agriculture, Livestock and Fisheries (MAEP)
    b. Ministry of Water and Mines (MEM) and General Directorate of Water (DGE);
    c. The Ministry of Living Environment and Sustainable Development (MCVDD)
    d. Cofinancing interventions: PCM-Bonou and Millennium Villages projects (closed to date)
- Complementary partners including
    a. International Bamboo and Rattan Organisation (INBAR), universities
    b. Benin's African Guarantee Fund;
- Beneficiary populations (Avrankou, Bohicon, Bopa, Ouaké and Savalou)
- Local NGOs.

A comprehensive analysis of potential stakeholders was provided in the PRODOC. It included for each stakeholder their level of interest in the project and their potential role in project implementation either as active implementers and/or as beneficiaries.
In reality, support will vary from what was originally envisaged, with some interventions being closed, some new stakeholders appearing, and others having only a minor role in the project.

2.9 Preparation and implementation timeline

The timeline for project preparation and implementation is presented in Table 3.

Preparation	
GEF project concept approval	March 2014
CEO approval of PIF submission (revised)	August 2014
STAP review	March 2015
Full-size project approval (council letter)	October 2017
Implementation	
PRODOC signature & official start-up	December 2017 / February 2018
Inception workshop	May 2018
Appointment of National Project Manager	Early 2018
COVID pandemic lockdown ("*cordon sanitaire*")	March – May 2020
1st meeting of project board	May 2019
Planned MTR	May 2020
Actual Mid-term Review	December 2020
Planned Terminal Review	September 2022
Actual Terminal Review	December 2022
Planned project end	February 2023

Table 3: Project preparation and implementation timeline

The project preparation was particularly long in this case - 3 ½ years - from PIF to actual PRODOC signature although the project manager was immediately contracted, which facilitated early implementation (in particular tenders' preparation).

Despite the COVID pandemic that somewhat slowed down implementation (delays in works, consulting…), the project never came close to a complete standstill. This enabled the project team to continuously implement activities until the TE – effectively delivering results right until now -.

2.10 Total resources

The project total resources at formulation stage were the following:

- GEF: 4.450.000 US$
- Government: 3.000.000 US$

And two existing projects

- Millenium Village: 12.000.000 US$
- PCM-Bonou: 15.000.000 US$

The total project cost was 34.450.000 US$

3. Findings

3.1 Project design / Formulation

The project's objective was to support climate resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change.

The logic behind the project design was to address the lack of resilience of vulnerable populations to climate change.

Benin has been addressing climate change with a range of interventions starting as early as 2007, with a bigger push through the generation of PANA[5] projects (e.g. PANA-Bénin, PANA-énergie). Mixed results came up from these interventions (e.g. lacking focus on main issues and insufficient scaling-up potential) ; therefore, an overall consensus was found on increasing scope, refocussing on key issues and scaling up as a sounder approach to increasing populations' resilience to climate change.

That is why the PMSD was formulated with a focus on 3 key issues:

(i) A *lack of capacity of decision makers – especially at decentralised level* - to address climate change issues in their planning processes, so as to increase local funding effectiveness,

(ii) Populations remaining highly vulnerable to extreme weather events because of a *lack of capacity to absorb climate change-related shocks, with a focus on smallholders* dependent on rainfall for their livelihoods (in particular rainfed agriculture)

(iii) The same populations with *few if any livelihood options not directly dependant on primary agricultural production*.

The project is part of a larger national strategy aiming at ensuring climate additionality through projects' funding efforts. It means that the effects of the project are supposed to offset climate change. This is to be achieved primarily by reducing populations' vulnerability to climate change (making them less dependent) and ensuring that the projects' effects are well documented and reproductible for scaling-up.

The project design was a long-haul effort (nearly 4 years) and interviews showed that there were extensive consultations at local level to ensure that proposed solutions are key priorities for stakeholders (e.g. climate change mainstreaming in processes at decentralised level, increasing resilience of smallholders through less dependence on ever more erratic rainfall patterns with more stable revenues coming from irrigated agriculture and new income generating activities

With regards to the project design itself, it is obvious that a very straightforward design (3 components 9 outputs) brings great clarity and simplicity, which immensely facilitate implementation.

[5] National Adaptation Programme of Action

The project was implemented through UNDP's National Implementation Modality (NIM), with the MDC serving as the designated national implementing agent and CePED as the operational executing entity.

3.1.1 Analysis of the Results Framework

- Project objective, outcomes (see Box 1):

The overall objective is well in line with climate change adaptation through this three-pronged approach at *institutional level* and locally on *direct* (water management) and *indirect* and/or non-agricultural production (IGA). These are well within the framework of GEF's global benefits on climate change that include[6]:

  - Climate change vulnerability reduction of populations most at risk;
  - Improved water management for agricultural production.

All three aspects can mutually enhance each other and run in a virtual circle of action – reaction : institutional support guides local institutions in providing assistance to populations to reduce vulnerability. Both agricultural and (non)agricultural aspects of PMSD can mutually reinforce each other; IGA's diversification reduces vulnerability to climate change and (near) year-long irrigated agricultural production generates surplus that provide more stable revenues over time that can be invested into IGAs ; hence creating a virtuous circle that can overall be guided by authorities that orient investments that are more climate-proof.

- Indicators and targets:

The analysis of the log frame and its set of indicators has shown that most (but not all) are SMART. Still, thanks to a detailed analysis of indicators through the operationalisation of the M&E plan, it was quite easy for the PMU to follow-up implementation.

In particular, the MTR had flagged a number of issues with some indicators (1, 3 and 6) including a lack of specificity and meaning, while they can be easily monitored, they are not tailored enough to the actual project results (see Table 4) or are too ambiguous so that they are always met. Indicator 5 was deemed too complex for its target to be met within the project timeframe.

Several issues were fixed / resolved when the baseline studies were completed after the MTR or when the indicators were effectively measured (source: PIR). These included:

- Indicator 1: too unspecific ; the method used in the baseline study (completed after the MTR) for measuring vulnerability is sound and the indicator is now SMART
- Indicator 3: too unspecific as the target is met when municipalities just consider CCA after training ; PMU understood this issue and the target was to be met when municipalities are actually mainstreaming CCA into their planning processes ; so the indicator is SMART
- Indicator 5: the target associated with this indicator was considered quite complex as it required full sustainability of the entire water scheme. This may be too difficult to achieve by project's end and a softer indicator would have been welcome like "management structures and staff in place, trained and

[6] https://www.thegef.org/sites/default/files/publications/GEF_AdaptClimateChange_CRA_0.pdf

operational". PMU actually understood this and de facto simplified the indicator and assessed the target achievement when "infrastructures are completed and provisional management committees are put in place and technically supervised"[7]. This indicator is also SMART.

- Indicator 6: Too unspecific and prone to any definition; PIR sources show a simplified version of this indicator with the number of people from water schemes that are members of the scheme ; this implies that they do apply some (unspecified) climate resilient techniques that they gained from project training sessions ; still, because of construction delays, some schemes were yet to be opened at TE stage, just months before project closure ; so it might not possible – in theory – to confirm that these beneficiaries do adopt CC-proof techniques by project closure.

A detailed indicator/target analysis is under Table 4

Description	Description of Indicator	Target Level at end of the project	Specific	Measurable	Achievable	Relevant	Time-bound
Objective **Support resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change.**	Indicator 1 - Vulnerability assessments show decrease in vulnerability in all 9 villages as per the methodology used in the preparation phase vulnerability assessment	Average vulnerability is reduced by 30% in all PANA-1 villages and 50% in non-PANA-1 villages	Y	Y	Y	Y	Y
	Indicator 2 - Target population's average annual income level	50% increase	Y	Y	Y	Y	Y
Outcome 1 **Climate change and gender are included in development plans and budgets at national and sub- national levels**	Indicator 3 - Number of Municipalities that have considered climate change and gender in their PDC (communal development plan) and PAI (Annual investment plan)	All targeted municipalities that have reviewed their PDC and/ or PAI during this period	Y	Y	Y	Y	Y
	Indicator 4 - Number of extension agents and NGOs skilled to deliver adaptation extension and TOTs	Numerical targets will be established during the inception phase of the project, based on the relevant assessments.	Y	Y	Y	Y	Y
Outcome 2 **Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns**	Indicator 5 - Number of operating financed water infrastructures per municipality, including management	At least 90% of the planned infrastructure per municipality is operational, as well as the capacities to operate them in a sustainable way and including women	Y	Y	Y	Y	Y
	Indicator 6 - Number of people who master and use climate resilient techniques promoted by the project (e.g, drip irrigation, short cycle seeds ...)	6163 =100% of target population mastering and using climate resilient techniques promoted by the project	Y	Y	Y	Y	Y
Outcome 3 **improve the targeted communities' adaptive capacities by supporting the diversification of their income generating activities**	Indicator 7 - Number of women engaged in subsistence agriculture trained / strengthened on alternative livelihoods to agriculture	3281 women (=100% of women in target population) engaged in subsistence agriculture) trained / strengthened on alternative livelihoods to agriculture	Y	Y	Y	Y	Y
	Indicator 8 - Number of farmers with access to finance as a result of training and more diversified activities	At least 75% of people trained through the project who requested a loan got it	Y	Y	Y	Y	Y

[7] Source : PIR 2022

Table 4: SMART analysis of the logical framework

- Components/outcomes and outputs:

Component 1 and its outputs focus on soft powers, enhancing the capacity of selected decentralised entities to mainstream gender responsive CCA into planning processes, raising the capacity of local practitioners to integrate CCA measures in their day-to-day work and ensuring that lessons learned and successes are internalised by relevant stakeholders (in particular CePED/MDC).

Component 2 focuses on hardware and making sure that sustainability principles are adopted with water retention structures construction, training of beneficiaries in creating revenue through agricultural production using sustainable and climate-proof techniques, organising members to ensure long-term viability of these irrigation schemes.

Component 3 is on reducing vulnerability through income generating alternatives, both based on agriculture production (e.g. value addition) or non-agricultural activities and also on indirect support to SMEs or micro-enterprises (training, access to finance) that in turn can add value from these irrigation schemes' agricultural production.

Overall, this points out to a sound project logic with each outcome benefitting from the other two's potential effects..

Cross-cutting considerations include:

- Gender responsiveness of project design: PMSD took into consideration gender with women as potential direct beneficiaries; it came short of directly targeting women specifically but in operational terms women would benefit directly from project results (in particular from outcome 2 on women-led irrigation farming groups or inclusion of women including in leading roles into local infrastructures management committees) ; hence evidencing a gender balance in both project benefits and actual participation in local decision taking processes
- Poverty reduction & sustainable livelihoods ("Leave No-one Behind"): this was the key consideration in the project log frame targeting populations that are reliant on erratic rainfall patterns for their livelihoods[8], hence highly vulnerable in terms of food security but also on nutritional grounds.
- The project was also a response in disaster mitigation from erratic rainfall patterns through increasing populations' resilience in agriculture with the managing (and ultimately) regulation of (sub)surface water flows resulting in crop failure from droughts and inundations

The project was not very clear in relation to biodiversity considerations: training sessions of farmers included a mix of techniques for intensive farming (use of chemicals and pesticides, high yield seeds not necessarily locally-bred by farmers), softer biodiversity conservation techniques (pest biological control, compost preparation, mixed cropping…) and provisions for minimising the (supposedly negative) impacts on biodiversity.

- Capacity development activities: several if not most outputs are based on capacity building in PMSD, taking advantage of (i) existing extension structures (territorial agency for agricultural development "ATDA") to divulge

[8] Initially, rainfed agriculture activities as per initial PRODOC but also livestock farming later during implementation as new water reservoirs and borings would also impact the livestock sector

climate-resilient techniques through ToT and then from ATDA[9] to beneficiary farmers, (ii) extensive expertise acquired in mainstreaming CCA into planning processes at a decentralised level from numerous previous interventions (e.g. PNA project, GIZ-funded project on municipality support and others).

3.1.2 Assumptions and risks

An extensive analysis of project risks and their mitigation measures was included in the PRODOC and is summarised in Table 5 with TE team comments.

Overall, risk was monitored on a periodic basis and as per UNDP procedures recorded in the ATLAS risk management register. Overall, the risks identified in the PRODOC are most relevant.

Risk	Rating	Mitigation measures	TE comments
Unavailability of human resources and necessary data	M	The problem of unavailability of the required human resources will be mitigated by the recruitment of international consultants who will work closely with their national counterparts (APRM) and by targeted capacity-building activities. Training activities for local staff will also be part of all aspects of the work, and relevant institutions will be encouraged to expand the staff base if it is weak in particular areas.	This was valid without a global pandemic… In practice, international consultants were barred from travel in 2020, 2021 and most of 2022, a situation that resulted in the contracting of local consultants and remote interactions
Extreme weather events such as floods and droughts could disrupt the project activities and/or damage ecosystems and infrastructure.	M	Coordination will be undertaken with disaster response partners to ensure that disaster relief interventions are directed to demonstration sites affected by extreme weather events. Appropriate species will be used for project interventions to minimize potential medium- and long-term impacts. Where damage occurs before adaptive approaches to ecosystem management can reduce the impacts of extreme events, additional infrastructure, and planting approaches will be undertaken.	There were (expected/regular) flooding events in some areas but the risk was not much impactful during the project timeframe
The introduction of species resistant to climate change (flora) could put pressure on local ecosystems and biodiversity.	L	A meticulous analysis of the ecosystem of the target location, as well as the presence/absence of special status species, will be carried out prior to any insertion. If the resistant species has potential invasive characteristics, best practices for managing the spread of this species will be implemented, as well as training and capacity building of the culture governance body.	As mentioned during the MTR, any adoption of BMP is demand-driven and unlikely to be widely successful if there is no economic incentive and support to the meat and sugar cane industry, support that was not included in the project (as out of project's scope); this is further evidence that the project was very ambitious in its objectives to the sectors involved
The preparation, construction, and operation of some hydrological infrastructure to increase resilience could have temporary adverse effects on physical, biological, or human environments.	L	Environmental and social studies conducted prior to any infrastructure work likely to have an impact will help identify the best mitigation measures. As a general rule, contractors should follow the general guidelines described in the Environmental and Social Management Plan (ESMP) and develop site-specific mitigation measures. The latter element will be part of the capacity building effort targeted at contractors. In addition, monitoring and control will be carried out by the villagers with the help of authorities and/or qualified specialists. Finally, concerning the health and safety risks posed by the presence of river basins (risks of drowning and proliferation of vector-borne diseases), the competent authorities will be called upon to raise awareness of these risks and include new infrastructures in their ongoing disease control measures.	This risk may have been overlooked, given the fact that several additional actions were undertaken from pictogrammes on water reservoir drowning dangers to training sessions on both physical risks and disease proliferation risks

[9] Agence Territoriale pour le Développement Agricole - Territorial Agency for Agricultural Development
[10] L low, M medium, H high risks

The increased resilience (and thus productivity) of previously poor land could generate some intra/inter-community tensions over access to this new, richer land.	M	Specific activities to address this issue are included in the project (see results 2.2 and 2.3).	This risk was actually high as the construction of water reservoirs attracted livestock rangers that sought water for their livestock, resulting in conflicts with farmers (field degradation) and high risks of reservoir contamination through livestock dejections. In some villages, this became a serious issue (and still remains an issue today in some areas), leading to drastic adaptative measures like the construction of specific drinking throughs.
Limited capacity within departments/insufficiency of human resources. Irrigation works could generate real or perceived conflicts of use between communities as well as pressure on ecosystems.	L	An important part of the project aims to strengthen institutional and technical capacities for the planning, design, and implementation of adaptation actions at the local level. Technical and capacity building expertise will be engaged to work with and train local technical staff. A dedicated project manager will be supported by national and international short-term specialists to ensure smooth and rapid delivery of project results. Environmental and social studies will ensure that the design of any irrigation work does not impinge on the use of water resources by other communities. In the same vein, environmental studies will ensure that ecological instream flows are respected in cases where water abstraction is non-marginal. All these infrastructures will include a broad group of stakeholders in their design and preparation in order to minimize the risk of conflict. All stakeholders will have access to the governance body responsible for the infrastructure as well as formal means to voice their concerns.	This was not an issue through the contracting of local companies for the construction of infrastructures. Only the *Cordon Sanitaire* (lockdown) proved problematic with cost overruns to seek construction materials further away. Many training sessions were indeed delayed, sometime for a long time, but the project kept up with recycling training sessions.
Incorrect answers from the provinces to the leading role of APRM Limited capacity within relevant ministries / qualified human capacity is insufficient.	M	The provincial authorities were consulted individually during the preparatory phase and approved the FPMA project. The PSC will engage with the relevant provincial authorities throughout the duration of the project. A large part of the project aims to strengthen institutional and technical capacities for the planning, design, and implementation of adaptation actions at the local level. Technical and capacity building expertise will be engaged to work with and train local technical staff. A dedicated project manager will be supported by national and international short-term specialists to ensure smooth and rapid delivery of project results.	This was not a significant risk. One overlooked issue (at least in one municipality) has been the change of municipal majority that can result in strategic orientations changes, hence resulting in less interest / modified municipal priorities for development.
Insufficient willingness to implement climate change planning or budgeting tools at both national and communal levels Poor responses from provinces to the leading role of APRM		A strong consultation and awareness-raising process will be carried out to raise the interest and concern of local authorities about the benefits of climate change planning and budgeting. Provincial authorities have been consulted individually during the preparatory phase and approved the LDCF project. The PSC will engage with the relevant provincial authorities throughout the duration of the project.	The issue has not been the lack of interest or even action to mainstream CCA into planning processes but the difficulty to identify sources of funding specific to CCA for actual implementation. This has been all the more difficult for current PDCs with definitive financial allocations, so the most potential exists for the next (4th) generation of PDC.

Table 5: Risk analysis review

A global pandemic was never considered a risk for the intervention but it will prove disruptive.

The Social and Environmental Screening Template (SESP) was completed for this project and well updated, due to COVID. See Section 3.2.7 for discussion of updated risks.

3.1.3 Lessons learned from other projects incorporated into project design

Extensive information is available in the PRODOC on lessons learned from other projects feeding into the intervention's design.

First, PANA-1 show promises for adoption potential by beneficiaries on CCA techniques but also a lack of strategy in scaling-up similar interventions.

Second, the project design took into consideration existing interventions from cofinancers such as Millenium Village project and the PCM-Bonou project with a view on scaling up and more focus on key vulnerable population priorities (stable revenue and food security).

Third, the project would benefit from experience in small infrastructures designs from NGOs and also specialised resource-persons to ensure that these infrastructures are climate-proof and other technical issues that may arise are dealt with efficiently.

3.1.4 Planned stakeholders' participation

The core stakeholders of the project in addition to the final beneficiaries (farmers, communities and livestock rangers, municipalities) were MDC, CePED and MAEP.

In addition, stakeholders included several line ministries with either consultative and/or advisory roles such as MCVDD, MDGL.

ATDA staff had a dual role both as a beneficiary from training sessions on innovative agronomic techniques (bamboo introduction, climate-proof techniques) and as a training entity (extension services) transmitting knowledge, providing oversight of involved farmers in project irrigation schemes, hence enhancing project results.

The design took also into consideration the need for resource-persons, not directly involved in the project implementation but called upon when needed for technical advice. These showed great value both during project sites' visits and at Board meetings. The most value was evidenced from DGE on water (infrastructures)-related issues, INRAB and the Faculty of Science for agronomic issues.

Overall, few beneficiaries participated in Board meetings (some municipalities did attend on occasions) despite being mentioned in the PRODOC. It is surprising that this was not flagged out by UNDP or GEF itself. Most often, the participation of beneficiary representatives as observers enlightens project decision makers on actual /practical issues, as experienced by people on the field but also serves an important purpose in explaining and directly informing local stakeholders on project progress and why there might be implementation bottlenecks impacting beneficiaries.

The planned stakeholders and actual contribution are presented in Table 6.

Key institutions/stakeholders (as per PRODOC)	Project participation ✓ as planned 0 not planned or no evidence			
	Project delivery/participation		Executive Board	
	Planned	actual	planned	actual
Small-scale farmers / small holders	✓	✓	0	0
Livestock farmers	0	✓	0	0
Municipalities	✓	✓	✓	✓ (on occasions)
MDC	✓	✓	✓	✓
CePED	✓	✓	✓	✓
MAEP	✓	0 (minimal)	✓	✓

ATDA	✓	✓	✓	0
UNDP	0	0	✓	✓
MEM (DGE) (as resource institution)	✓	✓	✓	✓
INRAB (as resource institution)	✓	✓	✓	✓
MDGL (DGCL)	0	0	✓	✓ (on occasions)
MCVDD	0	0	✓	✓ (on occasions)
Small Grant Programme (UNOPS-UNDP)	✓	0	0	0
Associations	✓	✓	0	0
UNV programme	✓	✓	0	0
NGOs	✓	✓	0	0
Agriculture vocational schools	✓	✓ (1 site)	0	0
Faculty of Agricultural Sciences and applied ecology laboratory	✓	✓	0	✓

Table 6: Planned/actual stakeholders' participation

3.1.5 Replication approach

The PMSD is building on the successes, results but also taking stock of deficiencies of the NAPA-1 project. The NAPA-1 TE showed that farmers keep adapting and trying new adaptation technologies even after the project implementation period, underlying their interests in sustaining project activities and adaptation investments beyond the implementation period. However, project design rarely includes provisions for ensuring/prioritising scaling-up.

In this context, the PMSD is a new type of project aiming at scaling-up interventions through detailed documenting and taking up lessons learned to guide future funding. This approach's logic is that previous projects generations - how impactful they may have been – did not build on success to guide new project designs, hence maintaining a cycle of reinventing the proverbial wheel instead of focussing on previously successful and tested approaches, designs and techniques.

PMSD has a specific output (1.3) on summarising lessons learned in a repository (as well as including these in periodic reports), so as to record best practises.

Furthermore, this exercise on documenting and taking up lessons learned from PMSD is led by CePED under the supervision of MDC and due to result in a Government-approved methodology[11] for this kind of project that would guide Government when allocating new funding (MDC has a leading role on approving sectoral interventions – including from the agriculture and water sectors).

[11] Five municipalities have been selected under PMSD but Benin has declared over 21 municipalities as most vulnerable to climate change

3.1.6 UNDP comparative advantage

UNDP has been committed to building up the capacity of the country through mainstreaming environmental (and climate change) related considerations in the development processes at national and community levels.

The main advantage of UNDP is its capacity to mobilise financial resources on behalf of Benin's Government to prepare with it, project proposals that are endorsed and implemented.

UNDP's comparative advantage is several-fold: (i) UNDP is a neutral platform for development and has been able to build a trustful relationship with Government; (ii) UNDP is seen by Government as a multipurpose agency that favours a sector-wide approach to development while other (non-)UN agencies/donors are more sector-based (UNDP is active in many sectors like agriculture, forestry, governance, water & sanitation, energy and climate change among others); (iii) UNDP's strategy favours a pro-poor/participatory approach focussing on engaging with and empowering the most vulnerable – a focus on the population living under the poverty level - while many other donors will support large-scale interventions that may benefit large swaths of the population but are based more on economic cost/benefit ratios; (iv) UNDP will support preferably soft development processes benefitting primarily more vulnerable people instead of large-scale nation-wide infrastructure programs; (v) UNDP has the ability to capture large scale funding as compared with international NGOs, hence (potentially) resulting in more impactful interventions.

Within the Benin context, UNDP has acquired an extensive experience with GEF through implementing 30+ GEF-funded national & regional interventions with most of them (>60%) under the climate change focal area. These included some older interventions like "Integrated Adaptation Programme to Combat the Effects of Climate Change on Agricultural Production and Food Security" or "Strengthening Climate Information and Early Warning Systems in Western and Central Africa for Climate Resilient Development and Adaptation to Climate Change" but the PMSD design was also guided by more recent interventions like the Millenium Village initiative and the subsequent PCM-Bonou project (that were actually considered as cofinancers).

Overall, UNDP has been at the fore-front in the past decade in mainstreaming climate change adaptation considerations in development processes, in particular for decentralised entities (municipalities, departments) with long-haul support to municipalities.

Therefore, UNDP can bring valuable expertise – including directly through its country office HR – in climate change adaptation and in identifying relevant RH to support interventions' implementation as a means to optimise implementation efficiency and effectiveness.

Finally, UNDP's support is valuable for revising projects' planning exercises during Steering Committees meetings and, due to its proximity with executing agencies, for additional advice to GEF to resolve outstanding issues (e.g., amend log frame and/or indicators/targets and speed up recruitment processes among others).

