



TERMINAL EVALUATION REPORT

“Adapting to climate change induced coastal risk management in Sierra Leone”

PIMS #5178, GEF ID 5902

GEF Focal Area: Climate Change Adaptation
UNDP/Environmental Protection Agency Sierra Leone

July 27, 2023

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Terminal Evaluation May - July 2023

Acknowledgements

The Terminal Evaluation (TE) Team would like to thank UNDP CO Sierra Leone for the opportunity to undertake this assignment, and contribute to sharing the lessons generated by the “Adapting to climate change induced coastal risk management in Sierra Leone”.

The support provided to the TE team by the project team, namely Project Manager Ms Bintu Moseray and M&E Officer Mr. Ibrahim Mbayoh in making available project documents, assisting in arranging meetings, responding to queries and overall accommodating the needs for TE work under conditions of partial remote/online working was excellent and is much appreciated. Thanks to Mr. Birendra Dash, UNDP CO M&E Specialist for guidance and support. The Project Manager, UNDP CO Sustainable and Local Economic Development (SLED) Team Leader, Ms. Tanzila Sankoh, the Resident Representative Mr. Pa Lamin Beyai, Mr. Muyeye Chambwera, Regional Technical Specialist, CO/RSCSA-Ethiopia, and members of the Project Board took time for in-depth discussions with the TE team, and their insights were invaluable to interpret the achievements of the project.

We would like to express our sincere thanks to all individuals who provided their time and valuable insights during key informant interviews and discussions, namely representatives of all implementing partners, and members of the communities in the project areas. These contributions provided valuable insights and experiences essential to the evaluation.

Table of Contents

Acknowledgements.....	1
Acronyms and Abbreviations	4
1. Executive Summary.....	6
Project Information Table	6
Project Description	7
Evaluation Ratings Table	7
Summary of Findings, Conclusions and Lessons Learned	8
Main Findings.....	8
Conclusions	9
Lessons Learned.....	9
Recommendations Summary Table.....	10
2. Introduction	12
Purpose and Objective of the Terminal Evaluation	13
Scope.....	13
Methodology.....	13
Data Collection and Analysis	14
Document Reviews	14
Key Informant Interviews.....	14
Project site visits	14
Evaluation Questions	15
Evaluation Question Matrix.....	15
Ethics.....	15
Limitations to the Evaluation.....	15
3. Project Description.....	16
Development Context (environmental, socio-economic, institutional, and policy factors relevant to the project objective and scope)	16
Problems that the project sought to address, threats and barriers targeted.....	17
Immediate and development objectives of the project	18
Expected Results	18
Theory of Change	19
Project Start and Duration including Milestones.....	19
Main Stakeholders.....	19
4. Findings	20
Project Design/Formulation	20
Analysis of Results Framework: project logic and strategy, indicators	20
Assumptions and Risks.....	21
Lessons from other Relevant Project incorporated into Project Design, and Linkages to other Interventions within the Sector	21
Planned Stakeholder Participation	22
Gender responsiveness of project design.....	22
Social and Environmental Safeguards.....	23
Project Implementation	23
Adaptive Management	23
Actual Stakeholder Participation and Partnership Arrangements.....	24

Project Finance and Co-finance	25
Monitoring & Evaluation: design at entry, implementation, and overall assessment of M&E	26
M&E design at entry	26
UNDP Implementation/oversight, Implementing Partner execution and overall assessment of implementation/oversight and execution	27
Risk Management and Social and Environmental Safeguards.....	28
Project Results.....	29
Progress towards Objective and Expected Outcomes	29
Relevance	37
Effectiveness	38
Efficiency	39
Overall Project Outcome.....	39
Country Ownership	40
Sustainability.....	40
Gender Equality and Women’s Empowerment	42
Cross-cutting Issues.....	43
GEF Additionality.....	44
Catalytic/Replication Effect.....	44
Progress to Impact	46
5. Main Findings, Conclusions, Recommendations & Lessons	47
Main Findings	47
Conclusions	49
Recommendations	50
Lessons Learned	52
Annexes (attached separately)	

Acronyms and Abbreviations

APR	Annual Progress Report
AWP	Annual Work Plan
CC	Climate Change
CBOs	Community-based organizations
CO	Country office
CSEB	Compressed stabilized earth blocks
CTA	Chief technical advisor
CVA	Coastal vulnerability analysis
CVI	Coastal vulnerability index
CEFCON	Climate Change, Environment & Forest Conservation Consortium (CEFCON-SL)
CIDMEWS	Climate Information, Disaster Management and Early Warning System
CCA	Climate Change Adaptation
DIM	Direct Implementation Modality
EOP	End of Project
EBA	Ecosystem Based Management
ENFORAC	Environmental Forum for Action
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GIS	Geographic Information System
GoSL	Government of Sierra Leone
ICZM	Integrated Coastal Zone Management
ICZMP	Integrated Coastal Zone Management Plan
IPs	Implementing partners
LDC	Least Developed Country
LDCF	Least Developed Countries Fund
LoA	Letter of agreement
M&E	Monitoring and Evaluation
MTR	Mid Term Review
MFMR	Ministry of Fisheries and Marine Resources
MLGRD	Ministry of Local Government and Rural Development
MoYA	Ministry of Youth Affairs
MLCPE	Ministry of Lands, Country Planning and Environment
MWHI	Ministry of Works, Housing and Infrastructure
MRCG	Media Reform Coordinating Group
NDMA	National Disaster Management Agency
NAPA	National Adaptation Programme of Action
NPAA	National Protected Area Authority
NGO	Non-government Organization
NPD	National Project Director
NTB	National Tourist Board
OMS	Oceanographic Monitoring System
PM	Project manager
PB	Project Board
PPG	Project Preparation Grant

PIF	Project Identification Form
PIMS	Project Information Management System
PIR	Project Implementation Report
PMU	Project Management Unit
PPR	Project Progress Report
PSC	Project Steering Committee
PTR	Project Terminal Report
RTA	Regional technical advisor
SDGs	Sustainable Development Goals
SESP	Social and environmental screening process (UNDP)
SLMA	Sierra Leone Maritime Administration
SLMD	Sierra Leone Meteorological Department
SLR	Sea level rise
SLED	Sustainability and Local Economic Development
SLAFU	Sierra Leone Artisanal Fishermen Union
TE	Terminal Evaluation
ToC	Theory of Change
ToR	Terms of Reference
TSC	Technical Steering Committee
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNDP-CO	United Nations Development Programme Country Office
UNEG	United Nations Evaluation Group
UNFCCC	United Nations Framework Convention on Climate Change
UNDP-GEF	UNDP Global Environmental Finance
USL	University of Sierra Leone
USL-IMBO	University of Sierra Leone-Institute of Marine Biology and Oceanography
USD	United States Dollars
VRA	Vulnerability Risk Assessment
VSLA	Village Savings and Loans Association
VHF	Very High Frequency
WA-BICC	West Africa Biodiversity and Climate Change