3.1.7 Linkages between the project and interventions within the sector

As per PRODOC, the PMSD was building up on achievements made in some municipalities impacted by PANA-1 but also scaling up resilience interventions that were initiated by other projects.

These included the project cofinancers, the Millenium Village and PCM-Bonou, that provided extensive support in the agriculture sector (in particular increasing farmers' productivity with improved seeds and modern inputs) when implemented.

Still, by the time PMSD was initiated, these projects were in their final phases and there is no recording of extensive coordination/collaboration with PMSD.

Be that as it may, several lessons learned were integrated in PMSD with the use of moderate/high yield horticulture seeds for vegetable production under irrigated conditions, as well as improved seeds (not F1) and/or and climate-proof (drought, waterlogging) seeds for rainfed crops, resulting in accrued productivity as well.

The PRODOC was not short on potential collaborations including the PACER project (*Projet d'appui à la croissance économique rurale*"), PPEA (*Projet de Promotion de l'Entreprenariat Agricole)*, the SAP project (*Système d'Alerte Précoce)*, all of which may have provided some value for PMSD implementation. Still, there is little if any evidence of clear (formalised) collaborations with the above mentioned projects, including cofinancers.

As per PRODOC, access to finance under Outcome 3 was being considered and partnerships would be established with Consortium Alafia-APSFD that support micro-finance institutions that in turn, could facilitate microcredit access of beneficiary farmers and micro-enterprises/SMEs.

By TE phase, no formal partnership had been established but contacts were made to assess feasibility of integrating PMSD beneficiaries into the micro-finance system. It appears that most project efforts were dedicated to ensuring strong sustainable results for outcome 1 and 2 and that activities on outcome 3 related to access to finance were to be implemented once farmers were in the right conditions (agricultural production available) and mindset to request access to finance. These conditions are barely met by project's end.

3.1.8 Management arrangements

The 5-year project (February 2018 – February 2023) has been implemented under UNDP's NIM modality, following up specific procedures.

The executing agency (or Implementing Partner) was the Ministry of Development and Government Action Coordination (MDC), previously known as Ministry of Planning and Development (MDP) with the Partnership and Expertise Centre for Sustainable Development (CePED) responsible for day-to-day implementation.

The planned management arrangements as per PRODOC are illustrated in the organisational chart shown in Figure 1.

The project organisation structure as per PRODOC is as follows:

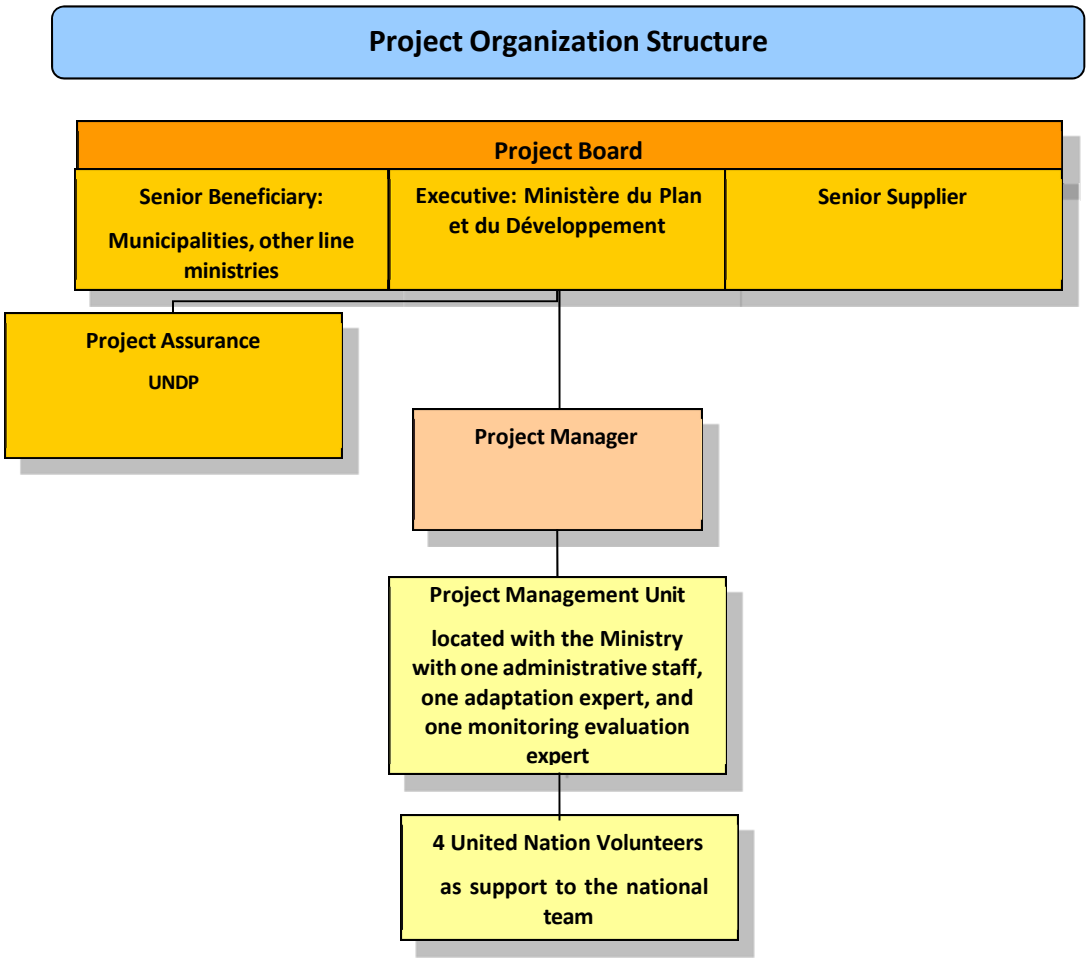

Figure 1: Planned project organisational structure 'PMU'

The management and governance arrangements for the project included the following structures:

(i) Project board (called Technical Project Committee) chaired by a senior MDC official (General Secretary) with representatives from UNDP, other line ministries (e.g. MAEP as the Committee's vice-President), ATDA, municipalities and departments as well as NGOs and other indirect stakeholders (e.g. microfinance organisations, municipalities' national association resource persons/institutions…) ; the board was in charge of reviewing and approving narrative and financial reports as well as annual planning or any project revision before submission to GEF

(ii) Project Management Unit housed in CePED and comprising a National Project Coordinator, an Adaptation Specialist, a Finance & Administrative Officer, an M&E expert as well as 4 supporting UNVs.

The adopted approach was to have a strong management unit able to steer and even implement some capacity building activities (which became a necessity at some point because of a lack of access to international consultants during COVID) and relying on external consultants for training sessions' delivery – hence, a somewhat hybrid implementation approach. This was at the time seen as an efficient strategy to speed up implementation.

It has been surprising to see that there were few if any beneficiary representatives in the project Board (e.g. municipalities) - even with an observer role -.

There was no substantial modification of the management and governance system over the entire course of the project.

3.2 Project implementation

3.2.1 Adaptive management

Adaptive management corresponds to the level of flexibility that the Project had to adopt in reaction to the changing dynamics. These are the adjustment mechanisms to respond to changing contexts and improve the execution of the Project.

The project under the NIM modality was to be implemented from February 2018 to February 2023 (project signature in December 2017). The initial recruitment of the Coordinator was very swift as he was previously working within CePED. This enabled a swift project operationalisation start. With the initial inception workshop combined with a Board meeting, measures were taken to effectively early on draft tenders for most infrastructures' works.

PMU adopted a range of adaptive measures to ensure the achievement of results. This included at the very least the following:

- At operational level – for initiating on-site activities - , it was necessary to adapt to the local conditions. No site was equal and the PRODOC initial strategy of water reservoirs for irrigation proved soon ill-adapted for most sites; geology did not allow it, terrain and landforms neither, in some sites, the issue was the lack of water during the dry season and in others, excess water; So, an adaptive strategy was devised to identify the most practical and effective measures for each site that would efficiently and decisively contribute to the project result; that required initiative and innovation resulting in a wide variety of solutions ranging (water reservoirs, switch from reservoir to boring because of potential silting issues, plain borings, borings within hand-dug shafts, taking advantage of artesian aquifers, no irrigation but aquaculture as an IGA instead…). All in all, this enabled to substantially increase project efficiency ("more per dollar")
- Activities resulting in unexpected results, hence a solution had to be devised to mitigate any negative effect; this was the case with the construction of water reservoirs and the effects it had on the livestock sector. To avoid exacerbating conflicts between farmers and herders, it was necessary to accommodate as well herders with the construction of water throughs for livestock to reduce potential conflicts
- COVID pandemic impacting the first communities that were producing from irrigation schemes with lockdown measures that wasted their vegetable production; hence proposals were made to consider conservation techniques for vegetable due to the lockdown and borders' closure impacting seriously border communities; PMU searched for alternatives like vegetable processing (drying) but this met little success when commercialised in large southern cities
- A COVI19 fund was established with mitigation measures (e.g. preparation of hydroalcoholic gel and soap production that would remain after the lockdown as an IGA)

- Renewable energy option for pumping water instead of generators
- Distance monitoring of works by PMU through WhatsApp (videos and photos) to assess milestones completion and remote Board meetings to ensure project continuity (COVID consequence)
- Training session participation reduced due to COVID and switch to ToT (mainly ADTA staff) to ensure adequate divulgation of CCA techniques in project sites
- Poor adoption of bamboo as a multipurpose crop, including for embankment stabilisation and switch to Vetiver spp. and of Gmelina arborea on embankments

The overall focus of the project (project goal, objective, and outcomes) remained unchanged over the whole project period but all these measures enabled the project to keep delivering despite the pandemic.

3.2.2 Communication

Activities as per communication plan took various forms with (i) project folders, (ii) awareness-raising events and participation in regular events (e.g. women rights' celebration…), (iii) events to launch activities including with media involvement (e.g., media campaigns among others).

Attention was made to (re-introduce) the project concept and value addition after the 2020 municipal elections to ensure collaboration and ownership of newly elected authorities. Interviews showed a wide acceptance of the project in all 5 municipalities.

UNDP and the Government were very active on regular and social media and their respective internet websites on this project with also media press extracts and video interviews.

Still, if PMSD made efforts to ensure widespread dissemination of the project concept, interviews showed that a substantial part of the generated interest in the project at local level was through word of mouth between beneficiaries and members of neighbouring villages/communities/municipalities. This may explain – at least partially - why there is a constant flux of interested people in enrolling in these irrigation schemes whenever initial members decide to abandon the project irrigation schemes.

This is most important when considering scaling-up strategies.

3.2.3 Actual stakeholders' participation and partnership arrangements

Overall, interviews showed a very good level of participation of most if not all PMSD stakeholders with local stakeholders deserving a particular mention for their proactivity (see Table 6 pg31).

As per interviews, the following can be highlighted:

- Small-scale farmers / small holders: interviews showed a strong involvement in the project even though it can be viewed as risky because many groups had no experience whatsoever in horticulture. In point of fact, it appeared that membership rates for irrigation schemes has been very fluid resulting in a sieving process keeping the most motivated farmers and attracted those that initially were denied access because of lack of space; local communities were instrumental on several sites for supporting the boring companies in solving technical issues (collapse of sandy boreholes)

- Livestock farmers: the construction of water reservoirs had an unexpected impact. It created attraction of livestock farmers (both sedentary and transhuman pastoralists) with a clear problem of conflict growing rapidly. This resulted in mitigation measures through the construction of water through for livestock away from water reservoirs and reducing watering distances for livestock (to ensure minimisation of conflict with farmers for livestock degradation of irrigated farmland) and avoiding reservoir pollution
- Municipalities: there was a high degree of cooperation with the project starting with the training sessions on CCA mainstreaming but also extensive efforts were made by the municipalities to ensure that key prerequisites were met for actual project implementation of component 2 (water reservoirs construction and irrigation schemes successful implementation) ; these included facilitation to free agricultural land for irrigation, actual water reservoir location, dedicated space for pumping infrastructures and energy sources (PV schemes) and follow-ups in the attribution of land plots and parcels. The project results would have been very different, should there have been poor collaboration with municipalities
- MDC and CePED: PMU was embedded in CePED, resulting in close collaboration with the institution. MDC had a more supervisory role – in particular at Board level (presidency) – and has been closely liaising with CePED on making sure that the project approach, results and effects are well documented so that lessons learned can be drawn and drafted into a formal Government paper on water management and CCA that would guide future Government actions (e.g. scaling up efforts).
  This project was also characterised by strong political support with on-site visits by the MDC minister in addition to the regular General Secretary and CePED's Director
- MAEP's role was as well project's oversight (Board vice-presidency) and support when needed to resolve technical issues. Its role may have been secondary in relation to ATDA at the forefront of the project on agricultural matters
- ATDA benefitted from training sessions on CCA techniques but has been very proactive in following up farmers on technical agricultural matters. It appears that the bamboo plantation activity was not much followed-up by ATDA because it is not in their primary field of expertise (bamboo is followed up by Forestry). ATDA seem to understand their key role in ensuring long-term sustainability of project results through follow-up and technical advice when needed/requested by farmers
- MEM (DGE), INRAB and the Faculty of Agricultural Sciences and applied ecology laboratory were resource institutions that made available their expertise to ensure a smooth technical implementation; they were key stakeholders for assessing, reviewing and suggesting improvement regarding technical matters (e.g. upgrading initial water reservoir characteristics, suggesting add-ons for infrastructures (e.g. footpath on water reservoir bank, extending embankments to make water reservoir more climate-proof, testing other species to avoid embankment erosion…). Despite this, it appeared that PMU may have overseen the potential from these resource institutions as interviews showed that insufficient attention had been put on pest control in irrigated schemes although INRAB does have extensive experience and expertise in this area
- MDGL (DGCL) and MCVDD: they are Board members with probably an advisory role although there is little clear-cut evidence on what they might have contributed to
- Small Grant Programme (UNOPS-UNDP): there is no information as to what the role of SGP in the project was.
- UNV programme: it was extensively associated in the project with four available UNV supporting key PMU staff. They proved to be highly convenient for (i) supporting key PMU staff and (ii) ensuring continuity, once

key staff had departed from the project; in that sense, they ensured implementation continuity and contributed to the high delivery project rate

- NGOs active within the project area were recipients of training sessions on CCA; they played a role in dissemination and follow-up in respective areas of interventions. Agriculture vocational schools were associated in one urban municipality (Bohicon) with former students enrolling into an irrigation scheme serving as a business incubator for vegetable production (chili, okra, Vernonia spp., African basil, etc.)

3.2.4 Project finance and co-finance

As per CDRs's estimates, the total cost of the project (including Q2 2022) from 2018 to 2022 is explained in Table 10 and Table 9 with a note on budget variations. The co-financing evidenced an (official) 700-800% co-financing ratio as per Table 7 and Table 8.

Co-financing (type/source)	UNDP financing (US$m)		Government (US$m)		Partner Agency[12] (US$m)		Total (US$m)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants	0[13]	425.304	(300.000)	150.000	-	-	(300.000)	575.304
Loans/Concessions	-	-	-	-	-	-	-	-
In-kind	-	-	(2.700.000)[14]	2.600.000	27.000.000	27.000.000	29.700.000	29.600.000
Other	-	-	-	-	-	-	-	-
Totals	0	425.304	3.000.000	2.750.000	27.000.000	29.700.000	30.300.000	30.175.304

Table 7: Co-financing level (planned / actual)

Sources of Co-Financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (US$)
Civil Society	-	-	-	-
Private Sector	-	-	-	-
Donor Agency (UNDP & others)	Millenium Village	In-kind	Recurrent expenditure	12.000.000
	PCM-Bonou	In-kind	Recurrent expenditure	15.000.000
Total Co-financing				27.000.000

Table 8: Sources of Co-Financing at TE Stage[15]

It is worth mentioning the following:

- the actual (official) co-financing amounts re. both UNDP projects are in no doubt debatable approximations as the described activities[16] amount to expertise ; these activities can top up in the tens of thousands of

[12] UNDP through the PCM-Bonou and Millenium Village projects
[13] PPG amount is not included (100.000US$)
[14] Estimates as there was no discrimination between in-kind and cash Government cofinancing
[15] Source : UNDP/PMU
[16] Expertise in the implementation of alternative IGAs and studies for the installation of agribusiness platforms (PCM-Bonou) and Expertise in the implementation of alternative IGAs (Millenium Village)

UDS$ and in any case, a TE team gross estimate based on previous project evaluations, could raise the cofinancing support for expertise at no more than 10-15% of the project cost ; hence less than 300.000US$.

- UNDP provided extensive extra support through TRAC funds, mostly service contracts and to a lesser extent miscellaneous expenses related to non-wage benefits for project staff.
- The Government co-financing was significant with conventional in-kind support (office space including operating costs and maintenance) amounting to 95% and cash support in non-material intellectual services, and direct support for the construction of project water harvesting structures, for 5%.

The above implies that most co-financing actually stems from the Government, complemented by specific/specialised expertise from the UNDP projects (PCM-Bonou and Millenium Village) and TRAC funds.

Overall, a more realistic estimate revolves around 1-1 ½ times' GEF funding.

Table 9 shows delivery rates compared with PRODOC and AWP.

One obvious point is that PMU was very keen to initiate works (and related activities like TORs preparation, tender launching...) as soon as possible by budgeting very large amounts ensuring swift infrastructures' construction (e.g. 215% spent in relation to adjusted PRODOC suggestions). This would prove crucial when COVID would reduce substantially delivery : indeed, the project was clearly affected by COVID with a lower delivery in 2020 and 2021 in relation to AWP. It was more difficult to keep up with annual workplans during COVID.

Still, maybe by coincidence, actual delivery is fairly corresponding to or above planned PRODOC budgeting (at least for 2019, 2020 and 2021), resulting in controlled delivery delays. This is why the project had an excellent delivery rate, in line with PRODOC plans.

Budget/expenditure Year	PRODOC Work plan (US$m) (adjusted by year)	AWP (US$m)	Actual expenditure (US$m)	% Spent (actual / AWP)	% Spent (actual / PRODOC workplan)
2018	0.445	1.500	0.958	64	215
2019	1.014	1.515	1.511	100	149
2020	0.989	1.119	0.969	87	98
2021	0.847	1.072	0.761	71	90
2022[17]	0.997	0.201	0.105	52	10
2023	0.192	--------	--------	--------	--------
Total	4.464	--------	4.107		

Table 9: Annual Work Plan budget and actual expenditures (GEF only)
Source: UNDP CDR

The analysis of the cumulative delivery rate (see Figure 2) shows a swift implementation, always ahead of planned delivery as per PRODOC; this is why there was no need for a project extension and by Q2 2022, 96% of the budget

[17] Q1 and Q2 only

had been consumed, with just 4% (100-96%) of funds still to engage within 13% of project timeframe (8[18]/60 months).

The TE team is positively surprised that the implementation was very strong right from the project start (possibly a clear understanding by PMU to initiate construction works tenders as soon as possible as they may be prone to delays), which will prove critical due the subsequent slowdown by COVID19.

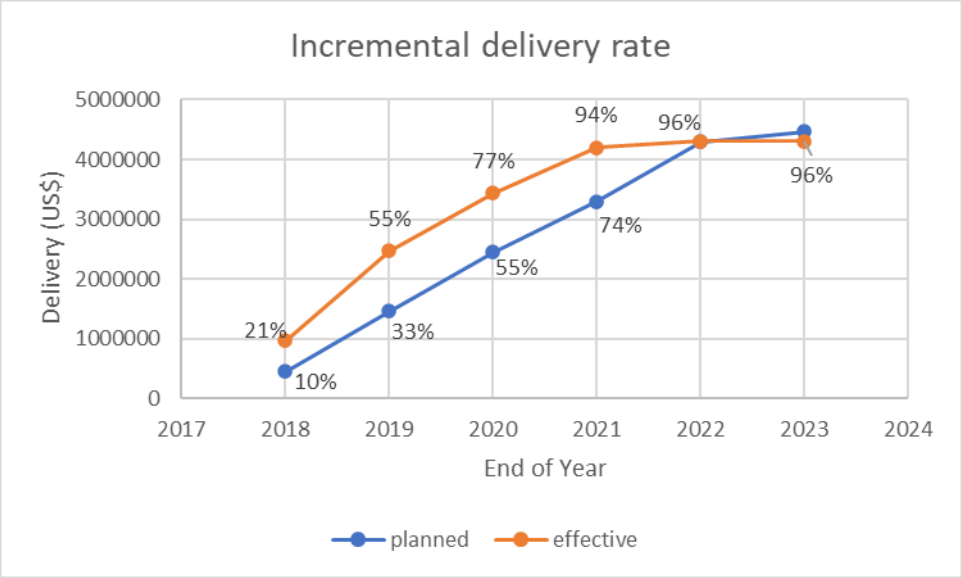

Figure 2: Cumulative planned (PRODOC) and actual delivery rate

The analysis of Table 10 shows a clear trend in component's implementation: results for component 3 (IGAs and diversification) would be achieved once results 2 (infrastructures) were at an advanced stage. This may be valid when IGAs are directly related component 2 results (increased agricultural production) but there could have been flexibility when supporting existing SMEs and microenterprises (especially in areas benefitting from PANA1 or PCM-Bonou) without waiting for component 2 to be completed as farmers were already producing prior to the project (e.g. rainfed crop production).

[18] Q3+Q4 2022, 6 months + 2 months in 2023 = 8 months

In US$m	2018	2019	2020	2021	2022	2023	Total
Total planned (PRODOC)	0.445	1.014	0.989	0.847	0.997	0.192	4.464
Total actual[19]	0.958	1.511	0.969	0.761	0.105	--------	4.107
Component 1 (actual)	0.294	0.75	0.134	0.62	0	--------	0.564
Component 2 (actual)	0.442	1.296	0.611	-0.39	0	--------	2.310
Component 3 (actual)	0.073	0.038	0.058	0.902	0.101	--------	1.170
PMU (& UNV)	0.150	0.103	0.166	-0.163[20]	0.04	--------	0.260

Table 10: Planned vs actual project expenditures per result

The project was audited four times without any particular issue.

3.2.5 Monitoring and evaluation: design at entry and implementation

The Project's Monitoring and Evaluation system included the inception workshop report, standard reports and evaluations, and oversight by the Project Board.

As per PRODOC, project M&E was carried out using the following tools with the M&E plan in the background:

- Inception workshop and initial AWP
- Quarterly progress reports
- Periodic Monitoring through site visits: UNDP / MDC or CePED conducting monitoring visits[21]
- One audit per year (2018, 2019, 2020, 2021) as per UNDP Financial Regulations and Rules
- Annual PIRs
- Independent mid-term and final project evaluations
- Learning and knowledge sharing
- An M&E Specialist was contracted to follow-up results progress.

The PMSD is peculiar in relation to M&E as a very detailed M&E plan operationalisation document was drafted soon after project start. It is very comprehensive with detailed information on follow-up of AWP, finance, indicators, risks… but also detailed explanations how to measure quantitatively and/or qualitatively all project indicators.

This was probably key in understanding indicators' limits and adjusting indicator definitions and target levels in periodic PIRs (see comments above under 3.1.1. on log frame analysis)

This kind of document should become a standard/showcase in M&E plan operationalisation at project level.

Monitoring & Evaluation (M&E)	Rating
M&E design at entry	HS

[19] Up to Q2 2022

[20] Negative amounts merely show reimbursements to GEF account from other sources (e.g. UNDP TRAC)

[21] Most beneficiaries emphasized the need for closer monitoring to correct activities and to ensure higher adoption though

M&E at implementation	HS
Overall quality of M&E	HS

Table 11: Monitoring & Evaluation Ratings Scale

3.2.6 UNDP implementation/oversight and Implementing Partner implementation/execution coordination and operational issues

Implementing Partner execution:

The project was supervised by the Ministry of Development and Government Action Coordination (MDC) with the Partnership and Expertise Centre for Sustainable Development (CePED) as the executing entity.

The Project Management Unit was established on a contractual basis within CePED.

The Coordinator was soon recruited after project signature as with the M&E expert, both of which were working in CePED. This avoided long recruitment processes and facilitated PMSD early operationalisation. The remaining of the PMU staff (Adaptation Expert, Admin-Fin expert) was contracted later as well as the four UNVs (M&E assistant, Adaptation Assistant, Admin-Fin Assistant and Secretary).

PMU was characterised by a number of staff changes: the M&E expert became CePED Director in 2020 and the UNV assistant replaced him. The same with the Adaptation and Admin-Fin experts, replaced by the UNVs. This means that there was staff continuity all along the project timeframe.

Regular meetings were held internally to ensure a smooth project operationalisation.

At local level, focal points were designated at municipal level and they soon became coordination points when linking up with municipalities (selecting staff for training, sending representatives to project sites…) on the many aspects linked to land allocation, municipality oversight and negotiations with communities. They should become key for ensuring municipality follow-up after project's completion.

At output level, the approach adopted was a sequential one with the prioritisation of component 2 at project start over component 3 that would be engaged later during implementation. This issue is that implementing such a large chunk of the project would inevitably lead to delays exacerbated by COVID ; hence insufficient attention was put on component 3 that was viewed as a sequence to component 2 ; that was the case because PMU was primarily focussing on IGAs that would result from component 1 ; indeed, by project's end, some studies were made to assess the feasibility of multipurpose infrastructures for agricultural production value addition and contacts made with the micro-finance sector.

These came too late to be impactful in any way but could (and should) indeed serve as a basis for potential project follow-up.

UNDP implementation/oversight

The added value of the implementing agency (UNDP) is its ability to provide regular support to the project team, facilitating PRODOC changes as required or solve problematic issues.

Interviews have shown this support to be quite adequate with UNDP participating in all regular project meetings and common field visits.

While not envisioned initially in the PRODOC, it appeared that UNDP provided extensive financial support (around 0.4M$) through TRAC funds on various matters such as UNVs, extra-salary expenses/advantages for PMU staff and a special fund to mitigate COVID19 impacts on beneficiaries. The earlier issue might imply that there may have been some important underestimation of UNV and PMU staff costs in the PRODOC.

As for oversight, there was a close collaboration between UNDP and the executing entity with UNDP facilitating CePED requests for support when needed (e.g. tendering and contracting).

UNDP Implementation/Oversight & Implementing Partner Execution	Rating
Quality of UNDP Implementation/Oversight	HS
Quality of Implementing Partner Execution	S
Overall quality of Implementation/Oversight and Execution	HS

Table 12: Implementation/Oversight and Execution Ratings Scale

3.2.7 Risk Management, including Social and Environmental Standards

Low and medium risks were identified in both in the PRODOC and the SESP assessment. As per UNDP procedures, risks were updated on a regular basis in ATLAS and included in PIRs.

Furthermore, SESP was also updated in 2021 with a better understanding of key potential issues of the project.

The review included the removal of some inflated risks:

(i) Disturbance of land, crops and human environment related to the development, construction and operation of stormwater retention infrastructures

(ii) Perturbation of lands, crops, human environment and/or hydrology because of the elaboration, construction and work operation of simple irrigation structures

The disturbance of lands including hydrology proved to be anecdotic because of the small-scale nature of these irrigation schemes.

(iii) Various risks related to the attractiveness of new productive lowlands bringing a more important volume of users to the site

This may not be so for agriculture but the addition of livestock throughs may not be so harmless as some municipalities are located nearby or right in cross border transhumance corridors, a situation that implies large herds passing. Furthermore, the COVID19 pandemic has somewhat forced herders to settle more or less permanently with consequences on grazing patterns and access to water – now much facilitated because of PMSD -.

Several risks were upgraded including:

(iv) Risk of drowning : moderate

It appeared that large water reservoirs attract children and there may be a serious risk of drowning, especially on embankments

(v) Risk of waterborne diseases (e.g. malaria or schistosomiasis) : substantial

These water reservoirs may prolong disease cycles well beyond their natural/timely occurrence, hence an increased risk with irrigation scheme users and children

Some risks were reformulated or added :

(vi) Risk of reproducing gender-based discrimination regarding the participation of women in the conception, implementation and access to the opportunities and benefits replaced by Risks of violence based on gender

This may be an added risk as while PMSD addressed gender equitably, it does benefit the most proactive with potentially substantial income increases ; hence household members revenue imbalances may lead to domestic violence

(vii) Insufficiencies in the complaint mechanism

PMSD has created a lot of expectations, often resulting in additional requests not necessarily in line with the project's objective. Furthermore, the funding levels never allow blanket support of all community members (which is why there are waiting lists for access to the irrigation schemes) and there may be people prone to accessing project results through the back door frustrating others or simply not getting satisfactory answers from the current complaint system. This is an issue directly resulting from the project's success

(viii) Risk of pollution

This risk was formulated for dangers coming from construction works; the TE team estimates that this is anecdotal but the pollution posed by livestock should be of serious concern as, despite water throughs, animal may still be roaming nearby the water reservoirs, potentially contaminating the sites.

The other identified risks did not require updating and are not mentioned here.

3.3 Project results

3.3.1 Progress towards objective and expected outcomes

A brief assessment with comments of the project overall results (as per PIR), is presented in the following paragraphs.

Project Objective: support resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change
Progress at project's end: initial assessments were made close to the MTR. Two years after, most sites (but not all) have had the opportunity to grow vegetable and commercialise it ; all project beneficiaries were exposed to IGA opportunities. The final assessments will be conducted in early 2023.

In the meantime, interviews showed that beneficiaries confirm a 'substantial' increase in revenue (hence not quantified) through direct sales (without much agricultural value addition like transformation) and despite initial setback due to COVID (production wasting on some sites). The beneficiaries had also access to improved seeds for rainfed agriculture, which may also impact revenue (at least early on as seeds were donated).
It appears as well that recent spikes in coco oil prices for soap production have reduced substantially the profitability of this kind of activity – at least when conducted on a small-scale basis, individually -.
So, most revenue increase would originate from the irrigation schemes et improved rainfed agriculture.
There is no linkage between revenue increase and the institutional support provided. Only when the 4th generation of PDCs will be designed, then beneficiaries might potentially benefit from municipal support on CCA.
As for vulnerability reduction, the infrastructures' set-ups adapted to local conditions, with renewable energy production and local maintenance staff trained, with local management committee, responding to livestock herders concerns, point towards a strong system that can absorb local shocks. Hence it is likely that local stakeholders will benefit from this kind of buffer against climate variations. It remains to be seen whether farmers will be able to solve incoming issues on a longer term basis (e.g. pest control through building up a strong relationship with ATDA, land allocation issues and membership renewals/changes through a fair irrigation scheme governance system, peaceful conflict resolution between farmers and herders through access to water…
As for indicators and targets at objective level, it is not possible to assess by TE stage:

Full name of the indicator	End of project target	Level of progress by end of the project
Vulnerability assessments show decrease in vulnerability in all 9 villages as per the methodology used in the preparation phase vulnerability assessment	Average vulnerability is reduced by 30% in all PANA-1 villages and 50% in non-PANA-1 villages	Unable to assess as the vulnerability assessments will be conducted in 2023
Target population's average annual income level	50% increase	Unable to assess as the vulnerability assessments will be conducted in 2023

Table 13: Achievement of targets against indicators at objective level

3.3.1.1 Outcome 1: Climate change and gender are included in development plans and budgets at national and sub- national levels

Progress at project's end: achieved in all 5 municipalities. They participated in training sessions on mainstreaming CCA in annual plans. The main issue has been the difficulty to amend PDC budgets established several years ago to make activities more climate-proof and limited access to additional funding specific for CCA in Benin. With the current PDCs expiring in 2022, efforts were renewed to support municipalities in integrating CCA at design stage of the 4th generation PDC (2023-2028), yet to be formulated. Hence the need to rethink the funding mechanisms for CCA benefitting decentralised entities. Overall, technical staff (NGOs, ATDA) was trained in CCA and there are signs (as per interviews) that they are applying knowledge (e.g. trough supervisory visits at PMSD sites).

Output 1.1*: Five targeted departments and municipalities and all relevant Ministries have integrated gender responsive climate change adaptation in their planning and budgeting work*

Interviews have shown not only great interest in mainstreaming CCA but also actual planning through PAI (for 5 municipalities) that mainstreamed CCA considerations.

As mentioned above, these are necessary but not sufficient conditions. Interviews of staff from several municipalities showed that CCA activities as per climate-proof PAI were not implemented because of lack of funding. This issue is to be linked with FADEC and the existing municipality funding mechanisms that were not reformed to accommodate CCA. This may however change in the near future with the reorganisation of FaDeC into a new fund 'FDC'.

Given that 2022 was the last implementation year for the 3rd generation of PDC, it is anticipated that municipalities would mainstream CCA into the next generation of PDC; this is why the project supported once again municipalities in 2022 with refresher courses.

The project supported as well several ministries[22] through seminars by updating the criteria for inclusion of projects in the Public Investment Programme (PIP). This was indirectly achieved through collaboration with the General Directorate for Public Investments Programming and Monitoring (DGPSIP) to mainstream climate change into these inclusion criteria.

Output 1.2: *Agricultural extension agents and local NGOs active in the 5 targeted municipalities are trained on resilience to climate change*

This result was fully achieved. The key question is whether trainees have the time, capacity and means to use their newly-acquired knowledge. While the knowledge is quite diffuse as it has to be integrated into regular extension messages, there is no reason to doubt that staff is progressively adapting their extension messages taking into account CCA. This is most obvious when discussing with farmers that could explain why they adopt (drought resistant crops) or not (compost preparation) climate-resilient practices.

As for indicators and targets under outcome 1, the results are the following:

Full name of the indicator	End of project target	Level of progress by end of the project
Number of operating financed water infrastructures per municipality, including management	All targeted Municipalities that have reviewed their PDC and/ or PAI during this period	All five (05) beneficiary municipalities integrated climate change and gender into their Annual Investment Plans in 2019, 2020 and 2021 and provisions are being made to ensure CCA mainstreaming into 4th generation of Municipal development plans (PDC)
Number of people who master and use climate resilient techniques promoted by the project (e.g, drip irrigation, short cycle seeds ...)	30 (as per Numerical targets established during the inception phase of the project, based on the relevant assessments)	In 2018 a training was organized for 30 agents, including 8 women, from NGOs and ATDA on the following: climate adaptation technologies and practices in the agricultural sector, tools for integrating CCA into supporting communities for the development of local value chains, communication techniques for the assistance and sustainable development of rural communities ; a monitoring system was established to assess use of acquired knowledge by these agents

[22] Ministry of Development and Coordination of Government Action (MDC), Ministry of Agriculture, Livestock and Fisheries (MAEP), National Centre for Remote Sensing and Ecological Monitoring (CENATEL), Ministry of Water and Mines (MEM), Ministry of Living Environment and Sustainable Development (MCVDD), Ministry of Higher Education and Scientific Research (MESRS), Ministry of Infrastructure and Transport (MIT), Ministry of Economy and Finance (MEF), Ministry of Foreign Affairs and Cooperation (MAEC), Ministry of Social Affairs and Microfinance (MASMF), Ministry of Interior and Public Security (MISP)

Table 14: Achievement of targets against indicators for outcome 1

3.3.1.2 Outcome 2: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns

Progress by project's end: the results were exceeded with more infrastructures than planned because of the need to address herders with the construction of drinking throughs nearby water reservoirs.

Infrastructures were built and a high number of farmers trained extensively (85% by TE stage). Some had no experience whatsoever in vegetable production while others had some from cultivating along natural ponds. So, retraining was planned in 2022. The human factor was well taken into account with training sessions on how to manage through local committees, these small irrigation schemes and how to optimise livestock access to water throughs.

Output 2.1: *At least 9 small scale climate resilient water harvesting infrastructures are designed and implemented in the 9 targeted villages.*

Eleven structures including 2 drinking throughs were built.

Works were affected by COVID19 (e.g. limited access to construction material in Togo, remote monitoring due to the lockdown) and initial plans were reviewed and amended on some sites by resource-persons (e.g. DGE and INRAB), hence their importance in providing advice. These included raising the climate-proof standards of these works (e.g. increasing heights, improving embankment designs with different materials, switching to renewable energies…).

The provisional reception of works was completed for 10 infrastructures.

To date, 11 local committees were established. While institutionally new and therefore fragile, interviews showed a reasonable level of functionality (everyone knows and understand the objective and functions of these committees), they are yet to be put to the test as they were not yet handled over the infrastructures. These committees are still informal and there are risks of collapse once the project is closed. This is why PMU has been advocating time and efforts to turn these committees into formal GIE that can access microfinance and Government-sponsored support wherever available.

Intense training sessions were conducted in all sites to support communities in adopting resilient practices such as irrigation techniques or improved short-cycle seeds in targeted villages; interviews showed, overall, positive results with the adoption (and sometimes not) of climate resilient practices.

The site of Dakpa in the Bohicon municipality is different from the other sites: PMSD together with this urban municipality has set-up a water retention structure to benefit youth, as a kind of business incubator to prepare them to vegetable production after graduating from nearby CPEA. They are trained and supposedly required to leave after 4-5 years to make space for other youth.

Output 2.2: *Risks of floods and riverbanks erosion are reduced through the stabilization of slopes of critical riverbanks using at least 300ha of bamboo plantations.*

Previous generations of projects have shown that small water infrastructures are at risk of extreme events (such as

under PANA-1 project) that can result in catastrophic collapse and/or slow siltation, resulting in the dereliction of these irrigation schemes. As bamboo show promising potential both as a river embankment stabilisation plant, but also on an economic level, this activity was designed in PMSD.

Nurseries were established and ATDA/forestry personnel trained in bamboo cultivation. Despite the potential of bamboo as a multi-purpose crop, it generated very little interest, starting with the actual use on PMSD sites. Only degraded riverbanks could be protected but there was little interest from land owners. Bamboo was not recommended to be planted on water reservoirs as a stabilisation plant but instead, more traditional – well tested – plants were used such as Vetiver spp. and Gmelina arborea.

All in all, this activity was not successful. Interviews of farmers and ATDA staff showed that this crop was too new to be widely adopted so swiftly and that much more coaching would have been necessary to ensure some sort of beneficiary backing. Over 300 ha were planned but this was not useful as an indicator as only several hundred metres of river banks were planted without much success. An entirely different approach should be adopted to introduce bamboo as a multipurpose crop (see recommendations).

As for indicators and targets under outcome 2, the results are the following:

Full name of the indicator	End of project target	Level of progress by end of the project
Number of operating financed water infrastructures per municipality, including management	At least 90% of the planned infrastructure per municipality is operational, as well as the capacities to operate them in a sustainable way and including women	As of June 30, 2022, eleven (11) water infrastructures had been completed in the localities of Kpakpalaré and Kadolasi in Ouaké, Damè and Aouiankanmè in Savalou, Kotan and Danmè-Kpossou in Avrankou, Agbodji and Sèhomi in Bopa and Dakpa in Bohicon, including two drinking trough infrastructures installed in Kpakpalaré (Ouaké) and Lahotan (Savalou) >100% achieved
Number of people who master and use climate resilient techniques promoted by the project (e.g, drip irrigation, short cycle seeds ...)	6,163 = 100% of target population mastering and using climate resilient techniques promoted by the project	By June 30, 2022, various supports from PMSD had made it possible to reach 5.324 people who were trained and supported in the adoption of resilient agricultural practices

Table 15: Achievement of targets against indicators for outcome 2

3.3.1.1 Outcome 3: Improve the targeted communities' adaptive capacities by supporting the diversification of their income generating activities

Progress by project's end: the results vary amongst outputs. Prior to COVID19, the approach was to assess needs and support alternative IGAs such as soap fabrication as per requested by (mostly) women beneficiaries and aquaculture on site previously supported by PANA-1. With COVID came hydroalcoholic gel as an expressed need. While aquaculture appears to provide good revenue levels, it may not be so with soap production, after coco oil price hikes.

Access to micro-finance and support of microenterprises and SMEs was not relevant at first because these entities did not exist on project sites and farmers had to be first exposed to entrepreneurship potential to gain interest in SME and microenterprise creation with a view to access microfinance. So PMU limited itself with support to farmers to develop entrepreneurial basic skills as a strategy to stimulate interested beneficiaries to go beyond local

agricultural produce sale.

Output 2.1: *Targeted population's dependency and vulnerability to climate change effects is reduced through the introduction of alternative livelihoods for approximately 4000 persons.*

This output focused on the introduction of alternative livelihoods for about 4,000 people, including 717 men. In the field, vegetable gardening is an alternative livelihood for men, but it is a minority for men. In visited sites, vegetable gardening is practiced mostly by women. Similarly, the men have not been trained in soap and hydroalcoholic gel production. It is worth mentioning that it is only at the Sèhomi site in Bopa municipality that men are involved in fish farming as an alternative source of income. The progress reports did not present the indicators or targets for this activity.

Output 2.2: *All women of target population (3,281 women) are trained on alternative livelihoods to agriculture to better cope with climate change impacts.*

For this output, the project wanted to focus on alternative measures for women through income-generating activities. In all visited project sites, women were trained in soap and hydroalcoholic gel preparation. For them, this has been an opportunity especially since the project did not plan to set up multifunctional platforms.

Output 2.3: *The capacities of 300 rural entrepreneurs and 50 SMEs (aiming at 50% women) to develop business plans in the field of sustainable craft and small scale manufacture are strengthened in order to stimulate employment and revenue increase.*

This output was too ambitious as the project was starting from scratch, from the production side, and there was little capability[23] to move forward with farmers within the timeframe of the project to formalised entrepreneurship, even on a small scale basis.

The initial situation was farmers used to sell their mostly rain-fed crop production on the road side or to intermediaries. PMSD introduced many elements of agricultural improvement from productivity (higher yields), crop diversification (vegetable production), permanent farming (irrigated agriculture) to governance of farmers' groups (irrigation scheme committees and planting bed mini-groups). To support better farmers through the irrigation schemes, it appeared that it was fundamental to enhance entrepreneurial skills and human potential on project sites with (i) the introduction of multi-purpose agricultural platforms and (ii) the need to train farmers in basic entrepreneurial skills (e.g. establish a business plan, keep a basic book of account) as a strategy to add value to agricultural product at local level. A study was commissioned for item (i) but no more could be done as this was not specifically budgeted at project formulation stage and a number of training sessions were conducted with all farmers on basic entrepreneurial skills. Item (ii) was quite successful with interviews showing a range of (basic) commercialisation options such as direct sale, sales at local and regional markets, sales to (large and small) intermediaries, production grouping and larger scale sales... Still, these options do not fundamentally change the terms of trade with little or no local value addition. This appears to be out of reach within PMSD but it could be part of an hypothetical follow-up phase.

As for indicators and targets under outcome 3, the results are the following:

[23] There were few if any actual SME or micro-enterprises on project sites in the first place

Full name of the indicator	End of project target	Level of progress by end of the project
Number of women engaged in subsistence agriculture trained/strengthened on alternative livelihoods to agriculture	3281 women (=100% of women in target population) engaged in subsistence agriculture) trained / strengthened on alternative livelihoods to agriculture	2336 people, including 1616 women, were trained in alternative income-generating activities (IGAs) through a ToT approach (training of 826 trainers included from 7 villages). Trainers training sessions were due to be carried out later in 2022 for 2 remaining villages of Ouaké municipality 71% of end of project target is achieved
Number of farmers with access to finance as a result of training and more diversified activities	At least 75% of people trained through the project who requested a loan got it	Beneficiaries are trained on the strategies and steps to look for and get funding and contacts are established with financing organizations: FNDA, FNM, etc. 1,256 people (out of 3.000 planned) received these introductory courses on access to microfinance. No-one has asked (yet) for any loan The achievement seems to represent 41% against a target of 75%

Table 16: Achievement of targets against indicators for outcome 3

Overall Project Outcome RATING: *Satisfactory (S)*

(The results vary widely under Outcome 3, but overall, nearly all results were achieved)

3.3.2 Relevance

Benin ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 30 June 1994, and thus committed itself to bearing its share of responsibility in the fight against climate change and for the development of adaptation strategies for its population. Following this commitment, the first strategies were put in place in collaboration with the Global Environment Facility (GEF), including the launch of the National Adaptation Programme of Action (NAPA) in 2008. The aim was to (i) assess the vulnerability of lifestyles, (ii) evaluate the socio-economic situation of stakeholders, and (iii) determine the priority adaptation needs for the country, with regard to its resources and the respective capacities of the various social groups concerned.

Relevance to national environment and development priorities: the project is in line with the Strategic Plan for the Development of the Agricultural Sector (PSDSA 2025) and the National Plan for Agricultural Investments and Food and Nutritional Security (PNIASAN 2017 – 2021). With regards to the National Development Plan (NDP) 2018-2025, it is based on strategic objectives broken down into three fundamental pillars. These are: i) diversification of agricultural production with the support for the development of services (rural infrastructure, logistics, innovations, biotechnologies, etc.), (ii) agro-industrial transformation and increased development of services (special economic zones, business environment, tourism, logistics transport, digital, innovations) and iii) knowledge export through innovations and biotechnologies (NDP

2018-2025).

Relevance to UNDP priorities and strategic goals: the project is consistent with the United Nations Development Assistance Framework (UNDAF) 2014-2018 in its outcome 6 which states that "by 2018, institutions and people in intervention municipalities are able to better manage their environment, natural and energy resources, climate

change impacts and natural disasters. It then aligns with UNSDCF outcome 1 - 2019-2023 "By 2023, Benin's populations, especially the most vulnerable, are more resilient and have a better quality of life through access to decent employment, food and nutrition security, clean energy, and sustainable management of natural resources, adverse effects of climate change, crises and disasters. It also aligns with strategic result 5 of the UNDP Gender Strategy 2014-2017 "Countries are able to reduce the risk of conflict and natural disasters, including climate change", the CPD 2019-2023 (Output 1.2: Marginalized groups, especially youth and underemployed women, have increased technical capacity to access climate-resilient agricultural technologies to improve their livelihoods and productivity).

Relevance to GEF strategic focal area: the project was also aligned with the GEF-5 strategy on Climate Change[24]: it was covering at least two objectives including:

(i) Promoting conservation and enhancement of carbon stocks through sustainable management of Land use, Land-use change with good management practices in landscapes
(ii) Supporting enabling activities and capacity building resulting in human and institutional capacity of Benin strengthened.

That said, this project covered other sectors (see SDG analysis under Mainstreaming pg.56).

3.3.3 Effectiveness and efficiency

Effectiveness (contribution of the actual outcomes to the project objective):

The project objective was to Support resilient agriculture and livelihoods and to mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change. Three main outcomes (components) were formulated:

(i) Outcome 1: Climate change and gender are included in development plans and budgets at national and sub- national levels
(ii) Outcome 2: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns
(iii) Outcome 3: improve the targeted communities' adaptive capacities by supporting the diversification of their income generating activities

Outcome 1 results: Climate change and gender are included in development plans and budgets at national and sub-national levels.

The activities focussing on *mainstreaming gender responsive CCA in planning and budgeting* – mainly through capacity building - are very effective in *potentially* reducing CC vulnerability at municipal level; municipalities were toolless whenever they were reminded of CC when extreme whether events were striking the municipality. Through PMSD, they are more aware of CC but also tooled in understanding how to plan and budget CCA into municipality plans.

[24] Source : https://www.thegef.org/sites/default/files/documents/GEF-5_FOCAL_AREA_STRATEGIES.pdf pg 26

Whether there is awareness or willingness to mainstream CCA, the ultimate objective is to actually reduce vulnerability through better planning and plans' implementation. The former has been covered by PMSD but the key issue remains the actual implementation of these plans: municipalities have few tools to capture additional funding (hence resorting to find support in municipality apex organisations or the Government has not put in place effective funding mechanisms to ensure CCA funding in decentralised entities (FADEX's rehauling into FDC).

The *training sessions of technical staff (NGO or ATDA)* have been very effective - as per interviews – in ensuring a good understanding of key CCA issues and the need to follow-up project's beneficiaries. *De facto*, advice provided by technical staff directly contributes to increasing beneficiary climate resilience.

The Government cofinancing has been also significant in ensuring that a *follow-up mechanism* (piloted by GRED) is put in place as a strategy to ensure future scaling-up and taking stock of lessons learned and best practices through a *project repository*. This ex-post model for supporting stakeholders in strengthening the resilience of populations to climate change will ensure knowledge ownership and empowerment with a clear view on the design of future interventions, hence contributing to reducing population's vulnerability as well.

Outcome 2 results: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns.

The *construction of the infrastructures* is directly contributing to the overall objective: the water reservoirs and borings, as well as drinking throughs are up and running (in 8 locations so far) resulting in farmers taking advantage the irrigation schemes. The additional revenue is welcome and contributing to reducing communities vulnerability (and poverty).

The activities related to bamboo did not contribute in any meaningful way to the objective. It attracted little support from both ATDA staff, farmers, nurseries and the few planted so far were not well maintained in any case.