1. Executive Summary

Table 1: Project Information Table

Project Title:	Adapting to climate change-induced coastal risks management in Sierra Leone		
UNDP Project ID (PIMS #):	5178	PIF Approval Date:	October 10, 2014
GEF Project ID (PMIS #):	5902	CEO Endorsement Date:	October 31, 2017
Award ID:	00102451	Project Document (ProDoc) Signature Date (date project began):	April 19, 2018
Country:	Sierra Leone	Date Project Manager hired:	July 16, 2018
Region:	Africa	Inception Workshop date:	July 19, 2018
Focal Area:	Climate Change Adaptation	Midterm Review date:	February – March 2021
GEF-5 Strategic Programs:	CCA 1,2,3	Planned closing date:	March 2023
Trust Fund:	GEF-5, LDCF	If revised, proposed closing date:	n/a
Executing Agency:	UNDP		
Other Execution Partners:	Environmental Protection Agency SL, Ministry of Fisheries and Marine Resources (MFMR), Institute of Marine Biology and Oceanography (USL-IMBO, National Tourist Board (NTB)		
NGOs/CBOs involvement:	As Secondary stakeholder/implementing partners: ENFORAC, CEFCON, Good Shepherd Ministry		
Private sector involvement:	For consultancy/specialized technical services (INTEGEMS), various contractors for constructions, for media productions/communications (MRCG)		
Geospatial coordinates of project sites:	https://undpgefpmis.org/attachments/5178/214389/1739320/1764166/Project%20Location.xlsx		
Financial Information			
Project	At CEO endorsement (USD)	at Terminal Evaluation (USD)	
1) GEF financing:	LDCF \$ 9,975,000	LDCF \$ 9,945,075	
2) UNDP contribution (cash):	TRAC \$ 190,000	TRAC \$ 190,000	
3) Government (parallel):	\$ 31,610,000	\$ 31,610,000	
4) Others (parallel):			
5) Total co-financing [2+3+4]:	\$ 31,610,000	\$ 31,610,000	
Project Total Cost [1+5]:	\$ 41,775,000	\$ 41,725,075	

Project Description

The coastal zone of Sierra Leone is highly vulnerable to the increased frequency and severity of coastal erosion, flooding and storm surges which severely impact social wellbeing (health), and livelihood security, effecting major economic sectors such as fishing, tourism, water resources and agriculture. The project “Adapting to climate change induced coastal risk management in Sierra Leone” was designed to “Strengthen the ability of coastal communities to systematically manage climate change risks and impacts on physical infrastructure and economic livelihoods” through achieving 3 Outcomes: i) Enhanced availability of high-quality climate risk information that is critical for development decision-making in the coastal zone, ii) Appropriate protection measures, policy, budgeting and legal tools and integrated coordination mechanisms developed to improve and support policy design and implementation in dealing with current and long-term coastal challenges, iii) Public awareness enhanced and climate resilient alternatives to sand mining promoted for better adhesion of policy makers and communities on adaptation. Six demonstration sites were identified based on vulnerability of coastal communities, the magnitude of sea level rise-induced risks of flood and coastal erosion process, and impacts on the livelihoods of local communities, including Conakry Dee in the Kaffo Bullom; Lakka; Hamilton; Tombo; Shenge and Turtle Island.

Evaluation Ratings Table

The evaluation ratings table below consolidates ratings as described in this report, based on the scales provided in Table 9 of the Guidance document for Conducting UNDP/GEF financed Terminal Evaluations (2020), attached as Annex 1 to this report.

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

Summary of Findings, Conclusions and Lessons Learned

Main Findings

The project was designed with active stakeholder engagement, and in line with national priorities, as it contributes directly to implementation of Sierra Leone's NAPA. The project strategy and logic were overall sound, comprehensively addressing the barriers identified to coastal risk. Design weaknesses were in unrealistically low-cost estimates for goods and services to implement certain activities, and in an ambitious time frame.

The project has achieved its objectives in “strengthening the ability of coastal communities to systematically manage climate change risks and impacts on physical infrastructure and economic livelihoods” and exceeded four of the seven output level targets. Key achievements under component 1 include the installation of 5 weather stations¹, and the data generated covering all 6 project locations. Their server systems is linked to CIDMEWS enabling transmission of data and exchange between the Sierra Leone Oceanographic Monitoring System (OMS) and existing Sierra Leone Meteorological Agency EWS network and the global monitoring network. Support and software licensing supported until December 2024. The project procured and installed an ocean buoy at the Water Quay, Sierra Leone's main natural harbor to gather data on a range of weather variables such as wave height, swell period and direction, wind speed and direction, air and water temperature, and barometric pressure transmitting it to the wider population.

Under component 2, the Coastal Vulnerability Analysis (CVA) by INTEGEM, and studies by EPA on coastal erosion rates, coastal assets, SLR scenarios, adaptation projects and sargassum dynamics, and an Ecosystem Based Approach (EBA) manual provide a wealth of data to inform ICZM planning. Under EPA leadership, a new National Coastal Regulations has been drafted and is awaiting enactment through parliament. Four coastal districts have reviewed² their councils plans to integrate ICZM in development planning.

Under component 3, local government technical staff in four Local Councils have improved their capacity to provide ICZM information to their communities. The project provided support to 10 youth groups, previously engaged in sand mining, to adopt alternative climate-resilient livelihoods. These included training on improved fishing technologies coupled with the provision of fishing boats, outboard engines and fishing gears; construction of solar-powered cold rooms, raised platform and fish processing facilities constructed across project locations. This has helped prevent post-harvest losses and increase the profit/income base of fisher folks/women. Other youths/women were trained in vocational skills and given startup kits. Also, youths were trained in plastic recycling and waste management and provided with startup grants and kits. Village Saving and Loans Associations (VSLAs) were established in the six project locations, with 822 beneficiaries. Each group was provided with \$3,000 equivalent in Leones. Most VSLA groups are active, with success stories particularly in Lakka and Hamilton. Finally, 600 ha of degraded mangrove area have been restored in 4 pilot sites (Conakrdee, Tombo, Shenge, Turtle Island) to protect coastal communities and infrastructure at risks. The provision of a rescue boat is an important and first of

¹ Five weather stations were installed, and our are currently operational since 1 was destroyed by a storm in Lakka.

² Port Loko, Bonthe, Moyamba and Western Rural Districts

its kind support to increase maritime safety by enabling search missions and rescue operations in rough seas.