Interviews showed that farmers are not mass adopting resilient practices but they pick the most appropriate as per their own experience and preferences (time, effort, monetary input…) ; but the general trend seems to be a high ratio of production in relation to effort or financial input); so, improved seeds, drought resistant seeds and short cycle seeds, water conservation practices seem to be the most widely adopted practices. On the other hand, compost preparation is impractical for it requires much labour and there is a lack of readily available input (animal organic matter).

The project site in Dakpa is also much contributing to increasing resilience of youth farmers by preparing them on vegetable production although it is more of a pilot initiative (it is rather limited in size) than a full scale agricultural scheme, preparing them on commercial vegetable production using CCA practices.

The contribution of bamboo plantations as a key output under the project to stabilise riverbanks in the continuity of water reservoirs has been much overstated with little if any effect on beneficiaries that were mostly uninterested despite its potential as a multipurpose crop. It appears that bamboo should be considered more as a niche crop for now (at least in project sites), requiring extensive testing, piloting, demonstration efforts to show off its potential prior to larger-scale dissemination.

Outcome 3 results: Improve the targeted communities' adaptive capacities by supporting the diversification of their

income generating activities

The contribution of this outcome is rather limited except for some specific cases.

The logic behind this outcome was that IGAs would reduce climate vulnerability – possibly through increasing revenue not directly dependent on climate conditions -. This is surely *the case for aquaculture* initiated by PANA-1 with issues like theft secured during PMSD. It may *not be the case for soap production* with recent raw materials soaring prices, rendering it less profitable as a house-hold IGA.

Extensive support was provided to prepare beneficiaries to *access microfinance*; this has been the case when targeting farmers on entrepreneurial skills. These are actually preconditions to sort out beneficiaries with most entrepreneurial skills that could relatively swiftly access microfinance services. Interviews showed there are still many steps before actual access and this particular project result could be seen as overambitious. In any case, these activities do contribute to preparing final beneficiaries in becoming less climate vulnerable.

It is interesting to see that PMSD has a long-term approach with the objective as it is preparing the ground for future support to enhance results, possibly after project closure with assessments on GIE and multipurpose platforms feasibility.

Efficiency (project costs):

The five-year-long project spent in total around 4.1M$[25] (over 95%[26] of the budget 8 months before closure).

As mentioned before, project operationalisation has been swift with little delay before launching tenders for construction works, which proved critical with the COVID slowdown by 2020.

Furthermore PMU has not embarked on a rigid implementation approach as per PRODOC but a highly flexible implementation method based on adaptation as per local physical, social and economic conditions.

The project reinforced/restructured let-down activities from PANA-1 such as aquaculture. With COVID it was quick to introduce hydroalcoholic gel preparation as an IGA. As for infrastructures, significant financial resources were saved by taking advantage of local geological conditions like the presence of confined groundwater that enabled artesian wells/borings without much investment. This enabled more investments in more complicated geological set-ups with a higher rate of brings' failure, the switch to renewable energy for pumping and the extra water throughs that were not (initially) prioritised but eventually necessary to reduce farmers-herders tensions.

Despite the approach based on the sequential nature of component 2 and 3 – in particular with access to micro-finance – that limited the effectiveness of some component 3 outputs, PMU has been very efficient in optimising project financial resources.

Looking at the financial numbers, except for year 1, there has been, an excellent delivery during the bulk of works for infrastructures despite COVID19 (2020 and 2021) and an unexplained decrease in delivery in 2021, possibly the consequence of a lesser controlled budget.

[25] Initial budget is 4.46M$
[26] By Q2 2022

Year	AWP (US$m)	Actual expenditure (US$m)	Spent budget in % (As per AWP)
2018	1.500	1.057	70
2019	1.515	1.530	101
2020	1.119	1.166	104
2021	1.072	0.838	78
2022	201	0.123	61
2023	-	-	-

Table 17: Spent budget ratios

All in all, it appears that delivery has been well controlled without the necessity of a no-cost extensions.

Assessment of Outcomes	Rating
Relevance	HS
Effectiveness	S
Efficiency	HS
Overall Project Outcome Rating	S

Table 18: Outcome Rating Scales - Relevance, Effectiveness, Efficiency

3.3.4 Country ownership

Given the relevance of the project to national policies, country ownership should be strong. Interviews showed this to be the case both at local (ATDA, municipalities) and central levels (MDC, MAEP).

At local level, there has been extensive support to the project by municipalities with intense participation when needed on land allocation, oversight and the designation of local municipal focal points that could follow-up PMSD delivery, report it to mayors or support project's request whenever needed/possible.

ATDA have been fully engaged as well, as beneficiaries from training sessions on CCA but also with direct technical support and follow-up of final beneficiaries, all the more so during the "*cordon sanitaire*" (lockdown). They understand they are supposed to be the mainstay of project results, once the project closes. Interviews have shown that they are in the process of mainstreaming project results into their (future) routine follow-up activities.

At central level, there were three key players: MAEP, MDC and CePED. CePED has been the executing entity with PMU embedded within the institution, so it provided follow-up support as well as HR when necessary.

MDC through CePED been heavily involved in project implementation with cofinancing that is not only limiting itself to HR availability, premises rental but also actual activities that do contribute directly to project results. Examples include under :

- Component 1 : formulating the ex-post model for supporting actors in strengthening the resilience of populations to climate change as an exit strategy, dialoguing with local stakeholders on how best ensure project results sustainability, ensuring continuous follow-up
- Component 2: financing extra works (either add-ons or finetuning) on infrastructures
- Component 3 : assessing the feasibility of multipurpose agrobusiness platforms

Under MAEP, support has been indirect through ATDA at local level but also from INRAB that provided technical advice as a resource-organisation.

This is a similar situation with MEM and its DGE that provided expertise in relation to water infrastructures.

The project has also generated a lot of interest from neighbouring villages and municipalities with individuals acquiring information through visits and participation in meetings on project results and ways on how to best replicate them (on a small-scale basis).

3.3.5 Gender equality and women's empowerment

Gender considerations were taken into account in the PRODOC formulation process: e.g. under component 1, CCA mainstreaming into local planning processes, under component 2 and 3, monitoring is to be gender disaggregated to assess whether women (and vulnerable populations in general) were included as beneficiaries as per required/recommended, in component 3, making sure that IGA do benefit women.

At operational level, separate gender analysis were conducted in all 5 municipalities to assess how best to mainstream gender considerations together with CCA into local development planning and processes. This resulted in component 1 addressing key gender issues during training sessions.

As for the other two components, there was no specific gender strategy but activities were adapted to take into consideration women specificities: first, PMU has addressed gender concerns at operational level by supporting the establishment of women groups in addition to mixed beneficiary groups; this was most obvious (i) in mini-groups covering planting beds within irrigation schemes and (ii) for creating IGA with women naturally converging towards each other. One can also observe that agricultural produce consolidation is often gender-based with more proactive women in charge of commercialisation.

Overall, the project generated a lot of interest from women (clearly more in tune with vegetable production than men) with over 70% of trainees attending being women. In addition, women were clearly more engaged in several non-agricultural IGAs such as soap and hydroalcoholic gel production during COVID19 (70% participation as well). This has had an impact on women revenue (30% income increase reported) and probably household revenue balance between spouses (which is why gender violence was added as a new risk following up the SESP upgrade).

Finally, project infrastructures local management committees account for women at management level (including as president) although most have responsibilities either as accountant or deputies.

3.3.6 Cross-cutting issues

Poverty reduction & sustainable livelihoods ("Leave No-one Behind") were key elements of the project targeting the most vulnerable parts of the population that are reliant on erratic rainfall patterns for their livelihoods. The sites' selection was also based on areas that were most vulnerable to climate change with a view on mitigating potential disasters from erratic rainfall patterns.

There was no particular emphasis on human rights or disability but it is clear that project implementation was based on actual populations' needs including in the actual prioritisation of activities (what, where, how), hence highly participatory as discussed during the interviews.

Finally, the beneficiary selection approach in setting-up irrigation groups was based on actual volunteering but also internal participation/contribution criteria. That resulted in a high interest and a rush to participate. It also created a beneficiary selective mechanism within irrigation groups that resulted in retaining only the most proactive farmers while others less/not active leaving the groups after several cropping seasons, and allowing additional interested beneficiaries to participate as well.

3.3.7 Catalytic role and replication effect

Project linkages with other interventions

There is little information available as to how PMU might have coordinated activities with other interventions. Both cofinancers (PCM-Bonou and Millennium Village projects) were in advanced stages of implementation, hence coordination may have been somewhat limited.

What is sure is that MDGAC has taken up lessons learned from PCM-Bonou's sustainability strategy to feed in to the discussion on how best to formulate this ex-post model for supporting actors in strengthening the resilience of populations to climate change.

Project linkages to SDG targets:

The PMSD project was aiming at strengthening the resilience of agriculture and livelihoods and integrate climate risk considerations into national and decentralised planning processes so that local communities are less vulnerable to climate change.

Despite a clear focus on climate change, *de facto*, the project is also addressing a whole range of other development goals. The project is linked clearly to several SDGs:

- SDG 1 "Zero Hunger" : the project is addressing a growing problem with ever more fluctuating agricultural production levels (at least at local level) due to rainfall changing patterns; by securing underground and runoff water (borings and water reservoirs respectively), the project is buffering populations against food insecurity with more stable production systems through irrigation
- SDG 8 "Productive Employment and Decent Work": despite the fact that these irrigation schemes are of limited size, they do generate agricultural surplus; this, in turn, creates locally a micro-economy for selling vegetable on local/neighbouring markets but also through aggregation serves a much larger market of vegetable production resulting in the creation of jobs within this sector. Furthermore, this production is

sent through intermediaries to larger cities and beyond national borders (Togo, Nigeria), hence contributing, albeit, still by a very small margin, to national economic growth

- SDG 12 “Responsible Consumption and Production”: interviews showed that actual vegetable production is boosting nutrition with beneficiaries indicating a higher level of vegetable consumption – especially for populations not involved in irrigation previously -.
- MDG 13 “Action on Climate Change”: this is self-explanatory… with the main thrust of the project focussed on populations’ vulnerability reduction and adaptation to evolving climatic conditions.

Replication effect

The potential for replication is very in this project.

First, at local level, it has generated a lot of interest from neighbouring villages, other municipalities or even prefectures. So it is likely that some pressure from decentralised entities will apply to line ministries to address similar climate vulnerability issues in other regions in the near future.

Second, at central level, MDC (through CePED) has empowered itself with the need to ensure project continuity through the formulation of a follow-up approach as a strategy to sustain project results.

Third, PMSD itself has been tasked with documenting lessons learned and best practices through a repository that in turn will feed in any attempt to systematise this kind of intervention in the future.

So, the Government is slowly but steadily designing a mechanism that will allow project results replication in the future.

3.3.8 GEF Additionality

GEF's global benefits for climate change under PMSD are (i) Climate change vulnerability reduction of populations most at risk and (ii) Improved water management for agricultural production.

Climate change adaptation is at the core of PMSD project that contributes to all three GEF strategic objectives[27] with two priorities being addressed: 1. Agriculture and food security, 2. Water resources management. Under 1., GEF’s support has contributed to scaling up and mainstream agricultural production and food systems that are in line with CCAs through the development of more resilient farming systems (small-scale irrigation) with an emphasis on women. Increasing risks of droughts and floods due to more intense and more variable rainfall are being addressed with climate resilient water resources management targeting agriculture (irrigation schemes) and livestock production (drinking throughs). The project is in line with community-based adaptation with PMSD focussing support on the most vulnerable communities within the most vulnerable municipalities.

[27] 1. reducing the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change; 2. To strengthen institutional and technical capacities for effective climate change adaptation and 3. . integrating climate change adaptation into relevant policies, plans and associated processes

As for component 3, alternative IGAs are not specifically pointed out in GEF's CCA strategy but project results from outcome 3 are to contribute overall to both GEF strategic priorities mentioned above.

Finally, an often overlooked contribution of GEF support is Gender Mainstreaming through empowering women to participate in adaptation. This was well covered by the project through gender analysis on blending gender considerations into CCA in decentralised development planning and processes.

3.3.9 Elements of Sustainability

Sustainability is the likelihood of continued benefits after the project ends.

Overall project sustainability RATING: *Moderately Likely (L)*

3.3.9.1 Social & cultural sustainability

Interviews with final beneficiaries – both livestock herders and farmers have shown a high level of interest in this project. Still, the construction of water reservoirs, in a context of rainfall variability, can create tensions with sedentary livestock breeders and transhumant pastoralists who inevitably will use these watering places as one additional stopover so as to reduce distances between camps and pastures. This is why PMU adapted its primary strategy in creating water throughs for livestock. While tensions have not completely disappeared (there remains always stray animals around water reservoirs), the approach was largely successful.

To ensure stability and overall adequate management of these infrastructures, management committees should be established primarily to ensure orderly use of infrastructures' benefits and organise maintenance and future repairs. Interviews have shown a wide acceptance on the necessity of these committees, a genuine willingness to own and empower themselves of these infrastructures (this was reminded several times to the TE team that beneficiaries would not have the political power interfere with the management of these infrastructures). Be that as it may, interviews also showed that while committee members were resolute on the need to manage these with the principle of due diligence. The planting of bamboo evidenced a range of issues starting with social acceptance : there has been very little demand from bamboo nurseries and is all comes down to a lack of awareness on the vantages of these crops as a climate-proof solution to erosion (not to mention the numerous other advantages of bamboo in other sectors).

PMSD had planned originally to support beneficiaries in accessing microfinance. Several available products require the need for the establishment of solidarity-based groups. Yet, this mindset has not yet transpired in beneficiaries. So, extensive follow-up should be necessary to accompany beneficiaries that want to expand their agricultural activities. But that will be well beyond the project's closure.

Theft has been a recurrent issue. This mostly affected aquaculture during PANA-1 and some mentioned it as well for irrigated crops under PMSD. The issue has been solved in Bopa with the contracting of local guards to secure fish ponds but the issue remains standing for the site in urban Bohicon. This is all evidencing a lack of social cohesion at village level.

3.3.9.2 Technical sustainability

At farm level, the technical risks remain high: despite extension training sessions and retraining, farmers have at best 1-2 years of experience. They do not have yet the experience to tackle rising issues; for example, interviews showed that in several sites, they were helpless with pest proliferation with both the project and ATDA providing technical support that looked insufficient (resorting to heavy use of pesticides or trying not too convincing biological control) ; in others, farmers were not entirely respecting crop rotation for short-term economic reasons. There is no doubt that ATDA and possibly INRAB will eventually come up with solutions and resolve any future issue but this shows the beneficiaries' vulnerability in a somewhat new subsector. As for the adoption of climate resilient agricultural practices, there are *a priori* few technical hurdles with material available and farmers with enough technical knowledge. The issue lies elsewhere with financial sustainability that is key for adoption.

As for water infrastructures and related equipment, several strategies have been put in place: a management committee is responsible for overseeing maintenance and repairs and local skilled workers were trained on basic maintenance and control of infrastructures (professionals for stonework repairs, PV professionals for visual inspection of PV panels and possibly basic parts maintenance and replacement). But to date, the maintenance of the infrastructure is the responsibility of the contractor who built the infrastructures. These have not yet been formally accepted. So, there are definitely risks that this system may fall apart if local committees cannot assert a strong control of infrastructures, once the official acceptance of works has been endorsed (which is why the project is pushing for the establishment of formalised GIE).

With regards to rainfed agriculture, many new practices were adopted and risks are definitely low on that side, as with aquaculture that was introduced back from the PANA-1 project. Technical risks are also very low for other new IGAs.

3.3.9.3 Institutional and organisational sustainability

Under component 1, institutional risks are very limited: municipalities have adopted the principles of CCA mainstreaming into their development planning processes. The issue is primarily financial.

As mentioned above, the recent nature of these irrigation schemes committees (1-2 years) as well as committees for water throughs is a genuine organisational risk for sustainability; while they have been trained and supervised by the project, which is why, followed up by the project, interviews showed some organisational level with members assimilating their functions and responsibilities. Still the chosen setup of irrigation schemes and management of infrastructures is at this stage very fragile and it is doubtful that these will reach some kind of level of autonomy any time soon, especially when the project is closed. At TE stage, none of the committees has had any experience of actual schemes' management. PMU has not yet signed any financial acceptance protocol for the infrastructures (meaning, any maintenance or repair or finetuning are still to be carried out by the selected contractor). Then by project's closure, there is no formalised follow-up structure available to accompany these committees. Organisational risks are therefore very high. This is a serious issue because of the investments that are at stake: one cannot assume that committees will be operational by project's end while they will have had a few months of actual management experience before project closure.

Under component 3, risks for IGA are very limited because most activities are conducted on an individual basis. The establishment of the groups, or even their formalisation, is not yet effective. There have been departures and arrivals within the groups. So they have not yet stabilised.

3.3.9.4 Economic and financial sustainability

When projects introduce new farming techniques, the adoption rate most often depends on the economic (both financial or in terms of efforts to deploy). This project is no different.

Under component 2, extensive efforts were made (and probably will still be made) to train farmers in irrigation using climate-proof agricultural techniques. Many techniques were readily adopted while some others were not and at some point, it might be worth understanding the logic behind adoption or not.

In terms of techniques adopted or not, one can observe the indifference of farmers to crop rotation. They prefer to cultivate the same crop on the same bed, given the demand in the local market. This is a serious source of parasitic attack on irrigated crops in the cotton basins.

The economic sustainability for aquaculture seem to be secure so far with good demand for life fish and the availability of fingerlings supply sources. This may not be so with soap production. With coco oil prices rising steadily recently, the activity on an individual basis is becoming less and less profitable. However, interviews have shown that this profitability is mostly dependent on the price of coco oil and these prices can vary widely, should a beneficiary have readily access to oil (e.g. price at farm gate) or not (regular buying on the local market). Overall, the trend is that this kind of activity should be expanded in size in order to produce larger volumes with a reduced fixed costs share in the final price.

3.3.9.5 Environmental risks to sustainability

There are definitely environmental risks associated with open water reservoirs and irrigation schemes:

- Mosquito proliferation and waterborne diseases: PMSD has set (or is currently setting) warning signs around water reservoirs
- Pollution of water reservoirs by livestock;: this issue has been addressed with water throughs and the adoption of an informal “code of conduct” by herders that will not drive their cattle to nearby reservoirs dedicated to agricultural production
- Pesticide overuse: this may become a critical issue in some sites through the contamination of crops and groundwater, should ATDA not provide swiftly solutions to pest proliferation that is becoming resistant in some sites with high intensity cotton production
- Chemical fertiliser overuse: it appears that this is inevitable so far with labour issues associated with compost preparation that is too constraining according to farmers, insufficient manure from farmers’ small livestock and the absence of a mechanism to obtain livestock herders’ manure; ATDA should also follow-up on this issue to ensure optimised chemical fertilisation.

3.3.9.6 Socio-political sustainability

The socio-political risks are very limited for this project: Government is well empowered with CCA and there were and will be still numerous initiatives to increase awareness, finetune existing or define new mechanisms that mainstream CCA into local and central planning and decision making processes.

At local level, some beneficiaries mentioned the risk of political interference but this risk should be limited when committees are formalised through the establishment of GIE.

Assessment of Outcomes	Rating
Financial resources	MU
Socio-political	L
Institutional framework and governance	L (municipalities and IGA) MU (infrastructures)
Environmental	ML
Overall Likelihood of Sustainability	MU

Table 19: Sustainability Rating Scale

3.3.10Progress to impact

In this terminal evaluation, the impact of the project has been assessed in terms of changes or benefits achieved in social, economic, institutional, environmental areas as well as the changes achieved for gender equality.

3.3.10.1 Social Impact

The social impact of the project can be assessed through behavioural change; as for farmers, the need to work together under same planting beds is a sign that the project is having a positive social impact; still, to access microfinance, this is not enough and additional steps to create solidarity groups are needed.

The formalisation of groups could make them more compact and more united. However, each community has its own form of organisation, especially since they were set up voluntarily. In the case of cattle troughs, the management committee prefers to entrust the custody of generated resources (mainly fees) to a member without resorting to a savings account.

Theft seems to be an issue in fish ponds and some irrigated schemes. The former has been addressed and the latter seems to be still problematic.

3.3.10.2 Economic Impact

The economic impact is significant for economic activities like aquaculture and vegetable production. It is less so for soap production.

Interviews showed that beneficiaries added revenue (>30%) is used mostly for children's education, health food security, purchase of clothing, tontine and household improvement. This positive trend comes a long way after

initial productions were virtually wiped out because of COVID19 lockdown and border closures. To counteract the negative effects of COVID9 on populations, UNDP provided additional funding (TRAC) to try to keep up beneficiaries' positive spirit with the project.

The potential impact is even higher should there be follow-up measures to create GIE that can access microfinance or multi-purpose agricultural platforms that can add value locally to farmers' production.

Under component 1, the economic impact of CCA mainstreaming so far has been very limited: municipalities have no access to specific funding and regular municipality yearly budget are not being upgraded accordingly ; hence municipalities are reluctant to reduce expectations (meaning serving less people) to climate proof their activities. There were several cases of activities that mainstreamed CCA but most interviews showed that authorities have a very difficult time in reformulation activities to make them CCA-friendly. Municipalities are always looking for additional funding to implement activities from resilient PDC or PAI. Still, that does not mean that there is no potential impact, on the contrary: updating CDPs will improve the formulation and budgeting of CSFs in development plans, and PMSD has contributed to the mobilisation of funding opportunities for such activities ; as an example, the commune of Bohicon was able to mobilise 25 million CFA for one of its climate projects, the direct result. However, this has yet to become the norm rather than an exception.

3.3.10.3 Institutional Impact

The impact of the project through capacity building has been very positive for all stakeholders – from ministries down to local level).

Municipalities with much more awareness on CCA mainstreaming – one can say it is literally embedded within municipalities - and they are now considering how to formulate 4th generation PDCs that are gender and CCA-friendly. This is the same for ATDA that are in a process of integrating CCA practices in their regular routine extension operations.

The integration of the CCA could be more effective through projects that go beyond the sphere of influence of just a municipality. That could be the prerogative of the umbrella organisations that could be much more impactful as the weather patterns are more global than local.

The impact should be significant if CePED can finalise the ex-post model for supporting stakeholders in strengthening the resilience of populations to climate change

3.3.10.4 Environmental Impact

The impact of the project – in particular water reservoirs - is minimal (so far) because of the small scale nature of these infrastructures and control measures targeting neighbouring residents and livestock breeders. It is difficult to establish whether there is overuse of chemical fertilisers or pesticide. The threat seems to be contained so far but that may change once the project is closed and ADTA does not follow up project's results and farmers' needs. The integration of environmental standards could be used to ensure infrastructures' protection.

3.3.10.5 Impact on Gender

The project did not address specifically gender but the selected activities were targeting more women than men. Results have shown over 70% female participation in training sessions on climate-proof agricultural practices and IGAs. Indeed, the manufacture of soap and hydroalcoholic gel is reserved exclusively for women (but aquaculture has been mostly male-dominated).

More female participation meant more women increasing revenue and more resources on household needs.

3.3.10.6 COVID19 Impact

As for any project on the planet, the pandemic has greatly disturbed development aid with extensive implementation delays, altogether shutdowns, border closures but also resulting in most innovative adaptive measures to address the pandemic.

The situation was no different in this project but surprisingly, if implementation was indeed impacted during the peak period, it did not significantly affect overall implementation. This may be because the project was already in an advanced stage of implementation when COVID19 struck and the following slowdown did not result in losing momentum altogether; hence the project was implemented at a slow pace during lockdown and relaunched immediately once the '*cordon sanitaire*' (lockdown) was terminated (even with all precautionary measures).

4. Main findings, Conclusion, Recommendations, Lessons Learned

4.1 Main findings

These are structured around the six evaluation criteria and evaluation (sub)questions.

Relevance: *Extent to which the project strategy is adapted to the country's priorities, national ownership and what is the best way to achieve the expected results?*

The project is highly relevant as it is in line with the key Government priorities focussing on climate vulnerability reduction and the most vulnerable populations. The project has taken up key strategic areas for GEF (e.g. climate resilience and water management) affects the project has been in line with both Government and donor's policies in including the national environment policy and biodiversity strategy, UNDAF's priorities on resilience and conservation, and GEF's strategy on biodiversity. It has responded to the pressing need to reduce climate-related vulnerability.