These achievements were made despite significant challenges in the early phase with procurement of highly specialized equipment, delays caused by COVID-19 related restrictions, temporary staff shortage of the PMU, and in the face of a very complex project design with numerous activities under each output, and five primary and further secondary implementing partners to coordinate.

Conclusions

Feedback in discussions, on-site findings and documentation speak for achievements of the project and the success of the integrated approach. The project has created a strong foundation to build on, it has developed enabling conditions to advance coastal risk management, making forecast data available, developing the policy framework and building capacity. Public awareness has been enhanced, gender sensitive climate resilient alternatives to sand mining have been promoted, and scalable models for tourism have been created that include infrastructure/eco-lodges, skill development, nature tourism activities, waste management, and environmental protection/mangrove conservation. The potential to develop sustainable tourism as an adaptation strategy has been tapped into.

Despite the success stories and community support, follow-up support will be needed to enable beneficiaries to fully realize the potential of new livelihood strategies; further trainings and facilitation is needed. Likewise, technical capacity building among local government and technical agency staff is needed to ensure the technical infrastructure provided by the project is maintained and used to its full potential. O&M plans need to be elaborated with all IPs, and sustainability agreements concluded. Community government structures have been established, for mangrove/woodlot management and in livelihood groups; O&M committees have been initiated, but need consolidation. Follow-up funding is needed to consolidate, strengthen and scale up the project results.

Lessons Learned

There were delays in project implementation because landowners came forward to claim land where the project was planning to build. The project then turned to local government authorities to allocate land. The lesson is that it's a good practice to work with the relevant government authority for land use during project design to determine which land is to be used for project activities.

Project design did not establish realist budget estimates for all activities that considered the true costs of goods and services and all required logistics and labor, and factored in inflation rates. The lesson is to make budget allocations, for all planned activities, with careful consideration of all involved costs including that for labor, services, and to factor in anticipated inflation rate to the degree possible.

The project's integrated approach was crucial to address the barriers and threats holistically; however it did not consider how much time processes take to build community participation, ownership, strengthen community organizations and to develop capacity to realize benefits from new livelihood strategies, as well as for policy development. The project time frame therefore was ambitious to build sustainability for all results. Design should consider the process orientation and allow enough time for it.

The establishment of a Technical Committee, comprised of technical experts of each Implementing Partner helped to bring IPs on board for planning, implementing and coordinating activities under overall PMU coordination. With their own staff involved in planning, IPs follow-up of commitments improved, and it was a mechanism that lent legitimacy to the plans to be approved by the Project Board. The combination of Technical (Experts) Committee representing all IPs and the Project Board as oversight body made for an efficient and effective mechanism for activities planning, implementation and monitoring and also enhanced inter-agency collaboration and coordination as an important step towards sustainability of project achievements.

The project team, with IPs, made a concerted effort at the initial stage of the project, to hold local inception meetings and thoroughly introduce the project objectives and planned activities to local leadership and communities. Involving local government and community leaders was crucial for planning local activities appropriately, based on local needs and opportunities, for dissemination of project related and early warning information, and for ensuring adherence to by-laws for the protection of natural resources. In this context, local focal points were another crucial element to coordinate and oversee activity implementation at the project sites. They provided the needed linkage between beneficiaries and the project to plan and monitor implementation with local stakeholders.

The evaluation found that support by local communities for the project was strong, which is a key prerequisite to sustain and scale up project results. This local community support could be secured because the project linked climate change adaptation with livelihood strategies that generated tangible results, namely the support to access to finance through VSLA that lead to successful small business development.

Recommendations Summary Table

Rec #	TE Recommendation	Entity Responsible	Time frame
A	Category 1: Consolidating achievements and promoting sustainability		
A.1	Each IP, with PMU support, further consolidate O&M plans with all stakeholders, defining roles and responsibilities in management and monitoring (of agency staff, and/or community organizations, local leaders) ensuring facilities/equipment is used by beneficiaries as intended, defining and budgeting for maintenance costs, identifying remaining capacity building needs, determine further needs in technology transfer and capacity building to consolidate and sustain project achievements, to be included in follow-up project proposals. Make O&M plans public for transparency. Present in completion workshop.	IPs with UNDP support	Before financial closure, ASAP
A.2	Complete hand-over of all assets provided by project ³ (infrastructure, equipment), and conclude sustainability agreements based on O&M plans with IPs and stakeholders.	UNDP	Before financial closure, ASAP

³ Project assets in 3 (Shenge, Turtle Island and Conakrdee) of the 6 project locations have been handed over to the beneficiaries and stakeholders

B	Category 2: Strengthening community governance for livelihood strategies and natural resource management		
B.1.	Undertake post project impact assessment including a) survey to assess capacities (skills, knowledge, awareness) as baseline for follow-up project, b) develop best strategies for replication/scaling up; Include in strategy for sustainability the most successful community based mechanisms identified during implementation, including local champions for scaling up	UNDP with IPs, youth/womens groups	2023
C	Category 3: Knowledge Management		
C.1.	Document and share project achievements and lessons learnt, for different audiences, broadcast/print/online media/events. Ensure all knowledge products and technical reports are accessible and relevant stakeholders and public is informed that they are available.	UNDP	2023
D	Category 4: Link beneficiaries to financial mechanisms		
D.1.	As part of scaling up livelihood support, Link with microfinance and business incubation service providers to further support climate-resilient alternative livelihoods, including SMEDA's "Munafa Fund" aiming to benefit 50,000 small and medium businesses nationwide, working through local financial service providers. https://politicosl.com/articles/le100-billion-small-business-loan-scheme-sierra-leone , and local small business incubation services social enterprise Sensi-Tech-Sierra Leone, targeting young entrepreneurs (https://sensi-sl.org/about-us/)	UNDP	2023/24
E	Category 5: Link to community based approaches in climate finance		
E.1	Explore opportunities to link/work with private sector to access climate change adaptation and mitigation funding for small businesses and technologies such Plan Vivo (https://www.planvivo.org/) and Acumen Fund Inc. (https://acumen.org/), for accessing carbon market schemes working with/benefiting communities	UNDP	2023/24
F	Category 6: Develop follow-up concept notes and proposals, and/or include follow-up activities in proposals under development.	UNDP	2023/24
F.1	Elements of follow-up should include: a) Scaling up of successful project results and best practices (expand weather stations along coast, mainstreaming ICZM in local development planning, youth and women groups for alternative, climate resilient livelihoods, use of radio and other appropriate media for awareness raising, eco-tourism development, community-based restoration and conservation of natural resources) b) Further strengthen local/community-based governance structures for Mangrove protection and restoration in the face of overlapping roles of local governing institutions, and lack of clarity as to who manages coastal resources leading to overexploitation, and for other natural resources (wood lots) c) Technology transfer as identified by IPs, and related capacity building d) Tourism Development (linking infrastructure development to skills training and protection of coastal and marine resources that reflect the values that attract visitors; include relevant agencies responsible for conservation and protected areas)		

	<p>e) Further support groups (youth/women) in enterprise development (vocational skills, financial management, organizational development)</p> <p>f) Activities that could not be completed in the time frame and budget of this project including CESB, bathymetric survey, strengthen collaboration among NDMA and other agencies and develop SoP (Standard Operation Procedures) to upload EW data and make available to agriculture and other sectors, coastal protection measures namely city beaches Freetown.</p>		
G.	<p><u>Link with agencies implementing and developing projects that can provide follow-up support</u>, to include certain elements in ongoing proposal development by other agencies.</p>		
	<p>Options to include elements in ongoing proposals are:</p> <p>a) (LDCF/UNIDO) project on “Fostering climate change adaptation through entrepreneurship in Sierra Leone” and opportunities to access the GEF-funded Adaptation SME Acceleration Project (ASAP)’s support to small businesses, with the creation of a new online marketplace in collaboration with Sierra Leone’s Small and Medium Enterprise Development Agency (SMEDA). https://www.unido.org/stories/fostering-climate-adaptation-through-entrepreneurship-sierra-leone,</p> <p>b) Save the Children Fund – project concept note development to GCF</p>		

2. Introduction

The coastal zone of Sierra Leone is highly vulnerable to the increased frequency and severity of coastal erosion, flooding and storm surges which severely impact social wellbeing (health), livelihood security (and water resources) and major economic sectors such as fishing, tourism, water resources and agriculture. Coastal communities are already experiencing considerable repercussions of these impacts, notably on their livelihoods with reduced fishing productivity, ecosystem degradation and low farming outputs. The limited accessibility of climate-related data limits the ability of decision-makers to make informed planning and policy decisions for the coast (in particular marine and sea parameters databases such as wave height, wave period, wind speed and direction), and to take any clear strategic actions to remedy these negative effects. This inadequate lack of knowledge is contributing towards undermining social and economic development, particularly under a changing climate.

The United Nations Development Programme (UNDP), with funds from the Least Developed Countries Fund (LDCF) has been implementing a Full-Size Project (FSP), “*Adapting to climate change-induced coastal risks management in Sierra Leone*”, for five years (April 2018-March 2023) along the coastal zone, in six different pilot sites (Conakry Dee, Lakka, Hamilton, Tombo, Shenge and Turtle Island). This project was designed to support Coastal communities’ resilience to climate change induced risk on physical assets and economic livelihoods.

Purpose and Objective of the Terminal Evaluation

The complementary purposes⁴ of Terminal Evaluations for GEF-financed projects are to assess and document project results, and the contribution of these results towards achieving GEF strategic objectives aimed at global environmental benefits; to synthesize lessons that can help to improve the selection, design and implementation of future UNDP-supported GEF-financed initiatives; and to improve the sustainability of benefits and aid in overall enhancement of UNDP programming; to promote accountability and transparency; to gauge the extent of project convergence with other priorities within the UNDP country program, including poverty alleviation; strengthening resilience to the impacts of climate change, reducing disaster risk and vulnerability, as well as cross-cutting issues such gender equality, empowering women and supporting human rights.

The main objective of the TE was to assess the extent of project accomplishments, achievements against expectations, and progress towards quantitative targets as defined in the results framework, as well as overall sustainability of the project results, bearing in mind the specific economic and political context of Sierra Leone.

Scope

The scope of the TE, as prescribed in the ToR, was to assess project performance against expectations set out in the project's Logical Framework/Results Framework, and specifically evaluate the indicators and targets to i) ensure that the indicators captured in the Results Framework are SMART (Specific, Measurable, Attributable, Relevant, Time-bound and Timely) and ii) assess the achievements for each indicator against the target.

The evaluation covered the entire project implementation period from April 2018 to the time of the TE in May/June 2023, and all three intended outcomes of the project. Document reviews and key informant interviews sought to assess achievements against targets, challenges and lessons learnt across all interventions supported by the project. All discussions had an emphasis on relevance of the project and significance of the project outcomes. Assessing sustainability mechanisms and identifying remaining needs to strengthen these, as well as the identification of the most successful and impactful interventions were other key elements.

Key informant interviews on national level were arranged so as to capture the perspectives and experiences of all project implementing partners from government and non-government sector and academia, members of the project board and PMU. The perspectives of local stakeholders and of beneficiaries were captured in key informant interviews and group discussions during the field visits to all project locations by the national evaluator.

Methodology

The TE team applied primarily qualitative tools and techniques in order to fulfil the primary purpose and objectives of the TE of assessing relevance, efficiency, effectiveness, sustainability and impact, to identify lessons learnt during project implementation and to formulate actionable recommendations.

⁴(http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf)

Quantitative tools were applied in evaluating field visit data, to measure achievements towards targets, drawing on M&E records and any project data made available to the TE team by the PMU.

Data Collection and Analysis

Document Reviews

The review of documents, along with discussions in the introductory meeting for the TE with the PMU, and a presentation by the PMU on outcome level achievements provided the starting points for the TE team to further assess progress, implementation challenges, success factors and sustainability aspects. The PMU made available a package of documents on project design and implementation progress, annual planning documents, minutes of meetings of project board meetings, reports by implementation partners, workshop reports, monitoring visit reports, knowledge products, co-financing documentation, M&E and quality assurance documents, training documentation, outputs such as draft policy documents. A list of reviewed documents is included as Annex 2.

Key Informant Interviews

Semi-structured interviews with key informants at national and sub national level were a key tool to learn about perspectives on project implementation, achievements, progress towards impact, and the sustainability of outcomes. Discussions with leadership and staff of implementing partner organizations were important steps in the TE to gain an understanding on the contributions of the project to infrastructure for climate monitoring, early warning capacity, supporting policy development implementing new policies in the six target locations; on successes and failures and the reasons thereof; on remaining needs for building capacities, collaboration and institutional arrangements, implementing policies, maintaining infrastructure, and providing follow-up to further support livelihood strategies initiated by the project.

A total of 63 individuals (39 males and 24 females) were consulted during the TE, including 23 online from national level IPs (EPA, NTB, Min. of Fisheries and Marine Resources, Ministry of Environment, National Disaster Management Agency, SLMA), academia (IMBO, Fourah Bay College/Geography Department), NGO IPs (ENFORAC, Good Shepherd Ministry), Project Board, PMU, and UNDP CO team and leadership, Regional Technical Specialist, CO/RSCSA-Ethiopia, and 39 in-person (1 by phone) at project site level from among local council members, local community leaders, group members and other beneficiaries. The list of individuals who provided their input in key informant interviews is included as Annex 3.