It has addressed key shortcomings, including the need to integrate climate risks into decentralised entities' planning processes, insufficient extension services available on CCA, the need to raise knowledge and understanding of climate-resilient infrastructures and promoting alternate livelihoods.

Coherence*: Extent to which the PMSD project is compatible with other interventions in the country, beneficiary sectors and institutions*

A lot of lessons learned were taken from previous interventions (e.g. PANA-1); these included the need to focus on limited thematic areas that have been prioritized by beneficiaries (hence the need for effective participation at formulation stage). Despite cofinancing, there was neither risk of duplication nor coordination with these interventions (PBM-Bonou and Millenium Village)

Effectiveness*: Progress towards results: to what extent have the project's expected outputs and objectives been achieved so far?*

The PMU has been very effective in adapting management measures that facilitated results achievement (see efficiency below). One key issue has been the approach adopted for sequential implementation between outcomes 2 and 3; under outcome 3, the PMU had a wide margin in defining alternative IGAs as these were not marked in the PRODOC, but it was implied that trained farmers (including from irrigation schemes) and others interested in non-farming activities would benefit from training sessions on access to finance. This was effectively the case but not enough to create entrepreneurial skills to the level farmers were ready to ask for microfinance though.

Both centralised and decentralised institutional stakeholders have been very proactive in project implementation with the provision of HR, participation in field visits, technical follow-up, etc.

Efficiency*: Project implementation and adaptive management: was the project implemented efficiently and cost-effectively? Was the project able to adapt to new circumstances, if necessary? To what extent do the project's monitoring and evaluation systems and project communication support project implementation?*

PMU has been very effective in financial resources utilisation adapting implementation according to local conditions ; this enabled the project to save resources and use them to solve more problematic issues (e.g. drinking throughs) or to reinforce results (e.g. retraining of beneficiaries).

The project has targeted the most vulnerable people in project sites (mainly youth, women).

An efficient M&E system has been put in place; it enabled PMU to steer the project as efficiently as possible.

the government provided extensive support (including financial) in the project.

Sustainability and impact: *To what extent are there financial, institutional, socio-economic and/or environmental risks to the sustainability of the project results in the long term?*

The risks vary between and within project components: financial risks are supposed to be limited for infrastructures with committees organising fee collections. This is valid as long as the organisational and institutional risks are limited for management committees of infrastructures. This is not the case at the time of the TE. Socio-economic risks are not relevant for outcome 1 on CCA mainstreaming into planning but they can be significant for some IGAs like soap production that is no longer profitable and low for others like aquaculture or vegetable production. Socio-political risks are very limited in this project.

Efforts are being made to empower beneficiaries with project's results through training but also periodic follow-up support. This is happening for all three components.

Lessons learned are being documented and will be the basis for the elaboration of an ex-post model for follow-up of project results.

Cross-cutting aspects - gender and rights, and environment**:** *Do the project interventions reach the most vulnerable groups and take into account climate change resilience considerations?*

Climate change vulnerability reduction is tackled first at institutional level with the support to municipalities and second at community level though alternative income generating activities and irrigation agriculture that is less prone to rainfall fluctuation.

Gender: the selection of income generating activities both in the agricultural sector and as alternatives are primarily targeting women (over 70% female participants against 30% male): these include vegetable production under irrigated conditions and soap production. Some minor activities did target mostly men (livestock herders and fishermen).

Women empowerment: revenue is contributing to both women independence and raising household standards (in particular health access and children education) so much so that it had to be taken into consideration as a risk for potential domestic violence.

In addition, the project has also targeted vulnerable unemployed youth located in more urban areas (Bohicon municipality) with support that can be considered as stepping stones for integration into active life. Hence the project fully complies with the policy '*Leave No-one Behind*'.

GEF additionality: *What are the overall environmental benefits of the GEF?*

PMSD contributes to two *GEF global environmental benefits* : climate change vulnerability reduction of populations most at risk and improved water management for agricultural production. This is achieved though water management and agriculture and food security improvement; the effects are potentially impacting but so far, the project is still in a process of enhancing stakeholders' capability and finalising infrastructures, so it is not yet impactful.

Overall the intervention has *achieved its primary results* on the institutional level as well as for increasing resilience through agriculture production less reliant on rainfall fluctuations. The results are much more limited for alternative income generating activities with success in aquaculture but issues of economics for soap production and overall a lack of project time to train beneficiaries into accessing the microfinance sector.

4.2 Conclusions

Project design:

The project design has been based on lessons learned from previous interventions successes and failures; in particular attention was made on avoiding dispersion of resources and focussing on one or two critical activities that generate most rural revenue and at risk from changing weather patterns: (i) institutional support so that authorities can better plan climate-resilient interventions that reduce populations' vulnerability, (ii) ensure access to water for agricultural production as it is number one sector affected by climate change and (iii) alternate income generating activities as a strategy to reduce risks. These are to better smoothen populations' revenues over time and therefore absorb acute shocks from evermore fluctuating weather patterns.

Taking stock of lessons learned:

One innovation to be highlighted in the project has been the concern for sustainability beyond project closure and from the Government's side the need to build lessons learned on how to design future interventions that address climate vulnerability ; provisions were made to ensure that lessons learned and best practices are well documented and that an ex-post model for stakeholders' follow-up (MCAPA) is drafted by project's end on how to tackle climate vulnerability in future interventions.

Implementation:

The PMU was very effective in this project with controlled delays through COVID 19, an M&E system that was truly functional, meaning most results were achieved by project's end – there was no need for extension, delivery has been exceptional in a COVID19 environment and overall, the project managed to bring together all planned stakeholders that did contribute to the best of their possibilities -.

It is of particular interest to show the path in implementation taken by PMU: outputs from outcome 2 and outcome 3 were somewhat implemented in a sequential manner because it was (logically) deemed difficult to push for microfinance outputs as long as beneficiaries were not both obviously in a conducive mindset (entrepreneurial skills), in operational conditions (they are producing) and in an actual activity that could benefit from microfinance (year-long vegetable production).

With early implementation, it appeared that this would likely be difficult to achieve and PMU set on prioritising unrelated activities to outcome 2 (fish farming, soap production, hydro-alcoholic gel…). These were just as impacting in terms of resilience but without the accrued impact of integrating outcome 2 activities with value addition IGAs from outcome 3. So, the project may have lost track of the logic of outcome 3. This was later recognised – but too late – with the need to support farmers with formal organising (GIE) and studies on multipurpose agricultural platforms. Unfortunately, budget resources did not allow this approach to be fully implemented and this is an issue for sustainability.

So, it is of paramount importance – through steering committees meetings – to sit back, take a break and discuss the strategic approach in project implementation so as not to lose sight of imbrications between outcomes and why they are so important.

Impact:

The impact vary between outputs: it is low for outcome 1 because municipalities are unable and/or unwilling to commit time and HR to identify funding sources that would support CCA. A counter-example (maybe the only one) is the Bohicon municipality that managed to secure fund – a true lesson learned -. It is high for outcome 2 with effective revenue rises for farmers and somewhat mixed again for outcome 3 with good prospects in fish farming and the need to reassess profitability of soap manufacturing as an individual IGA.

Sustainability: overall, the prospects for sustainability are difficult to measure but for sure, most achievements remain very fragile by project's end. Should there be no follow-up of beneficiaries and governance structures (committees) put in place, there is a risk of collapse. This has been recognised by PMU that is trying to boost capacity through retraining and support to institutions to ensure that follow-up procedures are put in place by the main technical entities (ATDA, CePED, municipality). However, the true test of beneficiaries' management capacity is when they are handed over the infrastructures' keys. Unfortunately, this will occur right by project's end and there won't be any follow-up by PMU. So it remains to be seen who will take over this role. On the positive side, CePED is working hard on designing the ex-post model for supporting stakeholders in strengthening the resilience of populations to climate change (MCAPA): it is an instrument that ensures the sustainability of achievements. It includes a capacity-building plan that includes activities to structure the beneficiaries. These activities will be carried out before the end of the project, under the leadership of the NPD. Also, the government of Benin, through the adoption of the MCAPA of the Bonou MCP, has validated the approach defended by CePED. Thus, CePED has carte blanche to implement this approach in the framework of all the projects implemented. The implementation of the sustainability and capacity building activities foreseen by the MCAPA PMSD should start in 2023.

Co-financing: Government has been very effective through co-financing in contributing to the projects' results, not only with conventional co-financing (vehicles, HR and premises) but mostly with actual activities implementation that enhance project results (strengthening sustainability, dialogue and coordination with stakeholders).

In a conclusion, this project has been effective in preparing decentralised authorities to mainstream CCA in their development plans but actual implementation remains out of reach. The construction of infrastructures is directly impacting vulnerability with increasing revenues but the governance and organisational structures that are the pillars for these gains are currently very fragile. It is however anticipated that the Government adoption of MCAPA for this project could enhance it substantially. Finally, IGAs are also contributing to reducing vulnerability but to a lesser extent, the key issue being that they do not take advantage of outcome 2 results for an augmented impact.

A summary of the evaluation ratings is provided in Table 20**.**

Evaluation Ratings			
1. Monitoring and Evaluation	**rating**	**2. IA& EA Execution**	**rating**
M&E design at entry	HS	Quality of UNDP Implementation	HS
M&E Plan Implementation	HS	Quality of Execution - Executing Agency	S
Overall quality of M&E	HS	Overall quality of Implementation / Execution	S
3. Assessment of Outcomes	**rating**	**4. Sustainability**	**rating**
Relevance	HS	Financial	MU
Effectiveness	MS	Socio-economic	L
Efficiency	HS	Institutional framework and governance	MU L (municipalities and IGA) MU (infrastructures)
Overall Project Outcome Rating	S	Environmental	ML
		Overall likelihood of sustainability:	MU

Table 20: Evaluation ratings

4.3 Recommendations

The recommendations focus on (i) final steps to ensure results' sustainability and impact, and (ii) suggestions on the way forward with CCA and vulnerability reduction:

4.3.1 Ensuring sustainability and increase potential impact

The project achieved a lot in terms of results but achievements remain fragile: ensuring results continuity requires strong governance mechanisms and ensuring that stakeholders can respond to unexpected situations. The project is showing impact, directly with accrued income generation and adoption of some (but not all) climate-proof practices. However, impact varies according to activities.

RECOMMENDATION 1: Enhance support to municipalities to implement CCA activities

The final steps of the project should concentrate on ensuring that knowledge and methods are internalised within municipalities, so that the future teams that will formulate the next generation PDCs as well as newly established interventions (e.g. PASD II) will have all documentation at hand to mainstream CCA in development plans.

One recurrent issue has been staff rotation: there is no culture of knowledge transfer when staff leave and information and knowledge are being depleted over. It is recommended that CCA mainstreaming training courses is digitalised into online training modules as freeware ; to be hosted on MDC website or any other relevant ministry. This would allow municipalities to train systematically new staff involved in planning and operations that might be impacted by climate change.

RECOMMANDATION 2: Improve effectiveness and organisational setup of infrastructures' related governance structures

Interviews of committee members showed that while they may be quite proactive and enthusiastic on the governance setup put in place, they have little if any experience in management. It is recommended to run additional training sessions on governance and local committee management, possibly after infrastructures' final acceptance and once they are officially responsible for the infrastructures.

At the same time, accelerating the pace for setting up the right conditions for creating GIEs (preferably before project closure) would strengthen these committees considerably and open up new opportunities; this would require assistance in preparing committee formalisation, defining rights and responsibilities of members, establishing functions and *modus operandi* for infrastructure and PV maintenance, security, etc.

RECOMMENDATION 3: Accelerate capacity building of most entrepreneurial beneficiaries to initiate access to microfinance

Prior to closure, beneficiaries selected on the basis of business projects/ideas should receive more technical training session that should prepare them to directly access microfinance organisations through solidarity groups so as to fund their business ideas. Vegetable farmers, fish farming, soap producers that are interested to expand their activity could benefit from such more specific training sessions.

RECOMMENDATION 4: Enhance stakeholders' technical capacities

Farmers were extensively training on climate-proof agricultural methods. They indeed did adopt several agricultural practices, whether under rainfed or irrigation conditions. Interviews, however, showed that several recommendations are not fully understood and/or respected by farmers (e.g. crop rotation schemes), which can have devastating consequences under intensive agriculture such as for irrigation. It is recommended to hold additional training sessions on these issues.

Pest control (related or not to the above) is also affecting irrigation schemes farmers with so far no decisive response. So it is recommended that PMU contacts INRAB as soon as possible so it can assess the situation and remedy this situation.

In order to enhance technical capacities of stakeholders – in particular on swift value addition, , specific training sessions could be held targeting the most proactive beneficiaries on (1) basic vegetable processing/conservation techniques and (2) soap producers that wish to switch to volume production

RECOMMENDATION 5: Identify additional lessons learned

The dissemination of bamboo has not been successful: heads of nurseries showed little interest as were farmers along riverbanks. A detailed assessment should be made to analyse why this activity was not successful and recommend what means, efforts, measures in the future are necessary for successful adoption of bamboo by vulnerable populations.

In the same vein, a follow-up of training should be held by project's end to inventories and explain resilient practices that were adopted or not and explain why.

This could then feed in the MCAP model which should be finalised by project's closure but also ensuring that it is being implemented by relevant stakeholders.

RECOMMENDATION 6 : Enhance sustainability

There is an urgent need to devise a follow-up mechanism of local stakeholders (farmers, livestock breeders, fishermen, soap producers…). Technical knowledge is only recent and follow-up is necessary to reduce the risk of massive drop-out once, there is no more entity supporting beneficiaries: (1) negotiate with ATDA the establishment of a monitoring mechanism of project results. A covenant would be preferable establishing conditions of follow-up (frequency, HR involved…) by ATDA, meaning financial resources out of yearly budget should be reserved for follow-up, (2) promote the accountability/independence of the Management Committees (non-interference of political power in the governance bodies via internal regulations) with a close follow-up by CePED.

4.3.2 Way forward on vulnerability reduction

RECOMMENDATION 7 : Project 's follow-up – what next?

The project has been very successful in setting up the basic conditions for reducing population's vulnerability to climate change. This was achieved through primary production both within the agricultural and non-agricultural sectors. The Government has always been determined that PMSD should be a showcase for scaling-up climate vulnerability reduction which is why it has been so keen to document lessons learned and best practices to feed in an ex-post model for follow-up. This scaling-up effort can be viewed from two very different sides: 1. Copy-adapt this type of project in other vulnerable municipalities or even neighbouring villages from the intervention area – horizontal approach -, 2. Expand activities from PMSD target villages by adding value to existing operations (e.g. promoting value chains and the creation of small-scale economic pools). While both approaches can obviously coexist, PMSD made several steps in the direction of (2.) with the support in the creation of GIE and studies on the feasibility of multi-purpose platforms ; so it is recommended to at least consider this approach, should there be resources made available in the near future. (2.) should focus no more on primary production but on value addition

and transformation (bulk commercialisation, volume creation, transformation, etc) – creating value locally whenever relevant and economically making sense. A relatively straightforward example could be with the irrigation scheme in Bohicon: it is a mini-incubator for unemployed youth interested in commercial vegetable production. Demonstration or small-scale transformation systems could prove highly valuable directly for the beneficiaries themselves, helping them in making their future operations more sustainable if they can access value addition locally and directly. This would require investment but also some support from ATDA.

RECOMMENDATION 8 : Support municipalities in financing CCA-integrated development plans

Interviews have shown systematically that whether CCA has been mainstreamed or not into local development plans, their operationalisation remains highly elusive. Municipalities simply do not access additional resources for implementation. Indeed, moving from planning to executing requires additional funding, hence proactivity if not extensive efforts to seek funds that may require additional human resources at municipal level – that might not be available. This has always been an issue since PANA as the Government has yet to adapt its resources allocation mechanisms to municipalities to render them more in tune with climate change concerns. Lobbying efforts in that direction could be exerted by MDC to the Ministry of Decentralisation. In the meantime, it is recommended that any future intervention considers this issue and devises a methodology to support municipalities in seeking out funding for their climate-resilient development plans: if technical staff is being extensively trained on CCA mainstreaming, it will be of little use if municipal decision makers do not have CCA as a key priority. So decision-makers – in particular, Municipal Secretaries – should be made aware of the potential of CCA mainstreaming into plans and of the need to allocate time and resources to operationalise CCA-responsive municipal development plans and activities.

4.4 Lessons learned

From both the design and actual implementation of the project, a series of lessons learned can be drawn and should be considered for future interventions:

On the design :

- Focusing on what matters and avoid spreading resources:

The project is based on PANA-1 achievements and failures and constitutes a sort of scaling-up exercise. In addition, it is strengthening of some PANA-1 achievements. Lessons learned from PANA-1 show that wide ranging support is not impactful with too thinly spread out resources. It is preferable to focus on a limited number of issues. So PMSD targeted only one key sector: water resource management instead of indiscriminate sectors' support. This approach allowed for resource concentration and more effective implementation. Another lesson learned was the need to leave out local political influence in the local governance mechanisms. This was applied for the establishment of autonomous local management committees; this will bring in some advantages (see below)

- Ill-considered outputs have no impact:

The second key project input for component 2 is bamboo plantations as a strategy to reduce riverbanks erosion. This input has been widely ill-defined and poorly budgeted. While it is growing in various parts of Benin, there is little understanding on its potential value, as an erosion crop but also many more other uses. This project was therefore an opportunity to introduce this cop in various regions. However, resources were missing to ensure success of this activity: considerable efforts should have been devoted to ensure bamboo acceptance through demo fields, trials, beneficiary visits of growing areas, etc. None of this was realistically carried out in all project sites and most support focused on training and field visits to a growing bamboo plantation in the centre of the country. This was in no way sufficient to convince potential users in accepting this crop for erosion control. Introducing a new crop (or new usage) requires extensive efforts in terms of awareness raising but also real conditions demonstrations fields. This would have been way out of project's scope. The approach was also too direct with the training of forest managers and community representatives alike. It would have made more sense to train forest staff that could have then disseminated knowledge of bamboo. This all means that necessary resources must match output achievement. In PMSD, too much resource would have been necessary to make bamboo plantation successful. It should have been dropped out of the project or amended with the planting of native vegetation.

- Additional human resources for implementation:

The use of UNV as well as external resource-persons has been a very efficient strategy for project implementation: UNVs can be deployed swiftly, their impact on project's budget is very reasonable and they can contribute extensively in implementation facilitation, often together with a specialist. Another aspect, as critical, has been to avoid implementation interruptions once regular staff rotates/leaves the project

The use of resource-persons is also very little impacting on the budget (attendance fee for meetings and DSA, should there be field trips) and at the same time providing top notch technical expertise that would have required external consultant's contracting.

- On the implementation :
    - An executing entity leadership is key to ensure a smooth implementation; so it is just as important making sure that there is a strong agreement internally within the executing entity.
    - a detailed analysis of the PRODOC at project start and the formulation of an M&E strategy operationalization facilitates greatly the implementation through better understanding the subtleties of indicators and adjusting either indicator definition or implementation to stay in line with project logic ; on the contrary, implementation interpretation like outcomes sequentially implemented can subtly and silently result in implementation slowly sliding away from the results with eventually not achieving fully the outcome and requiring additional measures to prepare for sustainability through additional support (e.g. late focus on GIE and multipurpose platforms by project's end) while they could have been considered at initial stages or at least in the middle if implementation (e.g. mid-stage period)
    - The use of biannual work plans in addition to regular AWP reduces significantly the uncertainly of implementation, resulting in delivery relatively close to expected AWP as seen in Table 9

On activities and adaptive management:

- Unplanned activities and innovation are key to solving issues: a typical example is the use of Gmelina and Vetiver to stabilize embankments and the plantation of trees for shading (creating a micro-climate) ; this implementation approach is also responsive to beneficiary needs
- Water trough construction has been very effective at reducing tensions between farmers and livestock breeders, an unexpected issue from the construction of water reservoirs

On participation and beneficiaries' proactivity:

- Listening to populations and Integrating local knowledge can have highly valuable repercussions: an example: the digging of wells in the Bohicon municipality, prior to boring, due to sandy conditions
- Open participation – at least based on simple criteria – can result in stable group formation, possibly with a high turnover rate but resulting in a healthy sieving mechanism that will leave the most proactive beneficiaries in the irrigation groups

On the impact :

Activities can generate unexpected results like in Kadolalasi site in Ouaké municipality (PANA 1): GSM companies have mounted antennas nearby the water reservoirs so as to take advantage of local conditions (creating a festive/touristic place)

On follow-up :

- The lack of long-term strategy to ensure sustainability is an issue with no 2nd phase planned (either internally through Government's own resources or through external support); this means that whatever additional resources are being proposed by MDC, support will be interrupted for months if not 1, 2 or even 3 years, which could be highly detrimental to project results, not to mention the fragility of organisational structures and governance systems

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Annexe 1: Terms of Reference

TERMS OF REFERENCE FOR THE FINAL EVALUATION OF THE PROJECT "Strengthening the resilience of rural livelihoods and sub-national government system to climate risks and variability in Benin "

1. INTRODUCTION

In accordance with UNDP and GEF monitoring and evaluation policies and procedures, all medium and large-scale UNDP-supported and GEF-funded projects must undergo a terminal evaluation (TE) at the end of the project. These Terms of Reference (ToR) aim to specify the terms of reference for the final evaluation of the large-scale project entitled "Strengthening the resilience of rural livelihoods and the local governance system to risks and climate variability in Benin". -PMSD" (PIMS no. 5433), implemented under the technical direction of the Centre for Partnership and Expertise for Sustainable Development (CePED) under the supervision of the Ministry of Development and Coordination of Government Action (MDC) .

This project was launched in February 2018 and is currently in its fifth year of implemented over a total period of five years (2018-2022).

These terms of reference set out the elements to be taken into account in the context of the final evaluation of the said project in accordance with the Guidelines for Conducting Final Evaluation of UNDP-supported and GEF-funded projects.

2. CONTEXT AND SITUATION OF THE PROJECT

Being aware of climate-related challenges, Benin ratified the United Nations Framework Convention on Climate Change (UNFCCC) on June 30, 1994. In accordance with this commitment and within the framework of the implementation of Decision 28 /CP.7 taken at the 7th session of the said Convention, in November 2001 and relating to the development of National Action Programs for the purposes of Adaptation to climate change (NAPA), Benin launched its NAPA in January 2008 with the support of the Global Environment Facility (GEF). This document has enabled Benin to identify the major climatic risks to which its populations are subject. These are drought, late and violent rains and floods.

Indeed, it emerges from the conclusions of the PANA-BENIN that in the agro-ecological zones of southern, central and northern Benin, drought, late and violent rains and floods constitute the major climatic risks. The resources most exposed to these risks are watersheds, land, biodiversity, subsistence agriculture, water resources, market gardening, cash crops, fishing and livestock. The social groups most exposed to these risks are small farmers, market gardeners and emerging farmers, fishermen and breeders, both their farms and their health.

In addition, strong winds and heat waves are two climatic phenomena likely to increase in the near future. Some local hazards such as sea level rise have a limited geographical footprint but a significant social and economic impact.

To reduce the vulnerability of populations to these identified climate risks, PANA-BENIN has retained five (05) priority and urgent measures to be implemented through projects. Thus, several projects have been developed, including the project for Strengthening the Resilience of Rural Livelihoods and the Local Governance System, to Risks and Climate Variability in Benin after the NAPA Agriculture and the NAPA Energy. For the implementation of these measures, Benin received funding from the Least Developed Countries Fund (LDCF).

2.1. General project information

2.1.1. Brief presentation of the project

The project for Strengthening the Resilience of Rural Livelihoods and the Local Governance System, to Risks and Climate Variability in Benin, also called PMSD aims to strengthen the resilience of agriculture and livelihoods and integrate the considerations climate risks into national and decentralized planning processes so that local communities are less vulnerable to climate change.

It responds to the third priority measure identified during the NAPA-BENIN of 2008, which aims to:

"Enhancing the availability of water during dry periods for the purpose of adapting populations to climate change". To achieve its objective, the PMSD focuses on three (03) mutually reinforcing components. It is :

- component 1, which builds the capacity of departments and municipalities in targeted areas, as well as all relevant ministries, to fully integrate climate change risks and opportunities into their development planning and budgeting work;
- component 2 which reduces the vulnerability of targeted communities to the adverse effects of climate change by providing technical training and smart investments, water harvesting and management infrastructure for productive agriculture, as changing rainfall patterns is the main risk induced by climate change for Beninese agriculture, mainly rainfed;
- component 3, which improves the adaptive capacities of the targeted communities by supporting the diversification of their income-generating activities.