Project site visits

The national evaluator visited the project locations Lakka/Goderich, Hamilton, Tombo, Conakry Dee, and Shenge between May 27 and May 30. Turtle Island was not visited because the sea was rough at the time of the visit; however, an interview with the project focal person for Turtle Island (Mr. Ishmael Baromi) was conducted. At all visited locations, focus group discussions with beneficiaries were conducted, and key informant interviews with local focal points and government representatives held. The names of all 40 individuals consulted are listed in Annex 3; they include 9 from Conakree Dee (8 M/1F), 7 from Tombo (2M/5F), 10 from Shenge (7M/3F), 5 from Hamilton (2M/3F), and 8 from Lakka/Goderich (1M/7F).

Selected sites of infrastructure provided by the project and activity sites were visited including jetty at Shenge, shops/enterprises by VSLA members at Hamilton and Lakka, cold room and fishing boats at Shenge, waiting platform at Tombo, and mangrove restoration areas in Shenge. The field visit locations and project activities are included as Annex 4.

Evaluation Questions

Evaluation questions were developed according to the type and level of involvement in the project – national/sub national implementing partners, community/beneficiary level - and addressed the topics of project relevance/design, effectiveness of implementation, impacts and sustainability. The questions also addressed gender sensitive design of the project and activities and the participation, benefitting and empowerment of women. The list of guiding questions drafted for key informants of project management, oversight and implementing partners is attached as Annex 5; the guide for conducting local level meetings and focus group discussions is attached as Annex 6.

Evaluation Question Matrix

The Evaluation Question Matrix (EQM) provided in Annex 7, guided the design of the evaluations, and other data collection tools, to ensure all required elements of a TE for GEF funded projects were covered. As per ToR, the EQM was developed for the criteria: Relevance, Effectiveness, Efficiency, Sustainability, Impact, Gender Equality.

Ethics

The evaluation was conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluation'⁵ and the TE team members adhered to the required ethical standards and both consultants accordingly signed a code of conduct upon acceptance of the assignment (Annex 8).

The TE team in their data collection activities observed protocols to safeguard the rights and confidentiality of information providers, interviewees and stakeholders, to ensure security of collected information before and after the evaluation, maintain the anonymity and confidentiality of sources of information. The information and data gathered in the evaluation process will be solely used for the evaluation and not for other uses without the express authorization of UNDP and partners.

Limitations to the Evaluation

Minor limitations to the evaluation work were in the time frame, as the response to the TE team by key informants to schedule interview appointments was somewhat slow initially. A representative of CEFCON was not available as KI as recommended by the project team. However, a large enough, representative sample of target communities and stakeholders were consulted. A few minor problems occurred with internet connectivity issues and clarity of audio; but otherwise, online meetings are an efficient way to

⁵ <http://www.unevaluation.org/document/detail/100>

conduct KIIs. Limitations due to the fact that the international consultant was working remotely were more than compensated thanks to the expertise and support of the national team member.

3. Project Description

Development Context (environmental, socio-economic, institutional, and policy factors relevant to the project objective and scope)

Sierra Leone is one of the poorest countries in sub-Saharan Africa and globally, with a GDP per capita of US\$499 in 2017. The overall poverty rate in Sierra Leone is 57 percent, with 10.8 percent of the population living in extreme poverty^{6,7}.

Sierra Leone's economy are minerals (diamonds, iron ore, rutile, bauxite), fisheries, tourism, agriculture, and manufacturing. The economy is vulnerable as major export revenue depends on commodity prices, the changes of which are externally controlled. Fisheries activities are a primary livelihood for 500,000 people, a main source of animal protein for over 80% of the population and contribute about 10% of GDP. Fish processing and living in extreme poverty (Government of Sierra Leone 2019); 49% of people in Sierra Leone are considered food insecure⁸. The population is around 7.4 million (2018), and population growth is rapid; 40 % of Sierra Leone's population are youth, and unemployment is high among low and semi-skilled youth.⁹

Major sectors of the marketing is led primarily by women, similar to agriculture, making women's work more climate sensitive (Government of Sierra Leone, 2018). Sierra Leone has been ranked¹⁰ as the third most vulnerable country (after Bangladesh and Guinea Bissau) to impacts of climate change globally, with the least capacity to respond or adapt, and is among the most highly vulnerable African countries to the increasing frequency of climate change impacts.¹¹ Already, the impacts of extreme weather events have been devastating with substantial loss of lives, livelihoods and infrastructure during floods and landslides in 2016/2017. Over 1000 lives were lost alone in August 2017 due to massive landslides. In addition, warming oceans and acidification are leading to increasing rates of coral mortality, with negative implications for fisheries, tourism, biodiversity and livelihoods. Sea level rise has already led to the encroachment of saline water into aquifers and coastal areas, threatening coastal settlements.

Limited access to the latest knowledge and technology, and wider poverty and development challenges are further increasing the country's climate vulnerability. These factors will increase Sierra Leone's exposure, sensitivity and lower its adaptive capacity, and in turn vulnerability, to future climate impacts if they remain unattended. Climate change could create serious risks for all sectors; tourism is also threatened by annual seaweed invasions of the country's beaches. Unless action is taken to address these vulnerability issues, the chances for economic development are severely limited.

⁶ National Adaptation Plan, 2021 Government of Sierra Leone,

⁷ Sierra Integrated Household Survey

⁸ Comprehensive Food Security and Vulnerability Analysis (CFSVA 2015- MAFFS/WFP/FAO)

⁹ Climate Change Policy (2022) document

¹⁰ based on the 2013 Verisk Maplecroft Index

¹¹ Fifth Assessment Report of the Intergovernmental Panel on Climate Change (AR5 IPPC)

Climate change models project that temperatures will continue to increase, that sea levels and the height of storm surges will rise, while the average annual precipitation will decrease and the proportion of heavy rainfall events will increase. This will exacerbate adverse social, economic and environmental impacts and act as an additional stress factor on systems with vulnerabilities derived from non-climate drivers. Climate change will alter the characteristics of hazards Sierra Leone is exposed to (e.g. average annual rainfall) and the nature of variability (e.g. more intense storms, irregular seasonal rainfall), which will cause associated knock-on consequences for the country's socio-economic development objectives.

It is estimated that by 2030 Sierra Leone could be exposed to cumulative annual flood-related losses totaling US\$200 million and that an extreme event similar to the serious flooding in 2016, which resulted in losses equivalent to 60% of GDP, could result in some US\$1.2 billion in losses and harm to more than 5000 people.¹² Recent vulnerability studies indicate that the agriculture sector will see a decrease in crop yields due to temperature increases, frequent flooding and salinization of soils. Furthermore, coastal and touristic infrastructure and housing stock in the coastal zone will likely suffer increased damage from more intense floods, storm surges and sea level rise. Sierra Leone has started to combat the adverse effects of climate change, and the project's contribution, relevance and significance are to be seen against this background.