The PMSD is based, among other things, on the successes and significant results of the PANA-1 Agriculture project (Integrated Adaptation Program to Combat the Adverse Effects of Climate Change on Agricultural Production and Food Security in Benin), which was implemented in nine (09) pilot sites across Benin and has made it possible, on the one hand, to improve the adaptive capacities of many poor farmers and, on the other hand, to introduce adaptive technologies and the development of innovation, using a research-action approach. The PMSD relies on the positive impacts and lessons learned from this innovative approach, to support target groups in building resilient and sustainable production approaches and methods.

2.1.2. Project goals and objectives

The overall objective of the project is to support the resilience of agriculture and livelihoods and integrate climate risk considerations into national and decentralized planning processes so that local communities are less vulnerable to climate change. Specifically these are:

(i) include climate change and gender in development plans and budgets at national and local levels;
(ii) improving productive agricultural infrastructure and human skills to cope with changing rainfall patterns;
(iii) improve the adaptive capacity of communities through more diversified income-generating activities.

2.1.3. Alignment of the project with the SDGs, the UNSDCF and the CPD-2019-2023

The PMSD project contributes to the achievement of the SDGs, the UNSDCF and the CPD as indicated below:

SDGs	SDG1 (zero hunger); SDG 8 (Productive employment and decent work); SDG 12 (Sustainable consumption and production); SDG 13 (Measures relating to the fight against climate change).
UNSDCF	Outcome 1: By 2023, Beninese populations, especially the most vulnerable, are more resilient and have a better quality of life through access to decent employment, food and nutrition security, clean energy, and through the sustainable management of natural resources, the adverse effects of climate change, crises and disasters
CPD	Output 1.2: Marginalized groups, particularly youth and underemployed women, have increased technical capacity to access agricultural technologies adapted to climate change and thus better earn a living and improve their productivity.

2.1.4. Project intervention area

The PMSD project is implemented through 09 sites distributed in 05 municipalities, namely the municipalities of Avrankou (Kotan, Danmè-Kpossou), Bohicon (Dakpa), Bopa (Agbodji, Sèhomi), Ouaké (Kadolassi, Kpakpalaré) and Savalou (Aouiankanmè, Damè).

The project aims to develop, strengthen and amplify the positive results obtained within the framework of the PANA 1-Agriculture1 project. With this in mind, 03 municipalities benefiting from the PANA1 project are also taken into account by the PMSD. These are the communes of Bopa, Ouaké and Savalou.

The 05 municipalities covered were chosen according to the vulnerability of their populations to the adverse effects of climate change according to the following criteria:

- the severity index in terms of poverty;
- the most vulnerable agro-ecological zones according to NAPA2;
- the demographic weight of the municipality
- the share of economically vulnerable households;
- the percentage of households facing moderate and severe food insecurity
- the commitment of the municipality (for the municipalities concerned) during the implementation

Following the selection of the priority municipalities, the villages were identified and selected on the basis of objective criteria shared with the municipal actors, namely:

- a village is not implementing or developing a resilience building plan;
- high poverty severity index;
- high poverty severity index in a low area (vulnerable area);
- has significant land degradation problems;
- contributes significantly to the agricultural production of the municipality.

2.1.5. Total budget and planned co-financing.

Funding by donor(s)	**Lessor(s)**	**In US Dollars**
	GEF LDCF	**4,450,000**
	PARALLEL CO-FINANCING (all other co-financing which is not not cash co-financing administered by UNDP)	
	Bonou Millenium Municipality Project, for sustainable development (PCM-BONOU)	15,000,000
	Millennium Village Project	12,000,000
	Center for Partnership and Expertise for Sustainable Development (CePED)	3,000,000
	Total co-financing	**30,000,000**

[1] Integrated adaptation program to combat the effects of climate change on agricultural production and food security

[2]Zone 1: Karimama, Malanville, North Kandi. Zone 4: Ouaké, West-Djougou, Copargo, Tanguiéta, Matéri, Cobli, Boukoumbé, Natitingou, Toukountouna, Kouandé. Zone 5: Bassila, Sud-Tchaourou, Aplahoué, Kétou, Bantè, Glazoué, Dassa, Savè, Djidja. Zone 8: Ouidah, Abomey, Calavi, So-Ava, Lokossa, Athièmé, Comè, Grand-popo, Sèmè-Podji, Aguégués, Dangbo, Adjohoun

2.1.6. Brief description of institutional arrangements and any other agreements reached with relevant partners and stakeholders

The Executing Partner of the project is the Center for Partnership and Expertise for Sustainable Development (CePED) as a structure under the supervision of the Ministry of Development and Coordination of Government Action (MDC). The project is managed according to national procedures (NIM).

At the local level the main stakeholders of the project are the beneficiaries (poor farmers, experts from agricultural extension services, local NGOs) and the municipalities of Avrankou, Bohicon, Bopa, Ouaké and Savalou.

At the national level, the project stakeholders are the Ministry of Development and Coordination of Government Action (MDC), the Ministry of Agriculture, Livestock and Fisheries (MAEP), the Ministry of of Life and Sustainable Development (MCVDD), the National Institute of Agricultural Research of Benin (INRAB), the Ministry of Water and Mines (MEM).

As part of its implementation, the project governance bodies are: (i) the Cooperation Program Steering Committee; (ii) the Technical Project Management Committee; (iii) the Project Management Team; (iv) NIM and HACT Audit Arrangements.

The implementation of certain project actions required the signing of partnership agreement protocols with public structures and project implementation partners. It is :

- the signing of partnership agreement protocols with the Public Economy Laboratory (LEP) for the conduct of four studies, namely: Tax and non-tax measures related to climate change to be taken into account in future finance laws; Modelling the impact of public policies on the SDGs; Operational framework of indicators of the Living Environment and Sustainable Development sector in connection with the SDGs; Translation of Nationally Determined Contributions into Climate Business Plans.
- the signing of partnership memorandums of understanding with the Beninese Centre for Scientific Research and Innovation (CBRSI) for the conduct of two studies, namely: Baseline study on SDG 7 on clean energy and affordable cost; Baseline study on SDG 13 on the fight against climate change and its repercussions.

- Context of the COVID-19 pandemic in Benin and impact on project implementation
- On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic as the novel coronavirus rapidly spread to all regions of the world. Like most countries, Benin has also suffered the effects of the COVID-19 pandemic since March 16, 2020, the date of the registration of the first confirmed case, until December 2021 when the cases of contamination tend to decrease; which led the Government to carry out a easing of preventive and restrictive measures, on 16 March 2022.
- This health crisis, having effects on the Beninese economy as a whole, also negatively impacted the implementation of the project during the 2020-2021 period. The main impacts recorded concerned the blocking of work in progress on the various project intervention sites, the impossibility for the project team to carry out direct monitoring and other field activities and the postponement of certain activities requiring the mobilization partners and beneficiaries awaiting the lifting of restrictions on outreach work. However, the sanitary cordon has been lifted since May 10, 2020 and activities requiring field trips have resumed with limits on the mobilization of actors.
- Faced with this health situation, the PMSD provided support to its beneficiaries to help them apply barrier gestures to the disease and to relaunch their activities despite the crisis. In addition, measures have been taken by the project team to enable the activities planned in the work plans to be continued despite the restrictions, and above all to make up for any delays as soon as these restrictions are lifted. Examples include: (i) continuing and accelerating the development of various documents (concept notes, ToR, training plans, etc.) as well as brainstorming activities to be carried out in the office; (ii) prioritization of teleworking during the restriction period; (iii) continued monitoring of works, relying in particular on the PMSD focal points at town hall level.

OBJECTIVES OF THE FINAL EVALUATION

This mandate aims to:

- assess the achievement of project results against what was planned and draw lessons that can both improve the sustainability of the benefits of this project and contribute to the overall improvement of UNDP programming;
- encourage accountability and transparency;
- assess the extent of the project's achievements.
- In addition, in order to reduce the adverse effects of COVID-19 on its results, the project had defined and implemented some prevention and protection measures based on government prescriptions and in line with the recommendations of the UNCT namely:
- sensitization of communities on COVID-19, its effects and prevention and protection measures through communication channels;
- support to communities for the acquisition of means and devices to fight against
- spread of COVID-19;
- the construction of drinking troughs to settle the animal herd and limit the spread of COVID 19 relating to the movement of breeders;

- the continuation of the training of beneficiaries on technical production routes and the establishment of perimeters developed taking into account the COVID 19 pandemic.

These interventions will be considered within the scope of this evaluation.

3. FINAL EVALUATION APPROACH AND METHODOLOGY

The final evaluation report should provide credible, reliable and useful evidence-based information.

The terminal evaluation team should review all relevant sources of information, including documents developed during the preparation phase (such as the FIP, UNDP Inception Plan, Environmental and Social Risk Screening Procedure UNDP/PDRES), project document, project reports including annual PCRs, project budget revisions, lessons learned reports, national policy and legal documents and any other material that the team deems useful to support this assessment. The FE team should review the GEF Focal Area baseline and mid-term indicators/tracking tools, submitted to the GEF at the time of Director's endorsement and at mid-term milestones.

The assessment team should follow a participatory and consultative approach to ensure active involvement of the project team, government counterparts (including the GEF operational focal point), implementing partners, UNDP Country, NCE Regional Technical Advisor, UNDP, , and other stakeholders.

In particular, the assessment will be based on:

- a desk review which will be based on all relevant sources of information, including documents developed during the project preparation phase (e.g. Project Identity Sheet (PIF), UNDP Project Initiation Plan, UNDP Environmental and Social Safeguards Policy, Project Document, project reports including Annual Project Review/PIR, project budget revisions, lessons learned reports, national policy and legal documents, and any other material the team deems useful to support the review). The Terminal Evaluation Team will also review the GEF Focal Area Benchmark Tracking Tool presented to the GEF,
- meetings and discussions with the actors concerned (the MDC, the CePED, the MAEP, the MCVDD, the INRAB, the MEM, the beneficiary populations and the municipalities of Avrankou, Bohicon, Bopa, Ouaké and Savalou, the Territorial Development Agencies Agriculture, local NGOs, senior officials and team/component leaders, key experts and consultants in the relevant field, project steering committee, academia, local authorities and CSOs, etc.) ;
- individual or group questionnaires;
- participatory techniques or any other method of collecting relevant information;
- the exploitation and analysis of the information collected with a view to producing the report.

The specific design and methodology of the terminal evaluation should emerge from consultations between the evaluation team and the above-mentioned parties regarding what is appropriate and feasible to achieve the goal and objectives of the terminal evaluation and to answer questions. assessment, given budget, time and data limitations. The final evaluation team should use gender-sensitive methodologies

and tools and ensure that gender equality and women's empowerment, as well as other cross-cutting issues and the SDGs, are integrated into the final evaluation report.

The final methodological approach, including the schedule of interviews, field visits and data to be used in the evaluation, should be clearly described in the evaluation inception report and be fully discussed and agreed between UNDP, stakeholders and the evaluation team.

In addition, the evaluation team is expected to carry out field missions, particularly to the project sites in Avrankou, Bohicon, Bopa, Ouaké and Savalou, depending on the evolution of the security situation on the the final report should describe the overall approach taken for the FE and the rationale for this approach by making explicit the underlying assumptions, challenges, strengths and weaknesses regarding the methods and approach of the evaluation.

In addition, there are no longer any restrictive measures related to the fight against COVID-19. Thus, travel within the country is authorized. Entry into Beninese territory, via land, air and sea borders, is subject to the presentation of a negative PCR test no more than 5 days old or a negative antigenic RDT no more than 72 hours old.

4. DETAILED SCOPE OF THE FINAL EVALUATION

The final evaluation will assess the performance of the project against the expectations set out in the project's logical framework/results framework (see Annex A of the ToR). Otherwise, the evaluation will have to cover all the results of the PMSD relating to its three components in the communes of Avrankou, Bohicon, Bopa, Ouaké and Savalou, since its start.

The findings of the evaluation should cover without exception the following areas. A complete presentation of the content of the final evaluation report is provided in Annex C of the ToR.

Criteria requiring scoring are marked with an asterisk (*).

a) Results

i. Project design / formulation

- National priorities and country ownership
- Theory of change
- Gender equality and empowerment of women
- Social and environmental safeguards
- Analysis of the results framework: project logic and strategy, indicators
- Assumptions and Risks
- Lessons learned from other relevant projects (e.g. in the same focal area) incorporated into project design
- Planned stakeholder participation
- The links between the project and other interventions within the sector
- Management methods

ii. Project implementation

- Adaptive management (modification of project design and project products during implementation)
- Real participation of stakeholders and real partnership agreements
- Financing and co-financing of the project
- Monitoring and evaluation: design at entry (*), implementation (*) and overall evaluation of M&E (*)
- Implementing partner (UNDP) (*) and executing agency (*), overall project monitoring/implementation and execution (*)
- Risk Management, including Environmental and Social Standards

iii. Project results

- Assess the achievement of results against indicators by reporting the level of progress for each objective and result indicator at the time of the final evaluation and noting the final achievements
- Relevance (*), Effectiveness (*), Efficiency (*) and overall achievement of the project (*)
- Sustainability: financial (*), socio-political (*), institutional framework and governance (*), environmental (*), overall probability of sustainability (*)
- Country ownership
- Gender equality and empowerment of women
- Cross-cutting issues (poverty reduction, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, fundamental rights, capacity building, South-South cooperation, knowledge management, volunteerism, etc. , According to the case)
- GEF additionality
- Catalytic role / Replication effect
- Progress towards impact

The questions to be addressed for each of the domains can be found in the guidelines for the conduct of final evaluation of projects supported by UNDP and financed by the WEF, from page 40 to page 62.

b) *Key Findings, Conclusions, Recommendations and Lessons Learned*

- The evaluation team will include a summary of key findings in the final evaluation report. Findings should be presented as statements of fact based on the analysis of the data.
- The conclusions section will be drafted in light of the findings. Conclusions should be full and balanced statements, well supported by evidence and logically linked to the findings. They should highlight the strengths, weaknesses and results of the project, answer the key evaluation questions and provide information on the identification and/or solutions to important problems or issues relevant to the beneficiaries of the project, UNDP and GEF, including gender issues, equality and women's empowerment.
- The recommendations section should provide concrete, practical, achievable and targeted recommendations for the intended users of the evaluation on actions and decisions to be taken. Recommendations should be specifically supported by evidence and linked to findings and conclusions related to the key questions addressed by the evaluation.
- The evaluation report should also include lessons that can be learned from the evaluation, including best practices for addressing issues related to relevance, performance, and success that can provide insights gained in the particular circumstances (programmatic and evaluation methods used, partnerships, financial leverage, etc.) applicable to other GEF and UNDP interventions. Where possible, the assessment team should include examples of good practice in project design and implementation.
- It is important that the conclusions, recommendations and lessons learned include results related to gender equality and women's empowerment.

The final evaluation report will include a table of evaluation scores, as shown below:

Table 1 of the ToR: Evaluation rating table for Strengthening the resilience of rural livelihoods and the local governance system to risks and climate variability in Benin-PMSD

Monitoring and evaluation	Rating3
Design of start-up monitoring and evaluation	
Implementation of monitoring and evaluation plan	
Overall quality of monitoring and evaluation	
Implementation and execution	**Rating**
Quality of implementation/monitoring by UNDP	
Quality of execution: implementing partners	
Overall quality of implementation/execution	
Evaluation of results	**Rating**
Relevance	
Efficiency	
Efficiency	
Overall assessment of project results	
Sustainability	**Rating**
Financial ressources	
Socio-political/economic	
Institutional framework and governance	
Environmental	
Overall likelihood of sustainability	

5. EVALUATION CRITERIA AND KEY QUESTIONS

The evaluation must respect the following main criteria without being limited to these:

Table: Non-exhaustive list of key questions by evaluation criterion

Criteria devaluation	Key issues
Relevance	- To what extent were the project objectives aligned with national development priorities? - To what extent has the project responded appropriately to political, legal, economic, institutional, etc. changes in the country? - To what extent has the project been formulated in line with national and local strategies to advance gender equality? - To what extent was the project aligned with the UNDP Strategic Plan, CPD, UNDAF, United Nations Sustainable Development Cooperation Framework (UNSDCF), SDGs and GEF strategic programming? - To what extent has the project contributed to the theory of change for a country program outcome? - To what extent have relevant stakeholders been involved in the project? - To what extent has the project been formulated according to the needs and interests of all targeted and/or relevant stakeholder groups? - To what extent is the intervention informed by the needs and interests of diverse stakeholder groups through extensive consultation? - To what extent have lessons learned from other relevant projects been taken into account in the design of the project?

Efficiency	- To what extent has the project contributed to the country program results and outputs, the SDGs, the UNDP Strategic Plan, GEF strategic priorities and national development priorities? - What are the factors that contributed to the achievement or not of the expected results? - To what extent did the actual results/outputs of the project correspond to what was planned? - What are the areas in which the project had the most and least achievements; and what are the contributing factors? - To what extent has the intervention achieved or is expected to achieve results (outputs, outcomes and impacts, including global environmental benefits) taking into account key factors that influenced the results? - What are the constraining factors, such as socio-economic, political and environmental risks; cultural and religious festivals, etc. and how were they overcome? - What alternative strategies would have been more effective in achieving the project objectives? - To what extent has the project contributed to gender equality, women's empowerment and a human rights-based approach? - To what extent a gender-sensitive and human rights-based approach has - been integrated into the design and implementation of the project?
Efficiency:	- To what extent has there been efficient and economical use of financial and human resources and strategic allocation of resources (funds, human resources, time, expertise, etc.) to achieve results? - Has the project completed planned activities and achieved or exceeded expected results in terms of achieving global environmental and development goals on schedule and as cost effective as originally planned? - How does the project cost and time versus output/outcomes equation compare to similar projects? - What are the costs of not providing resources for gender equality and human rights mainstreaming (eg increased benefits that could have been achieved for a modest investment)? - What provision of adequate resources was needed to integrate gender equality and human rights into the project as an investment in short, medium and long-term benefits? - To what extent does the allocation of resources to target groups take into account the need to prioritize the most marginalized people? - To what extent was the project management structure as described in the project document effective in generating the expected results? - To what extent were project funds and activities delivered in a timely manner? - To what extent has the project's M&E system ensured effective and efficient management of the project?
Sustainability	- What is the likelihood that financial resources will be available once GEF assistance ends to support the continuation of benefits (income generating activities
	- and trends that may indicate that it is likely that there will be adequate financial resources to sustain project results)? - Are there any social or political risks that could jeopardize the longevity of project results? - What is the risk that the level of stakeholder ownership (including government and other key stakeholder ownership) will be insufficient to sustain project results/benefits? - Do the various key stakeholders see that it is in their interest that the benefits of the project continue to flow? - Is there sufficient public/stakeholder awareness to support the long-term objectives of the project? - Are lessons learned documented by the project team on an ongoing basis? - Are successful aspects of the project transferred to appropriate parties, potential future beneficiaries and others who could learn from the project and potentially replicate and/or expand it in the future? - Are the gender results achieved short-term or long-term? - Do the legal frameworks, policies, governance structures and processes pose a threat to the continued benefits of the project? - Are there any environmental factors that could compromise the future flow of environmental benefits from the project? - Will certain activities in the project area pose a threat to the sustainability of project results?

National ownership	- Is the project concept rooted in national sector and development plans? - Have the results (or potential results) of the project been integrated into national sector and development plans? - Are relevant national representatives (eg government officials, civil society, etc.) actively involved in project identification, planning and/or implementation? - Has the recipient government maintained its financial commitment to the project? - Has the government approved policies and/or amended regulatory frameworks in line with project objectives? - Have relevant national government and civil society representatives been involved in project implementation, including as part of the project board? - Has an intergovernmental committee been set up to liaise with the project team, recognizing that more than one ministry should be involved?
Equality of gender and women's empowerment women	- How effective is the project in contributing to gender equality and women's empowerment? - How have gender results advanced or contributed to environmental, climate and/or resilience project results? - Are the gender results achieved short or long term? - Is there a potential negative impact on gender equality and women's empowerment - ? If so, what can be done to mitigate this? - Indicate to which of the following result areas the project has contributed (indicate as many result areas as necessary and describe the specific results that have been attributed to the project): o Contribute to closing gender gaps in access and control Resource ; o Improve women's participation and decision-making in the governance of natural resources; o Target socio-economic benefits and services for women.
Progress towards the goal and them expected effects	- To what extent has the expected effect of the project been achieved? - To what extent the achievement of the outcome depends on the achievement of project outputs and - other factors that affect the achievement of the effect?

6. CALENDAR

The total duration of the final evaluation will be thirty (30) firm working days to be paid, which can be spread over approximately eight (08) weeks from the date of signature of the consultants' contracts. The tentative schedule for the assessment is as follows, with T indicating the time or date, with T0 as the closing date for submission of applications:

CALENDAR	ACTIVITY
T0	Closing of applications
T1 = T0 + 7 Days	Selection of the final evaluation team
T2 = T1 + 7 Days	Preparation of the team (delivery of Project Documents)
T3 = T2 + 4 Days	Review of documents and preparation of the Inception Report
T4 = T3 + 3 Days	Finalization and validation of the Initiation Report no later than the start of the final evaluation mission
T5 = T4 + 10 Days	Mission: meetings with stakeholders, interviews, field visits
T6 = T5 + 2 Days	**Summary meeting of the mission and presentation of the first conclusions**- at the earliest at the end of the mission
T7 = T6 + 8 Days	Preparation and submission of draft report

T8 = T7 + 2 Days	Consideration of observations and contributions in the audit table trail and report finalization and submission
T9= T8 + 3 Days	Preparation of management responses by the implementation department of the project
T10 = T9 + 2 Days	Organization by the project implementation management of a workshop/meeting feedback with stakeholders
T11 = T10 + 2 Days	Expected date of completion of the entire final evaluation process

The possibilities for on-site visits should be set out in the Initiation Report.

7. DELIVERABLES EXPECTED FROM THE FINAL EVALUATION

#	Documents to be produced	Description	Time limit	Responsibilities
1	**Inception report**	The evaluation team specifies its objectives, methods exam and schedule	At the latest 2 weeks before the field mission: (T4)	The evaluation team presents the report to the Unit director and project manager
2	**Preliminary report**	First conclusions	End of mission: (T7)	The evaluation team presents the findings to the Commissioning Unit and to the project management
3	**Draft Final Report**	Full report (drafted using the content guidelines in Annex B of the ToR) with annexes	Within three weeks of the start of the mission: (T8)	The draft report will be sent to the Commissioning Unit, the reference group; it will then be reviewed by the Project Coordinating Unit, and the Operational Focal Point of the GEF
4	**Final report * + Audit Trail**	Revised report with cross-references detailing how comments received in the final report were acted upon (or not)*(To see the model in Appendix H of ToR)*	One week after receipt of UNDP comments on the draft report: (Q8)	The final report will be sent to the Commissioning Unit

*The final evaluation report must be written in English. If necessary, the Commissioning Unit can arrange for the report to be translated into a language more commonly spoken by national stakeholders.

All final terminal evaluation reports will be subject to a quality review by UNDP's Independent Evaluation Office (IEO). For more details on the quality analysis of decentralized evaluations carried out by the IEO, please consult section 6 of the Assessment Guide from the UNDP.

8. PROVISIONS RELATING TO THE FINAL EVALUATION

The Commissioning Unit has the main responsibility for managing the evaluation. The Unit commissioning the evaluation of the project is the country office of UNDP Benin.

The Commissioning Unit will enter into a contract with the consultants and will ensure that the evaluation team will have timely per diems and travel facilities in the country. The project team will be responsible for contacting the evaluation team in order to provide them with all the necessary documents, to prepare the interviews with the stakeholders, and to organize the field visits.

9. LINE-UP

A team of two independent consultants will conduct the evaluation. It will be headed by an international consultant, team leader with solid international experience in project evaluation. The associated consultant will be a national expert with experience in evaluation and in the thematic field of the PMSD project. The consultants cannot have participated in the preparation, formulation, and/or implementation of the project (including the drafting of the Project Document), must not have carried out the mid-term evaluation of this project and should not have a conflict of interest in relation to the activities related to the project.