Problems that the project sought to address, threats and barriers targeted

The coastal zone of Sierra Leone is highly vulnerable to the increased frequency and severity of coastal erosion, flooding and storm surges which severely impact social wellbeing (health), and livelihood security, effecting major economic sectors such as fishing, tourism, water resources and agriculture. Coastal communities are already experiencing considerable impacts, notably on their livelihoods with reduced fishing productivity, ecosystem degradation and low farming outputs. The limited accessibility of climate-related data such as wave height, wave period, wind speed and direction limit the ability of decision-makers to make informed planning and policy decisions for the coast and to take any clear strategic actions to address negative effects. This inadequate knowledge is contributing towards undermining social and economic development.

The three project components/outcomes were designed to address what had been identified as the key barriers to reduce the vulnerability of coastal communities to climate risks including a) the limited accessibility and use of data and information relevant to understanding coastal related climate risks, b) inadequate institutional and policy capacities for Integrated Coastal Zone Management (ICZM), c) limited awareness on coastal related climate risk and human activities along the coast; d) inadequate resources and financial constraints. The expected outcomes were:

1. Enhanced availability of high-quality climate risk information that is critical for development decision-making in the coastal zone.
2. Appropriate protection measures, policy, budgeting and legal tools and integrated coordination mechanisms developed to improve and support policy design and implementation in dealing with current and long-term coastal challenges.
3. Public awareness enhanced and climate resilient alternatives to sand mining promoted for better adhesion of policy makers and communities on adaptation.

¹² National Adaptation Plan, 2021, Government of Sierra Leone

Immediate and development objectives of the project

The formal objective of the project was to “strengthen the ability of coastal communities to systematically manage climate change risks and impacts on physical infrastructure and economic livelihoods”.

Project objectives are fully aligned with and contribute to national priorities including obligations under international conventions, namely priority actions under Sierra Leone’s National Communications to UNFCCC. The project directly supports the implementation of five priority interventions (2, 4, 14, 16, 17) under the country’s National Adaptation Programme of Action (NAPA).

The development objectives contributed to the UNDP Country Programme outcomes at the time of design, namely to UNDAF Outcome 1 (By 2018, targeted Government institutions, the private sector, and local communities manage natural resources in a more equitable and sustainable way) and 2 (By 2018, targeted communities demonstrate decreased vulnerability and increased resilience to natural and man-made disasters), and to UNDP Strategic Plan Outputs 1.3, 1.4, 1.5, and 2.5).

This project is consistent with GEF’s Strategy on Adaptation to Climate Change for the LDCF, using LDCF resources to provide coastal risk information to policy makers and communities to better guide coastal development planning and erosion management (CCA-2.1 outcome) and to mainstream adaptation within coastal development plans to enable smart investment in the adaptation sector (CCA-1.1 outcome). The project conforms to the LDCF’s eligibility criteria, namely: i) undertaking a country driven and participatory approach; ii) implementing the NAPA priorities; iii) supporting a “learning-by-doing” approach; iv) undertaking a multidisciplinary approach; v) promoting gender equality; and vi) undertaking a complementary approach.

Expected Results

The expected results for Component 1 were i) Climate and oceanographic monitoring network (with 6 automated oceanographic monitoring systems) and related data processing systems installed along the coastal zone to improve the knowledge base for measuring future climate induced risks, ii) capacity of MFMR, EPA-SL, SLMD/A, ONS, SLMQ and USL-IMBO for assessing coastal hazard risk and vulnerability to climate change through probabilistic modelling is strengthened, iii) A systematical link between the collected data and the existing CIDMEWS (web based GIS) is established, iv) The human capacity of the MFMR, EPA-SL, MLGRD is strengthened, skilled and trained on CVA techniques.

For Component 2, planned results included i) Sea Level Rise and coastal erosion profiles developed for the six target pilot sites to support the strengthening of Coastal Zone Management Plans at both urban and district levels, ii) Ecosystem based adaptation design guidance to support future climate resilient planning and development in place, iii) Marine spatial plan framework to compliment with ICZM is developed, and iv) Sierra Leone ICZM is strengthened with the establishment of SL-ICZM-WG and sustainability mechanisms.

For Component 3, results to be generated were i) An outreach communication, information and awareness strategy designed and implemented to enhance decision-making and foster public awareness and safety about the potential impacts of climate change, ii) Adaptation strategies for alternative livelihoods are designed to strengthen women and sand miner youth association’s resilience to CC impact on the coastal zone so as to reduce pressure on natural resources, iii) CSEB practices are introduced to mitigate the risk of unregulated sand mining in Sierra Leone, iv) Participatory implementation of urgent

and priority medium-scale soft (non-structural) and hard (structural) coastal adaptation works undertaken to protect coastal community at risks, and v) Early Warning Systems are extended to target sites in the coastal zone to protect fishing and farming communities.

Theory of Change

A Theory of Change was not explicitly developed for the project, however the project's strategy is well grounded in the context of socio-economic and environmental vulnerability and based on a sound logic by comprehensively capturing the threats barriers, and stating assumptions and risks. The pathways to achieve the development objectives are well defined with detailed activity descriptions, under the hierarchy of objectives of overall project objective, outcomes, and outputs.

Project Start and Duration including Milestones

The project commenced in April 2018 (Project Document signed) following a preparation period with extensive stakeholder consultations. The project implementation period was planned for 5 years, with the project closing date set for March 2023. An inception workshop with implementing partners and other key stakeholders was held July 19, 2018, to establish a common understanding of project design, results framework and of reporting and M&E requirements. The event confirmed the project organization structure and partnerships, and the mechanisms and responsibilities for implementation, guidance and oversight. Following the inception workshop, preparatory meetings were held at all project sites to build local understanding and ownership of project objectives and implementation arrangements. A mid-term review, with an original target date of October 2020, was conducted from February to March 2021. The Terminal evaluation was conducted from May to June 2023; with the planned closing date in July, ¹³2023.