The selection criteria are as follows:

No.	Criteria	Scale	Description of criteria
1	Relevant specific experiences	70	Recent experience in results-based management evaluation methodologies (05)
			Experience using SMART indicators and reconstructing or validating baseline scenarios; (03)
			Competence in adaptive management as applied in the field of adaptation to climate change (03)
			Experience in project evaluation (05)
			Professional experience in Benin or in the West African sub-region; (08)
			Professional experience of at least 10 years in relevant technical sectors; (10)
			Demonstrated understanding of gender and climate change issues; (05)
			Experience in gender-responsive evaluation and analysis; (10)
			Experience working with GEF or GEF evaluations; (10)
			Experience in project evaluation/revision in the United Nations system or any other international or sub-regional organization (08)
			Experience in implementing assessments at distance will be considered an asset. (03)

2	Communication and languages	15	Proven analytical skills Fluency in English (written and spoken) Fluency in French (written and spoken)
3	Education	15	Principal consultant: BAC+5 level diploma in social sciences, management of model projects for adaptation to climate change, in agro-economics, or equivalent; National consultant: Master's degree in management, environment, climate change, with training supplement in social sciences.
TOTAL		100	

10. EVALUATION ETHICS

The evaluation team will be held to the highest ethical standards and will be required to sign a code of conduct upon accepting the assignment. This evaluation will be conducted in accordance with the principles set out in the UNEG "Ethical Guidelines for Evaluation". The evaluator should protect the rights and confidentiality of information providers, interviewees and stakeholders through measures to ensure compliance with legal codes and other relevant codes governing data collection and data reporting. The evaluator should also ensure the security of information collected before and after the evaluation and protocols to ensure the anonymity and confidentiality of information sources where this is expected.

11. PAYMENT TERMS AND SPECIFICATIONS

Payment for consultants will be as follows:

- 20% of the payment after approval of the inception report;
- 40% after submission of the draft evaluation report;
- 40% after submission of the valuation report.

Criteria to be met to issue the final 40% payment

- EF's final report includes all requirements set out in EF's ToR and follows EF's guidelines.
- EF's final report is clearly written, logically organized and specific to the project concerned (the text has not been copied and pasted from other mid-term evaluation reports).
- The audit trail includes responses and justifications for all comments identified.

12. APPLICATION PROCESS

Recommended process for submission of proposals:

a) Letter confirming expression of interest and availability using the template6 provided by UNDP;
b) Resume and Personal Profile (Form P11)
c) Brief description of the method of work/technical proposal indicating why the individual

believes they are best suited to carry out the assigned assignment, and proposed methodology indicating how they will approach and carry out the assigned assignment; (1 page maximum)

d) Financial proposal indicating the total amount, all costs included, of the contract and any other travel-related expenses (plane ticket, daily allowances, etc.), which will be detailed in accordance with the model in appendix I of the ToR. In the event that a candidate works for an organization/company/institution and provides for the invoicing by his employer of a management fee relating to the procedure for his being made available to UNDP under a reimbursable loan agreement (RLA), the applicant should report it here and ensure that all associated costs are included in the financial proposal submitted to UNDP.

All the documents associated (including the certificates of work, of successful completion, the relevant diplomas and certifications, etc.) to the application must be presented to the address: United Nations Development Program in Benin Lot 111 Residential Zone 01BP 506 Cotonou Tel: + 229 21 31 30 45/46 Fax: + 229 21 31 57 86 in a sealed envelope indicating the following reference "Consultant for the final evaluation of the project "Strengthening the resilience of livelihoods communities and the local governance system, risks and climate variability in Benin-PMSD" or by email to the following address ONLY: (to see the opinion).

Incomplete applications will not be considered.

Evaluation criteria proposals: only applications that meet and comply with the criteria will be evaluated. Bids will be evaluated using a method that combines multiple evaluations – education and experience in similar functions will count for 70 percent and the rate offered will count for 30 percent of the total evaluation. The candidate who obtains the best evaluation, and who accepts the general conditions of UNDP, will be awarded the contract.

Annexe 2: Methodological Approach

Evaluation principles

The consultants used a participatory and consultative approach. This ensured a constant and effective exchange of information with key project stakeholders.

Several basic principles were used to carry out the evaluation:

- **Effective participation** of all stakeholders (government, agencies, donors, private sector, academia and civil society)
- **Crosschecking** of collected information
- Emphasis on consensus and agreement by stakeholders on recommendations
- **Transparency** of debriefing

Approach

The consultants first carried out a desk review, then formulated a checklist (evaluation matrix) of topics/questions according to the evaluation criteria to be examined (evaluation matrix) and prepared the questionnaires/interview guides on this matrix's basis.

The evaluation matrix structures the field mission:

1. **What** information to collect?
2. **Where** to get it (from whom? what different sources of information for triangulation)
3. **How** to obtain it (which appropriate tools? interview, report, focus group, individual interview, statistical data, etc.)?

Briefing meeting

The mission began with a briefing session of the consultant 's team with UNDP. This briefing session took place on October 13, 2022. The objective was to specify the main axis of the evaluation and its scope, the selection of sites to visit and the sampling of stakeholders to meet, contacts to be made, scheduling, logistics and other administrative arrangements before data collection.

This meeting also agreed on the main additional reference documents to be made available to the team of consultants and the product delivery timeframe (mission reports).

Data collection

This was carried out both at the level of the documentary review and through regular methods of collecting relevant project data.

The consultants divided the tasks as follows:

- International: lead in institutional interviews, preliminary report and PPT, drafting of the provisional and final report, audit trail, participation in field interviews (when the internet/telephone connection is suitable)
- National: lead in interviews on project sites, visualization of project achievements, preparation of the field report (that contribute to the preliminary report at the end of the field mission), support for the activities of the international consultant

The triangulation of data leading to reliable information was based on (i) available documents, (ii) interviews and (iii) in-situ observation of achievements.

Documentary review

This involved reviewing available documentation on project design and implementation, UNDP planning documents as well as relevant documents from the Ministry of Development and Coordination of Government Action (MDC), the Ministry of Agriculture, Livestock and Fisheries (MAEP), the Ministry of Living Environment and Sustainable Development (MCVDD), the National Institute of Agricultural Research of Benin (INRAB), the Ministry of Water and Mines (MEM).

Interviews (in Cotonou and project sites)

- Individual interviews with civil servants, UNDP
- Bilateral interviews with project staff
- Semi-structured interviews with institutional beneficiaries / GdB
- Group interviews with final beneficiaries (focal groups)/ by decentralized institution
- Open discussions with partners (cofinanciers, service providers, NGOs)
- Open discussions with resource people/institutions

Given the COVID situation, the mission was carried out on a face-to-face basis for the national consultant and remotely for the international consultant. As far as possible, the international consultant participated in interviews through internet – as far as communication allowed (see evaluation limits). Alternatively, he spoke on the phone (budget provided for this purpose).

Interviews were conducted by the international consultant unless internet/telephone communication. was not sufficiently clear (or impossible) for him to be able to lead the interviews. In this case, the national consultant conducted the interviews.

After several interviews conducted together and for greater efficiency, the consultants also conducted some interviews separately, when for example (i) the appointments had to overlap and (ii) interviews

by internet/telephone were not possible in rural areas. In that case, the international consultant then focused more on institutional stakeholders.

Given that the project had undertaken activities taking gender into account, the national consultant conducted interviews respecting this balance.

The consultants made sure to share information thus collected between each other, in order to be at the same level of data collection.

Visits to project sites

- On-site assessment of achievements/infrastructure (and interviews above)

Given the limited number of sites, it was planned to visit at least (i) each agroecological zone of the project (coastal, centre, north) and (ii) an equivalent selection of villages that benefited or not from NAPA.

Depending on access, distances and time available within a single site, a sampling of stakeholders and achievements was made, taking into account that all categories of stakeholders and achievements had to be seen.

Given that data acquisition always follows a logarithmic curve, it was clear that the first interviews took significantly longer than the last ones, a factor that was foreseen especially for the organization of field visits and interviews with decentralised and final beneficiaries.

Annexe 3: Interview Guides and Questionnaires

A- Standard interview questionnaire with financial partners (UNDP, GEF)

- What is your position and how long have you been involved in PMSD?
- Is the PMSD project relevant in view of national priorities and local and national environmental policies and in view of the GEF objectives in terms of resilience and adaptation to climate change? Why ?
- Can you tell us about how gender and diversity are integrated into the design and implementation of the project?
- To what extent are the indicators and associated targets “SMART” (specific, measurable, achievable, relevant and time-bound)?
- In your opinion, what innovations has the PMSD introduced in terms of resilience, gender and adaptation to climate change?
- How do you assess the provided support? Is it adequate and sufficient for the identified needs?
- Name the three most important factors that contribute to the success of the project?
- What are the three most important obstacles that have hindered the achievement of the project's objectives?
- Are there other climate change adaptation and mitigation, environment, or resilience programs/projects that are working in similar project target areas? If yes, can you tell us about the project (1) the donor, (2) the implementing agency, (3) and what the project seeks to achieve?
- Can you tell us about the structure and management and coordination approach of the PMSD? Adaptive management: give examples of adaptive management based on changing context conditions
- Can you tell us about the quality of Business Planning?
- Can you tell us about the financial management of the project, is the current state of expenditure in line with the implementation of the project?
- What are the main results achieved by the project?
- What are the strengths and weaknesses of the support?
- What has worked well in your opinion since the start of the project?
- What did not work well in your opinion since the start of the project?
- What should have been done better?
- What improvements, what changes would you like in terms of the strategy for implementing the project and the actions to be carried out?
- How did the collaboration between your institution and the project management team work out ?
- How effective were the established partnerships for the implementation of the project?
- Can you tell us how internal communication with stakeholders regarding the project works?
- Can you tell us about the social or political factors that could positively or negatively influence the sustainability of project results and progress towards impact?
- Are the activities promoted by the project likely to continue after GEF and UNDP funding ends?
- To what extent does the maintenance of results and progress towards impact depend on questions relating to the institutional framework and governance?
- Are there any environmental factors, positive or negative, that may influence the sustainability of the PMSD?

- What recommendations would you make to promote the sustainability of the project?
- How do you think you will sustain the achievements of the project within your institution?

B- Model interview questionnaire for the "beneficiaries" of the PMSD project

- What was the nature of the support provided by the project?
- Technical training ? Others ? Specify:

Relevance

- In your opinion, is the project relevant to the needs of Benin and your activities? Why ?
- Is the implementation of the project beneficial for you or your institution

Efficiency

- What are the positive or negative effects that the project has had on your activity or your institution?
- Did you receive the support you needed from the project? Which ones? How was this support actually implemented?
- What does the project need to do differently to achieve the expected results and meet your needs?
- How do you think gender and human rights aspects are taken into account in the content and implementation of the project? Explain your answer further.
- If you could make recommendations on the content and implementation of the project, what would you say?

Efficiency

- How efficient do you think the project is?
- What do you think was achieved with economy of means? (Time and/or resources?)

Effects/impacts

- What are the perceptible changes at the level of the beneficiaries (institutions) in terms of foreseeable institutional change (mainly at the level of convergence, performance and coordination of public policies)? If yes, which ones ? If not, why?
- How has the PMSD improved your community's resilience and reduced its vulnerability to climate change?
- In your opinion, what is the most successful aspect of the PMSD in its activities?
- What do you think is the least successful aspect of the project?

Sustainability/durability

- Is the project viable in the long term, that is to say after the support of UN institutions? Explain?
- If not, what should we do to ensure the viability of the PMSD project?
- Do you think that the achievements of the PMSD project in your community will be sustained after the project implementation ends? If yes, what conditions are necessary for this continuation? If not why ?
-

C- Model interview questionnaire to "other stakeholders" of the project

The other stakeholders include, technical departments, research centers, NGOs and grassroots communities.

Relevance

- To what extent are the project products adapted to the needs of the beneficiaries and in line with national priorities?
- To what extent has the project since its implementation targeted the most relevant beneficiaries?
- Does the project target the major problems of environmental protection, adaptation to the effects of climate change?
- In your opinion, what innovations has the PMSD introduced in terms of resilience, gender and climate change adaptation programs?

Efficiency

- In your opinion, what are the most important achievements of the project?
- Were the expected results (outputs) achieved?
- What are the main reasons for the achievement or non-achievement of the results (outputs)?
- Did the actions undertaken as part of the implementation of the project contribute to indirect results?
- Explain three factors that contributed to the success of the project?
- Explain up to three obstacles that hindered the achievement of the project's objectives?
- Are there other climate change adaptation and mitigation, environment or resilience programs operating in the PMSD intervention areas?

Efficiency

- Is the project implementation efficient in relation to all the investment made (human, material, financial, technical resources)?
- Can you tell us about the structure and management and coordination approach of PMSD?
- Can you tell us about the quality of PMSD activity planning?
- To what extent does the M&E system provide reliable and verifiable data allowing it to take the relevant decisions and adapt the project implementation?
- To what extent does the project have an efficient coordination, partnership and synergy mechanism?
- Can you tell us about the financial management of the project?
- Can you tell us how the internal communication with stakeholders regarding the PMSD works?

Effects/impacts

- What are the consequences (desired results/indirect results) of the project's contribution? How are they explained?
- What is the assessment of the change that the project would have brought to Benin, in particular at the national level, at the level of the targeted regions and among vulnerable populations?
- What is the perceptible effect (as added value) of the project?

Sustainability/durability

- Can you tell us about the social or political factors that positively or negatively influenced the sustainability of project results and progress towards impacts?
- What are the main factors influencing the sustainability or non-sustainability of project results? Have these factors been considered in the planning (exit strategy integrated into the planning)?
- Do the capacity building strategies developed and implemented during the project ensure the viability and sustainability of its results?
- Are the activities promoted by the project likely to continue after GEF and UNDP funding ends?
- To what extent does the maintenance of results and progress towards impact depend on questions relating to the institutional framework and governance?

- Are there any positive or negative environmental factors that may influence the sustainability of the PMSD?
- What recommendations would you make to promote the sustainability of the project?

Annexe 4: Mission Interviews – schedule

Date	Time	Name	Function	Organisation
13/10	11h00	Briefing :		
		Fabrice THYAMOU	Chargé de Cartographie et SIG	PNUD
		Stella COCO	Associée de Programme Suivi-Evaluation	PNUD
		Sylvano NOUGBODE	Spécialiste Suivi-Evaluation	PNUD
		Basile Marius GANDONOU	Chargé de Programmes, Solutions durables et intégrées	PNUD
		Bruno MADEGNAN	Chargé de Programme « Suivi et Evaluation » UGC-UNSDCF	MEF
		Marie-José KOGBETO	Coordinatrice	Projet PMSD
		Gaston OUIKOUN	Chercheur	INRAB
		Elisabeth TOSSOU	Chargée de Programme Environnement	PNUD
		Constant ODOUNFA	Spécialiste Suivi-Evaluation	Projet PMSD
		Eugène DJOSSOU	Chef Division Formulation Projet Direction de la Programmation et de la prospective	MAEP
24/10	16h30	Marie-José KOGBETO	Coordinatrice	Projet PMSD
26/10	09h15	Alastaire ALINSATO	Directeur de Cabinet	MDC
26/10	10h30	Elisabeth TOSSOU	Chargée de Progamme Environnement	PNUD
27/10	17h00	Roger A. TOHOUNDJO	Directeur	CePED
01/11	Matin	Visite village de Senkomi – commune de Bopa		
01/11	12h00	Léopold ALOHOUN	Chef Cellule Communale	ATDA Bopa
01/11	13h15	Cyprien EZIN	Chef du Service Affaires Domaniales et Environnementales / Point Focal PMSD	Mairie de Bopa
01/11	09h20	Visite du village Sèhomi commune de Bopa		
01/11	12h30	Visite village de Agbodji – commune de Bopa		
02/11	10h30	Visite village de – commune de Savalou		

02/11	13h10	Visite village de Damè – commune de Savalou		
02/11	14h00	Marc DEGUENON	TS Diversification / Savalou	ATDA Savalou
03/11	16h00	Hokpongbé Armelle Coralie AHAMIDE	Secrétaire Générale	MDC
04/11	Matin	Visite village de Kadolassi – commune de Ouaké		
05/11	Matin	Visite village de Kpakpalaré – commune de Ouaké		
07/11	11h00	Gaston OUINKOUN	Chercheur	INRAB
08/11	09h00	Radhika DAVE	Conseillère Régionale FEM	PNUD
08/11	10h15	Basile Marius Gandonou	Chargé de Programmes, Solutions durables et intégrées	PNUD
09/11	08h00	Eugène DJOSSOU	Chef Division Formulation Projet Direction de la Programmation et de la prospective	MAEP
09/11	09h00	Kouassi Germain ZINSOU	Coordonnateur de l'UGC-UNSDCF	Ministère Economie et Finances
10/11	Matin	Visite village de Kotan – commune de Avrankou		
10/11	12h00	Fulgence DEGBOHOUET	Chef Cellule Communale	ATDA Avrankou
11/11	09h00	Paulin KPATENON	Chef du Service Environnement, Changements climatiques et EHA / Point Focal PMSD	Mairie Bohicon
11/11	10h30	Aubin Finagnon AHOUASSOU	Chef du Service Développement Local et Planification / Point Focal PMSD	Mairie Avrankou
10/11	Après-midi	Visite village de Bohicon – commune de Bohicon		
14/11	10h00	Nira TEVI	Assistante Expert Adaptation	Project PMSD
14/11	11h00	Léopold ALOHOUN	Chef Cellule Communale	ATDA Bopa
14/11	11h20	Sylvestre GONGORCHAME	Chef Cellule Communale	ATDA Savalou
14/11	11h40	Hermas MEHOBA	Chef Cellule Communale	ATDA Ouaké
14/11	12h00	Constant ODOUNFA	Spécialiste Suivi-Evaluation	Projet PMSD
15/11	13h00	Françoise ASSOGBA	Secrétaire Générale	MAEP
16/11	10h00	Nadege AO	Spécialiste Administration-Finance	Project PMSD
16/11	14h00	Marie-José KOGBETO	Coordinatrice	Projet PMSD
17/11	14h00	Aubin FAFEH	Expert Adaptation	Project PMSD
17/11	17h00	Frank DANDJINOU	Directeur	Fond National Microfinance

23/11	11h00	Isidore AGBOKOU	TL/DDCI	PNUD
24/11	11h00	Debriefing :		
		Irene Mensah AZAGNANDJI		
		Sylvano NOUGBODE	Spécialiste Suivi-Evaluation	PNUD
		Missale WOLDEGIORGIS		
		Radhika DAVE	Conseillère Régionale FEM	PNUD
		Marie-José KOGBETO	Coordinatrice	Projet PMSD
		Gaston OUINKOUN	Chercheur	INRAB
		Roger A. TOHOUNDJO	CePED	MDC
		Augustin CHABOSSOU	Directeur des études du Laboratoire d'Economie Politique	Université d'Abomey-Calavi
		Germain Kouassi ZINSOU	Coordonnateur de l'UGC-UNSDCF	MDC
		Constant ODOUNFA	Spécialiste Suivi-Evaluation	Projet PMSD
		Eugène DJOSSOU	Chef Division Formulation Projet Direction de la Programmation et de la prospective	MAEP
		Elisabeth TOSSOU	Chargée de Programme Environnement	PNUD
19/12	16h00	Augustin CHABOSSOU	Directeur des études du Laboratoire d'Economie Politique	Université d'Abomey-Calavi

Annexe 5: List of Persons Consulted

N°	Structure	First names and family name	Position	Phone	E-mail
1	CePED / Direction Nationale du Projet	Roger A. TOHOUNDJO	Directeur	97216497	antoroge@yahoo.fr
2	Ministère du Développement et de la Coordination de l'action gouvernementale (MDC)	Alastaire ALINSATO	Directeur de Cabinet	97871700	alastaires@yahoo.fr
3	Ministère du Développement et de la Coordination de l'action gouvernementale (MDC)	Hokpongbé Armelle Coralie AHAMIDE	Secrétaire Générale		hahamide@gouv.bj
4	Ministère de l'Agriculture de l'Elevage et de la Pêche	Eugène DJOSSOU	Chef Division Formulation Projet Programme à la Direction de la Programmation et de la Prospective	95553755	finagene@yahoo.fr
5	Unité de Gestion et de Coordination UNSDCF	Kouassi Germain ZINSOU	Coordonnateur de l'UGC-UNSDCF	97174227	GZINSOU@finances.bj
6	Institut National de Recherche Agricole du Bénin	Gaston OUINKOUN	Chercheur INRAB	97489802 / 95561544	ouinkoungaston@yahoo.fr
7	Institut National de Recherche Agricole du Bénin	Césaire GNANGLE	Chercheur INRAB	95 28 21 99	gnanglepaulcesaire2016@gmail.com
8	Université et institut de recherche	Augustin CHABOSSOU		97 98 23 22	achabossou@yahoo.fr
9	Mairie d'Avrankou	Aubin Finagnon AHOUASSOU	Chef du Service Développement Local et Planification / Point Focal PMSD	97374625 / 94482535	ahobededomo@yahoo.fr
10	Mairie de Bopa	Cyprien EZIN	Chef du Service Affaires Domaniales et Environnementales / Point Focal PMSD	97863483	epyzen1983@gmail.com

N°	Structure	First names and family name	Position	Phone	E-mail
11	Mairie de Bohicon	Paulin KPATENON	Chef du Service Environnement, Changements climatiques et EHA / Point Focal PMSD	67045518 / 95182277	kpatpaul@yahoo.fr
12	Mairie de Ouaké (Travaille maintenant à l'Union des Communes de l'Atacora Donga)	Inoussa YOLOU	Ex Chef du Service Développement Local et Planification / Point Focal PMSD	97575668 / 95038173	yolouinoussa@gmail.com
13	Mairie de Savalou (Travaille maintenant à la mairie de Nikki)	Roger AHOSSI	Ex Chef du Service Développement Local et Planification / Point Focal PMSD	97575149	freemanroga@gmail.com
14	Agence Territoriale de Développement Agricole	Hermas MEHOBA	Chef Cellule Communale, Ouaké	97268466 / 95922389	mehermsy@gmail.com
15	Agence Territoriale de Développement Agricole	Léopold ALOHOUN	Chef Cellule Communale, Bopa	96841823	leopoldalohoun@gmail.com
16	Agence Territoriale de Développement Agricole	Sylvestre GONGOTCHAME	Chef Cellule Communale, Savalou	97228830	s.gongotchame@gmail.com
17	Agence Territoriale de Développement Agricole	Fulgence DEGBOHOUET	Chef Cellule Communale, Avrankou	96585552	fulgence.degbohouet@gmail.com
18	Agence Territoriale de Développement Agricole	Marc DEGUENON	TS Diversification / Savalou	66456943	deguenonmarc@gmail.com
19	Agence Territoriale de Développement Agricole	Alain AKPAGNONNIDE	TS Diversification / Bopa	67098217	alainakpagnonnide@gmail.com
20	Programme des Nations Unies pour le Développement	Isidore AGBOKOU	Team Leader DDCI	97649132	isidore.agbokou@undp.org
21	Programme des Nations Unies pour le Développement	Marius GANDONOU	Chargé de Programmes, Solutions durables et intégrées	67612888	gandonoumarius@yahoo.fr
22	Programme des Nations Unies pour le Développement	Elisabeth TOSSOU	Chargé de Programmes	96964508	elisabeth.tossou@undp.org

N°	Structure	First names and family name	Position	Phone	E-mail
23	Programme des Nations Unies pour le Développement	Marie-Josée AKOGBETO	Coordonnatrice PMSD	95 71 38 31/97 11 49 43	kogbetomj@yahoo.fr
24	Programme des Nations Unies pour le Développement	Constant ODOUNFA	Chargé Suivi et Evaluation PMSD	67456907	chevronn1@gmail.com
25	UNDP	Radhika DAVE	Regional Technical Advisor, Nature, Climate and Energy/BPPS		radikha.dave@undp.org
26	Programme des Nations Unies pour le Développement	TEVI Mira	VNU PMSD	66554880	
27	Secrétaire Générale Ministère de l'Agriculture de l'Elevage et de la Pêche	Françoise ASSOGBA épouse COMLAN	Direction Nationale du PMSD	94054105 64060664	
28	Programme des Nations Unies pour le Développement	Nadège AO	Assistante financière PMSD	66766734	
29	Programme des Nations Unies pour le Développement	Aubin KAFEH	Expert en adaptation PMSD	67414027	
30	Fonds National pour la Microfinance	Franck DANDJINOU	Directeur des opérations		
31	Fonds National pour le Développement Agricole	Claude Emmanuel ACAKPO	Directeur Général par intérim	61686808	

People met :

Municipality : Savalou (Avaiankamê)

Municipality : Savalou (Damè) Sita-Dame

Municipality : Bopa (Sita Agbodji)