Main Stakeholders

Key stakeholders and partners in project implementation were the Environmental Protection Agency-Sierra Leone (EPA- SL), the Ministry of Fisheries and Marine Resources (MFMR), the Institute of Marine Biology and Oceanography (IMBO) and the National Tourist Board (NTB). Project formulation identified secondary stakeholders from government ¹⁴ and non-government organizations ¹⁵ whose support would be required for implementation. Of these, the Ministry of Youth Affairs, the Sierra Leone Meteorological Agency, the National Disaster Management Agency, and the Ministry of Environment, and the NGOs CEFCON, Good Shepherd, and ENFORAC became further implementation partners. Local councils play an important role in introducing climate resilience into local development planning and working closely with the local communities and CBOs. These local partnerships and their activities were coordinated by local project focal points. Local community leaders/chiefs played a crucial role in disseminating information,

¹³ Agreed work plan as per Inception Report

¹⁴ including The Sierra Leone Meteorological Department (SLMD/A); The Disaster Management Department (DMD); The Ministry of Local Government and Rural Development (MLGRD); The Sierra Leone Maritime Administration (SLMA); The Ministry of Youth Affairs (MOYA); The Ministry of Lands, Country Planning and Environment (MLCPE); The Ministry of Works, Housing and Infrastructure (MWHI); National Protected Area Authority (NPAA).

¹⁵ including The Environmental Forum for Action (ENFORAC); The Climate Change, Environment & Forest Conservation Consortium (CEFCON-SL); Sierra Leone Artisanal Fishermen Union (SLAFU); and The West Africa Biodiversity and Climate Change (WA-BICC)

creating project ownership and promoting sustainable natural resource utilization and adherence to by-laws.

4. Findings

Project Design/Formulation

Analysis of Results Framework: project logic and strategy, indicators

The overall project logic was well defined and justified based on the context analysis and identification of barriers, with the three project components/outcomes designed to address key threats and barriers to climate change adaptation (CCA) and coastal risk management comprehensively. Project design is clear and logical, with outputs designed to contribute to the three outcomes and activities detailed to achieve each output. The three project components complement each other, and they reflect the integrated, holistic approach that is a strength of the design, considering needs in scientific data collection and dissemination, technology transfer, policy development and inter-agency coordinating mechanisms, as well as infrastructure development and capacity building.

Importantly, the design builds on lessons learned from previous projects in Sierra Leone that failed to link the creation of tangible livelihood benefits to adaptation measures and natural resources restoration and conservation.¹⁶ Project design dedicated a separate study to the assessment of opportunities and challenges for alternative livelihood options. The project design addresses the needs of the most Vulnerable, the coastal communities bearing the brunt of extreme weather events, youth and women, as well as remote, marginalized communities that the project reached out to.

In the country context of limited financial and technology capacity within government agencies and local authorities the project design was very ambitious. However, stakeholders involved in the design process intentionally had set the bar high so as to promote capacity building through technology transfer and a “learning by doing” approach and by using the resources and opportunities provided by the project to strengthen institutional capacities. Still, the planned time frame to achieve the intended results fully was planned very short considering the process orientation required for policy development, and for introducing alternative livelihood strategies and enable community groups and individuals to develop their skills and establish their enterprises to a sustainable level. Another design flaw was the underestimation of costs for activities and procurement; this was mentioned by nearly all key informants as a major implementation challenge. Budget estimates did not reflect real life costs of labor, services and equipment and did not factor in inflation rates sufficiently. For certain activities, logistics and maintenance requirements were not considered in costs, such as vehicle support to reach installation sites.

The results framework overall captured the project strategy, with well-defined output level targets to guide implementation and measure progress. A weakness was in objective level indicators and baselines. The first objective level indicator was formulated as “percentage change in vulnerability of youth and

¹⁶ An example is the USAID funded project in Sherbro estuary. https://news.mongabay.com/2022/12/in-sierra-leones-fishing-villages-a-reality-check-for-climate-aid/?utm_source=pocket_saves

women living in the pilot sites to climate change induced risks threatening the coastal zone” and a language error expressed an increase instead of decrease of vulnerability in the target formulation, was addressed as recommended by the mid- review evaluator. Also, the indicator/target design relied on the CVA to define the baseline against which to measure percentage change in vulnerability, however the CVA defined socio-economic and environmental vulnerability indices for all project locations instead, a parameter that may be utilized for future assessments of change.

Following the recommendation of the MTR the results framework was updated in December 2021, introducing as an objective level indicator “ Number of new inclusive partnership mechanisms with funding for sustainable management solutions of natural resources, ecosystems services at national and/or subnational level” and to modify the Outcome 1 indicator so as to measure “Number of coastal communities covered by operational climate/weather and marine monitoring stations (OMSs) in the 6 pilot sites for improved weather observation to generate quality climate risk information” instead of the original “Percentage of coastal area in the 6 communes covered under improved observation to generate quality climate risk information.” The 2021 update also introduced language into the results framework to emphasize gender disaggregated M&E reporting.

Assumptions and Risks

The risk analysis (Annex 1 in the Project Document) expanded on the risks mentioned in the PIF, listing organizational, strategic, operational and environmental risks and identifying mitigation measures. The analysis was realistic, based on previous experiences such as security issues for installations, taking into account potential delays in release of funds, potentially greater than expected climate change impacts and the very barriers of limited technical capacity that the project is designed to address. Risks were classified according to UNDP/GEF Risk Standard Categories, and assessed according to criteria of ‘impact’ and ‘likelihood’ as LOW. The review of the risk analysis during the inception phase did not trigger changes in risk level assessment and mitigation approaches, and the risk analysis as per project document was adopted for project implementation.

Lessons from other Relevant Project incorporated into Project Design, and Linkages to other Interventions within the Sector

Project design built on lessons and capacities developed under recent and ongoing national and regional projects, namely i) UNDP_GEF “Building Adaptive Capacity to Catalyze Active Public and Private Sector Participation to manage the Exposure and Sensitivity of Water Supply Services to Climate Change” which strengthened the network of rainfall stations and increased human resource capacities of SLMA to provide climate change related information, ii) UNDP “Strengthening Climate Information and Early Warning Systems for Climate Resilient Development and adaptation to climate change” which improves national capabilities to generate and use climate information in the planning for and management of climate induced hazard risks.

The Climate Change Data Management System (CC-DAMAS) established under the UNDP – EWS will help generate extreme weather data and information to produce vulnerability and risk maps; warning information, based on the tailored forecasts, developed under the EWS project was to be used to design

the public outreach activities under component 3. In the early project phase ¹⁷, a coastal climate change adaptation plan was developed and validated in collaboration with USAID funded WA BiCC project. The plan will serve as basis of elaborating ICZM at nation and district levels. ¹⁸ The project also continued to fund a radio series highlighting the risks of climate change to coastal peoples¹⁹ which had been initiated by WA BiCC.

Planned Stakeholder Participation

The stakeholder engagement process for the project design was based on the same participatory process used for the preparations of Sierra Leone's NAPA (2007) which facilitated multi-disciplinary integration and included all levels of stakeholders from local community members to professionals from different sectors. Project design assigned roles and responsibilities of key partners in project implementation.