Municipality : Bopa (Sita Agbodji)

Municipality : Bopa (Site Sehomi)

Municipality: Avrankou (site : Kotan Sita)

Municipality: Avrankou (Site Damnè Kpossou)

Municipality : Onaké (site KADOLAS)

Municipality: Ouake (site : KPAKPAZARE)

Municipality: Bohicon (site: Dakpa – Lissezoun – GNIDJAZOUN)

Annexe 6: List of Documents Consulted

- Project Identification Form (PIF)
- UNDP Inception Plan
- Final UNDP-GEF project document with all annexes
- CEO approval request
- UNDP Social and Environmental Review Procedure (SESP) and related management plans
- Inception workshop report
- Mid-term review report and management response to mid-term review recommendations
- review recommendations
- All Project Implementation Reports (PIRs)
- All annual workplans (AWP) 2018 - 2022
- Progress reports 2018 - 2022
- Selected Monitoring mission reports
- Minutes of project board meetings
- GEF monitoring tools (from CEO approval, mid-term and terminal stages)
- GEF baseline indicators (from FIP, CEO approval, mid-term and terminal stages)
- Financial data (CDR) 2018 – 2022)
- Co-financing data with expected and actual contributions broken down by type of co-financing, source and whether the contribution is considered a mobilised investment or recurrent expenditure
- Audit reports 2018 - 2021
- Electronic copies of project outputs (booklets, manuals, technical reports, articles, etc.)
- Sample of project communication documents
- Socio-economic monitoring data, such as average incomes/employment levels of stakeholders in the target area, variation in income from project activities
- List of contracts and procurement items above approximately US$10,000
- Contacts of organisations or companies contracted for project outputs, etc., except in cases of
- confidential information)
- List of related projects/initiatives contributing to project objectives approved/initiated
- after GEF project approval
- UNDP Country Programme Document (CPD) 2019-2023
- Map of project sites
- List and contact details of project staff, key project stakeholders, including project board members, ATR, project team members and other partners to be consulted
- Project deliverables that provide documentary evidence of the achievement of project outcomes
- Gender reports (Avrankou, Bohicon, Bopa, Ouake, Savalou)
- Vulnerability reports (Avrankou, Bohicon, Bopa, Ouake, Savalou)

Annexe 7: Evaluation questions matrix

Evaluation Questions	Indicators	Source of information
Relevance		
Project strategy: To what extent is the project strategy aligned with country priorities, national ownership and the best way to achieve expected results?		
Sub-questions / themes to be addressed		
Relevance – design • Consistency of project objectives with national development priorities and political, legal, economic, institutional, etc. changes?	• Alignment of the project objective with the national priorities defined in key institutions or expressed by them (MEM, MAEP, CePED)	Documentary analysis PRODOC and national policies, interviews public institutions
• To what extent was the project aligned with the UNDP Strategic Plan, CPD, UNDAF, United Nations Sustainable Development Cooperation Framework (UNSDCF), SDGs and GEF strategic programming?	• Alignment of project results with UNDAF, CPD, SDGs and GEF	Documentary analysis, UNDP/GEF interviews, project team
• To what extent relevant stakeholders have been involved in the project?	• Effective level of co-financing; degree of participation in steering/technical committees, meetings and project activities	CePED interviews, project team and UNDP, member of committees, final beneficiaries; minutes of meetings
• To what extent the project has been formulated based on the needs and interests of all targeted and/or relevant stakeholder groups and to what extent the intervention is informed by the needs and interests of various stakeholder groups? (through extensive consultation)	• Degree of appropriation (or satisfaction) of achievements at project's end (comparison of the needs addressed with the needs identified and prioritized by the GEF/national authorities during the initial consultations) • Extent of relevant needs not taken into account	Institutional and final beneficiary interviews, project team
Coherence		
Extent to which the PMSD project is compatible with other interventions within the country, beneficiary sectors and institutions		
Sub-questions / themes to be addressed		
• To what extent lessons learned from other relevant projects have been taken into account in the design of the project?	• Achievements that take into account lessons learned from previous interventions	Interviews with state institutions and ministries PRODOC
• Risks of duplication of activities compared to other interventions financed in the same project areas?	• Existence of project coordination mechanisms with other external interventions	Interviews with state institutions and ministries

	• Existence of duplication of activities	Project documents, co-financier interview and reference public institutions
• Risks of inefficiency with interventions funded by the implementing partner (CePED)	• Existence of coordination mechanism (number of partnerships) • Evidence of synergies, harmonization of activities with other relevant interventions?	Interviews with state institutions and ministries, project team, UNDP Project documents: annual reports

Effectiveness

Progress towards results: to what extent the expected outputs and objectives of the project have been achieved so far?		
Sub-questions / themes to be addressed		
• What are the factors that contributed to the achievement or not of the expected results?	• Risk analysis (review) + risk change (Atlas) • Degree of involvement of institutions and beneficiaries • Level of CePED co-financing	Review activity reports, PIR CePED interviews, project team, institutional and final beneficiaries
• To what extent the actual results/outputs of the project did correspond to what was planned, in which areas the project did have the most and least achievements and what were the contributing factors?	• Rate of implementation of project activities and measurement of achievement of results • Degree of contribution of co-financing to results achievement	PIR, Steering Committee minutes, interview with project team, UNDP, national institutions and final beneficiaries, interview with co-financiers
• Are relevant national representatives (e.g. government officials, civil society, etc.) actively involved in project identification, planning and/or implementation?	• % of actual / planned co-financing by CePED	CePED interview and project team
• What was the degree of involvement of relevant national government and civil society representatives in project implementation, including as part of the project board?	• Degree of participation in technical/steering committees	Minutes of committee meetings Interviews with national representatives and the project team
• What are the constraining factors, such as socio-economic, political and environmental risks; cultural and religious festivals, etc. and how were they overcome? What alternative strategies would have been more effective in achieving the project objectives?	• Analysis of implementation delays causes • Review/effectiveness of adaptive management measures	PIR, annual reports, project team interviews and CePED
• To what extent the project contributed to gender equality, women's empowerment and a human rights-based approach?	• Degree of appropriation of achievements by women and the most vulnerable populations • Level of participation of vulnerable populations in the definition and organization of project activities	Interviews with the project team, women's groups and MPF
• What was the quality of communication and visibility (towards the donor, external stakeholders and institutional/final beneficiaries)	• Number of communications targeting final beneficiaries, beneficiary institutions and induced effect • Quantity of information on social networks, radio, TV, website (number of hits / viewers)	Interviews UNDP, project team, beneficiaries
• Is there an effective liaison between institutions involved in the project and the project team?	• Existence of an interinstitutional committee	Project team and CePED interview

Efficiency

Project implementation and responsive management: Was the project implemented efficiently and cost-effectively? Has the project been able to adapt to new circumstances, if necessary? To what extent project monitoring and evaluation systems and project communication did support project implementation?		
Sub-questions / themes to be addressed		
• To what extent has there been efficient and economical use of financial and human resources and strategic allocation of resources (funds, human resources, time, expertise, etc.) to achieve results and to what extent funds and the project activities were delivered in a timely manner?	• Number and significance of budget allocation changes / budget revisions • Delays in payment of financial instalments • Number of staff changes / switch from project staff to consultant (and vice versa)	Project team interview, UNDP, CePED PIR, annual reports
• Is the cost of managing the project comparable to that of other projects?	% of the management cost compared to the amount of the project	CDR, PIR Project team interview
• To what extent does the allocation of resources to target groups take into account the need to prioritize the most marginalized people?	• Number of beneficiaries who are recognized as marginalized	Maintenance municipalities, community leaders
• What provision of adequate resources was needed to integrate gender equality and human rights into the project as an investment in short, medium and long-term benefits?	• Number of activities and amounts targeting the most vulnerable people	Project team interview, municipalities
• To what extent the project management structure as described in the project document was effective in generating the expected results	• Review of changes to the project management structure over time	
• Evaluation of the adequacy of the budget compared to the real costs of the project activities within the time limits	• Analysis of the absorption capacity of the Project ("delivery") for the period allocated (comparison of PRODOC budget, PTA and actual)	CDR analysis Project team interview
• To what extent the project's M&E system ensured effective and efficient management of the project?	• Qualification and number of adaptive management measures	PIR, annual reports Project team interview
• What adaptive management measures have been put in place to accommodate changing conditions of the intervention context / within the project and stakeholders	• Qualification and number of adaptive management measures	PIR, annual reports Project team interview

Sustainability and impact

Sustainability: to what extent are there financial, institutional, socio-economic and/or environmental risks for the sustainability of the project results on a long term basis?		
Sub-questions / themes to be addressed		
• What is the likelihood that financial resources will be available once GEF assistance ends to support the continuation of benefits and what is the risk that the level of stakeholder ownership is insufficient to sustain the results/benefits of the project ?	• Degree of integration of the project in the supervisory institutions (municipality / central institutions) • Level of financing of groups of final beneficiaries for the activities supported by the project	Interviews with the project team, municipalities, central public institutions and final beneficiaries
• Are there any social or political risks that could jeopardize the longevity of project results?	• Degree of ownership of results by municipalities and final beneficiaries	Interviews with the project team, municipalities, final beneficiaries
• Is there sufficient public/stakeholder awareness to support the long-term objectives of the project?	• Degree of internalization of project COM messages	Interview beneficiaries and project team
• Are lessons learned documented by the project team on an ongoing basis?	• Existence of a file compiling lessons learned	Project team interview

• Are successful aspects of the project transferred to appropriate parties, potential future beneficiaries and others who could learn from the project and potentially replicate and/or expand it in the future?	• Existence of a mechanism for sharing results and best practices	Interviews with the CePED project team and partners (co-financier or other)
• Are the gender results achieved on a short or long term basis?	• Estimate of the degree of sustainability of gender results	Interview project team and final beneficiaries
• Likelihood of national ownership of results and empowerment/accountability? (Potential) results of the project integrated into national development and sector plans and/or work routines of beneficiary institutions?	• Assess the level of commitment and the capacity of public actors to capitalize on and protect the achievements of the project (integration into work plans, work routines, etc. institutionalization) • Qualification and number of documents amended following the project	Interviews with final beneficiaries and municipalities Project team interviews, public institutions

Cross-cutting issues – gender and rights, and environment

Do the project interventions reach out to the most vulnerable groups and take into account climate change resilience considerations?		
Sub-questions / themes to be addressed		
• Consistency of project objectives with national gender priorities?	• Alignment of the project objective with the defined national priorities of the MPF	Documentary analysis PRODOC and national policies, interviews public institutions
• To what extent gender equity and respect for those left behind has been addressed ("Leave No-one Behind")?	• Analysis of activities and potential effects on marginalized populations	UNDP interviews, project team, beneficiaries in institutions and sector managers
• How the project contributed to the empowerment of women?	• Involvement of female managers in the development of activities / as beneficiaries of capacity building activities	Interviews with the project team, beneficiaries of women's groups and sector managers
• Are there environmental factors and certain project activities that could compromise the future flow of environmental benefits from the project?	• List of Adverse Environmental Effects of the Project	Interviews with NGOs, final beneficiaries and municipalities

GEF additionality

What are the global environmental benefits of the GEF?		
• Added value of the GEF as a donor vis-à-vis the donor community in CCA?	• Specific contributions from GEF (implementation, thematic aspects, intervention methodologies, etc.) to reduce vulnerability and enhance CCA	Interview UNDP, project team, other donors
• To what extent has the intervention achieved or is expected to achieve results (outputs, outcomes and impacts, including global environmental benefits) taking into account key factors that influenced the results?	• Degree of qualification of project achievements among GEF focal areas	GEF and UNDP interview

Annexe 8: Theory of Change

COVID effect in yellow

<table>
<tr><th>Current situation</th><th>(New) barriers</th><th>Planned outputs of the project</th><th>Planned outcomes of the project</th><th>General objective of the project</th></tr>
<tr><td rowspan="3">Benin is especially vulnerable to climate change, because its agricultural sector represents a main source of employment and revenue. Agriculture is mainly rain-fed and thereby vulnerable to altered rainfall patterns that are induced by climate change.</td><td rowspan="3">Insufficient integration of climate risks into the agriculture sector at the national and sub - national development planning (Capacity and institutional barrier)

Technical capacity constraints for climate - resilient water infrastructure design and livelihood support (Knowledge and technical barrier)

Low levels of extension advice for agriculture based livelihood diversification (Technical capacity barrier)

Limited availability and use of information on adaptation options (Information and coordination barrier)

COVID constraint : Beneficiaries unable to take advantage of project benefits (IGAs, agricultural commercialisation)</td><td>Output 1.1: The five targeted Departments and Municipalities and all relevant Ministries have integrated gender responsive climate change adaptation in their planning and budgeting work
Output 1.2: Agricultural extension agents and local NGOs active in the 5 targeted Municipalities are trained on resilience to climate change Output 1.3: Lessons learned are summarized in a repository and shared</td><td>Capacity development
Outcome 1: Climate change and gender are included in development plans and budgets at national and sub- national levels</td><td rowspan="3">To support resilient agriculture, livelihoods and mainstream climate risk considerations into national and sub-national planning processes so that local communities are less vulnerable to climate change.</td></tr>
<tr><td>Output 2.1: At least 9 small scale climate resilient water harvesting infrastructures are designed and implemented in the 9 targeted villages
Output 2.2: Risks of floods and riverbanks erosion are reduced through the stabilization of slopes of critical riverbanks using at least 300ha of bamboo plantations
Output 2.3: Resilient practices, such as drip irrigation techniques or short cycle improved seeds, are adopted by at least 300 households in the five targeted Municipalities ; alternative ways of produce conservation for delayed commercialisation ; support in finding alternative commercialisation channels</td><td>Resilient agriculture investments
Outcome 2: Productive agricultural infrastructure and human skills are improved to cope with altered rainfall patterns
Increased resilience of beneficiaries during crisis</td></tr>
<tr><td>Output 3.1: Targeted population's dependency and vulnerability to climate change effects is reduced through the introduction of alternative livelihoods for approximately 4000 persons
Output 3.2: All women of target population (3,281 women) are trained on alternative livelihoods to agriculture to better cope with climate change impacts
Output 3.3: The capacities of 300 rural entrepreneurs and 50 SMEs (aiming at 50% women) to develop business plans in the field of sustainable craft and small-scale manufacture are strengthened in order to stimulate employment and revenue increase ; additional IGAs to reduce vulnerability during COVID (hydro-alcoholic gel preparation)</td><td>Livelihoods diversification
Outcome 3: communities' adaptive capacity is improved by more diversified income generating activities

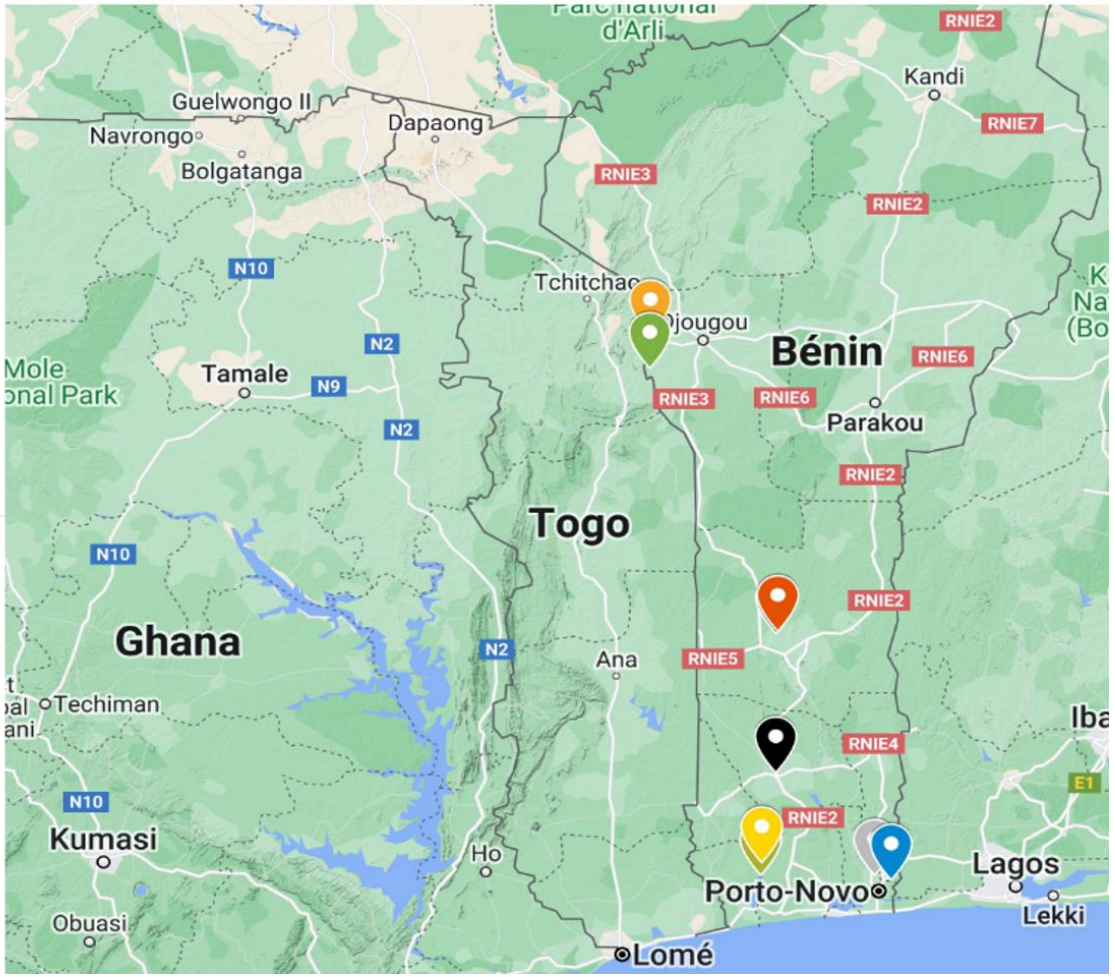
Increased resilience of beneficiaries during crisis</td></tr>
</table>

Annexe 9: Project map

Location of project sites

Coordonnées géographiques.xlsx

- Kpakpalaré (Ouaké)
- Kadolasi (Ouaké)
- Aouiankanmè (Savalou)
- Damè (Savalou)
- Agbodji (Bopa)
- Kotan (Avrankou)
- Danmè-Kpossou (Avrankou)
- Dakpa (Bohicon)
- Sèhomi (Bopa)



Source: project team/UNDP

Annexe 10: Confirmed Sources of Cofinancing

Annexed in a separate file

Annexe 11: Terminal Evaluation Rating Scales

1. Monitoring & Evaluation (M&E)	Rating
M&E design at entry	HS
M&E Plan Implementation	HS
Overall Quality of M&E	HS
2. Implementing Agency (IA) Implementation & Executing Agency (EA) Execution	**Rating**
Quality of UNDP Implementation/Oversight	HS
Quality of Implementing Partner Execution	S
Overall quality of Implementation/Execution	HS
3. Assessment of Outcomes	**Rating**
Relevance	HS
Effectiveness	S
Efficiency	HS
Overall Project Outcome Rating	S
4. Sustainability	**Rating**
Financial sustainability	MU
Socio-political sustainability	L
Institutional framework and governance sustainability	L (municipalities and IGA) U (infrastructures)
Environmental sustainability	ML
Overall Likelihood of Sustainability	MU

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	Sustainability ratings:
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Annexe 12: Brief Expertise of Consultant

Mr Vincent Lefebvre
(lefebvrevinc@gmail.com)

- Programme management & coordination / project formulation & implementation, M&E - knowledge of PCM, logical framework & ZOPP methodologies / equipment specifications.
- MA in tropical agriculture and post-graduation in business administration
- Programme & project evaluation / technical audit / institutional appraisal: analysis of relevance / effectiveness / efficiency / social, institutional & economic impact / political, social & cultural, technological, institutional & financial sustainability / cross cutting issues (gender, AIDS, environment & institutional capacity building); questionnaires design & interviews of beneficiaries.
- Data acquisition methods for evaluations: questionnaires drafting & interviews of beneficiaries; SWOT analysis; (semi-) structured interviews, focus groups.
- Knowledge of monitoring & evaluation methodologies (incl. Management Effectiveness Tracking Tool).
- Food security / Agronomy / agro-forestry / agro-industry / agro-climate and climate mitigation - adaptation / horticulture.
- Cartography / remote sensing / mapping / GIS (Arcinfo, Mapinfo, Ilwis) / Database management systems (MECOSIG, COONGO).
- Land & water resources evaluation / crop potential analysis / participatory rural appraisals / natural resources management / mountain agro-ecosystems.
- Soil survey / soil conservation / soil fertility.
- Statistics including programming in SAS & Delphi.
- Renewable energies (wind, bio-diesel, rape seed oil).

Dr Romaric EHINNOU KOUTCHIKA
Tel: +229 96 08 07 09
(akofoudi2004@yahoo.fr;kouchikaro@gmail.com)

Expertise in project evaluation, climate, sustainable land management, forestry and environmental safeguards, including:

- Mid-term evaluation of the project to promote sustainable biomass electricity production in Benin (Biomass electricity)/UNDP
- Mid-term evaluation of the project "Strengthening the resilience of the energy sector to the impacts of climate change in Benin-PANA Energie/UNDP
- Evaluation of Outcome 3 of the UNDP program (UNDAF Outcome 6) for 2014-2018 period in Benin
- Inventory of potential solutions for adaptation and mitigation to climate change in the cashew and pineapple sectors in Benin (Ministry of Agriculture and Fisheries / PACOFIDE / BM)
- Development of the climate strategy and endogenous measures for adaptation to climate change of PADMAR (Ministry of Agriculture and Fisheries/IFAD)
- Development of local plans for climate change adaptation using local planning instruments to integrate CC into 3rd generation PDCs (municipalities of Boukombé, Copargo and

Toukountouna/UNCDF/PNUD)

- Development of the NAP for forestry and tourism in Benin (UNDP)
- Development of the climate strategy and endogenous measures for adaptation to climate change of PADAAM (Ministry of Agriculture and Fisheries / IFAD)
- Training of senior staff from prefectures/municipalities/town halls on climate finance (UNDP/GCF)
- Development of the PIF of the project “Integrated Approach project for the Restoration and Sustainable Management of Land, Forests and Natural Ecosystems in Benin” (UNDP/GEF)
- Training of staff from ministries and NGOs on Sustainable Land Management and Adaptation to Climate Change (ProSOL/GIZ)
- Training of planning, forecasting and monitoring and evaluation officials as well as sectoral ministries staff at the level of prefectures/municipalities/town halls on the integration of CC into planning/UNDP documents
- Environmental Assessment of projects
- Pedestrian census of wildlife in the W-Benin Cross-Border Biosphere Reserve (PAPE/UNDP)
- Forest inventory and development of the ethnobotanical atlas (PGFTR/BM)
- Baseline study on the biological diversity potential of sacred forests (PIFSAP/UNDP)
- Inventory of the hippopotamus population in the Affon pond in the Ouémé classified forest (PGFTR/BM)
- Management of the classified forests of Dovo, Toffo and Itchèdè (PGFTR/BM)
- Ethnobotanical study of the forests / rônerais of Goroubi / municipality of Karimama, Goungoun / municipality of Malanville and of the classified forest of Sota (PGFTR / BM)
- Analysis of the natural resources behind the production of biomass-energy in the Sound Management of Biomass-Energy and Alternative Energies (GERBES) and the Energy Services Supply Project (PFSE) (Ministry of Energy and Water)

Annexe 13: Evaluation Consultant Code of Conduct and Agreement Form

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken 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 in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals 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 about if 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/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form[28]

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

Name of Consultant: __Vincent LEFEBVRE_____

Name of Consultancy Organization (where relevant)**:** _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed 19/01/2023

Signature: _____

[28] www.unevaluation.org/unegcodeofconduct

Evaluation Consultant Agreement Form[29]

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

Name of Consultant: __Romaric EHINNOU KOUTCHIKA_____

Name of Consultancy Organization (where relevant)**:** _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed 19/01/2023

Signature: _____

[29] www.unevaluation.org/unegcodeofconduct

Annexe 14: Evaluation Report Clearance Form

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: Sylvano Nougbode

Signature: DocuSigned by: Sylvano Nougbode 1601F04B43464CE... Date: 31-Jan-2023

UNDP GEF RTA

Name: Radhika Dave

Signature: DocuSigned by: 981B4CC936A4414... Date: 31-Jan-2023

Annexe 15: Audit trail

Annexed in a separate file