Project design determined the following primary stakeholders as implementing partners: EPA-SL, the Environment Protection Agency of Sierra Leone was determined as the main Responsible Party for the project, coordinating activities under Outcome 2. USL-IMBO, the Institute of Marine Biology and Oceanography, Responsible Party for the project and will coordinate the activities linked to Outcome 1. MFMR, the Ministry of Fisheries and Marine Resources and NTB, the National Tourism Board jointly responsible for implementation of activities under Component 3.

Secondary Stakeholders were deemed necessary to support project implementation; from government, these included: The Sierra Leone Meteorological Department (SLMD/A); The Disaster Management Department (DMD); The Ministry of Local Government and Rural Development (MLGRD); The Sierra Leone Maritime Administration (SLMA); The Ministry of Youth Affairs (MoYA); The Ministry of Lands, Country Planning and Environment (MLCPE); and The Ministry of Works, Housing and Infrastructure (MWHI); and the National Protected Area Authority (NPAA).

To ensure that inception phase consultations capture the perspectives of minorities, women and youth, less vocal groups and stakeholders who may not have been present during project preparation, and that issues related to gender are addressed, the following NGOs and CBOs were identified to engage in certain activities at the project sites. These included The Environmental Forum for Action (ENFORAC); The Climate Change, Environment & Forest Conservation Consortium (CEFCO-SL); Sierra Leone Artisanal Fishermen Union (SLAFU); and The West Africa Biodiversity and Climate Change (WA-BICC).

Gender responsiveness of project design

In line with LDCF eligibility criteria, the project design promotes gender equality and includes a gender analysis. Its findings are that 1) Women and men are differentially impacted by climate change/variability, which is related to the current power relations and differentiated roles in the communities; 2) Women have access to, but not control over, natural resources and other property rights; 3) While women do most of the reproductive and part of the productive work, men are only responsible for productive work

¹⁷ Project Implementation Review 2019

¹⁸ <https://www.wabicc.org/sierra-leone-validates-climate-change-adaptation-plan-as-stakeholders-prepare-for-action/>

¹⁹ <https://www.wabicc.org/en/wa-bicc-and-undp-scale-up-entertainment-education-efforts-to-increase-coastal-resilience-to-climate-change-in-sierra-leone/> and <https://www.pcimedia.org/coastal-resilience-to-climate-change-in-sierra-leone/>

in the communities. Climate change effects lead to an out-migration of men from the coastal target communities, increasing women's workload further but also women's participation in decision making.

The project is assigned Gender Marker 2 (gender equality as significant objective) and its outcomes are expected to contribute towards an understanding of how adaptation responses can be designed to strengthen gender equality. Therefore, design prescribes that women attend workshops and contribute to the decision-making process regarding pilot study intervention options, community based CIEWS, and also the composition of community management committees. In addition, the project conducted a gender sensitive training, which focused on how to better communicate and disseminate climate related hazards or warning techniques to vulnerable communities. The results framework is designed to report gender disaggregated data on beneficiaries.

Social and Environmental Safeguards

The UNDP Social and Environmental Screening Procedure (SESP) was duly undertaken. Based on the small to medium scale coastal developments and coastal protection infrastructure to be established at the project pilot sites, the overall social and environmental risk category for this project was justifiably classified as "Low" as it is not likely that project activities will have any medium to long term and/or irreversible impacts, and the low to moderate risk of the proposed construction of coastal protection structures can be sufficiently managed. Project design details five key factors that justify the Low-Risk classification.

As the project addresses the needs of the most Vulnerable, the coastal communities bearing the brunt of extreme weather events, youth and women, as well as remote, marginalized communities; the project is designed to leverage social and environmental opportunities and is guided by the principle of "leave no one behind".

SESP highlighted the design and implementation of some categories of small scale rural coastal infrastructure and installation of extended fishing landing points for further review by LPAC meetings and follow up by the UNDP Environment Unit, as these constructions require feasibility studies in each of the project pilot sites.

Project Implementation

Adaptive Management

The project practiced adaptive management in several respects, responding to implementation challenges related to procurement delays and recruitment/replacement of PMU staff, but also in creating synergies and introducing best practices from other project where it was appropriate though not exactly prescribed in the Project Document. The UNDP country office, namely the SLED cluster, provided support to the PMU in procurement tasks which were complex given the highly technical equipment to be bought to the exact specifications provided by the relevant IP. Further support was provided by the Regional Procurement Office. Country office made staff support available during periods (up to 6 months) when M&E and finance/administrative officers' replacement to the PMU took time following due process for hiring.

Based on her previous experience in project implementation and community development, the PM applied adaptive management to meet local needs, using lessons from other projects, creating synergies,

and maximizing use of resources within the given design and operational framework. Examples for this are i) following the MTR observation that youth and sandmining groups had been trained in savings and loan schemes but not started alternative livelihood businesses yet due to lack of resources, and the recommendation that this be acted upon soon, the support to strengthening VSLA with women's groups in the pilot areas which was to become one of the most well received measures by beneficiaries as a key strategy for business development, ii) the creation of abridged versions of coastal regulations to be introduced to communities, and iii) the use of available funds to support 2 instead of 1 ecolodge as planned.

Adaptive management was also practiced by IPs, when circumstances required it and when opportunities arose. Examples are the finally selected sites for weather stations to optimize security and safety, the delay and planned shifting of CEBS activities to locations where raw material was more readily available, and the actions taken by ENFORAC resulting in exceeding the 500 ha target of mangrove restoration.

Actual Stakeholder Participation and Partnership Arrangements

During the project design phase, comprehensive stakeholder consultations were held, in a series of workshops closing with a validation workshop, and in individual consultations and field visits. The meetings determined the roles and responsibilities of stakeholders in project implementation, an overview of which was included in the Stakeholder Engagement Plan in the Project Document, and as outlined above.

The national inception workshop (July 2018) consolidated the consensus on stakeholder involvement and fine-tuned their specific roles in project implementation and oversight. The workshop assured that SLMA was included in the Technical Committee as the key government agency responsible for climate data collection, interpretation and dissemination. However, roles and responsibilities in implementation as originally defined did not in any case match the actual mandate of the IP, for example the NTB was tasked also with mangrove restoration which should have been the responsibility of another government agency, or relevant NGO.

The PMUs' approach to hold local inception meetings in the pilot areas to introduce the project to local stakeholders, to acknowledge and involve local leaders (chiefs) along with local government authorities, and the emplacement of local focal points were key to building generally strong buy-in from the communities and local project ownership. Representation of all key implementing partners in the project board was likewise conducive to maintain a high degree of stakeholder collaboration. As evidenced in the record of Minutes of Meeting of PB and by the achieved results, all national stakeholders fully supported the project throughout implementation and fulfilled their agreed roles and responsibilities.

Civil society participation, the importance of which had been emphasized in the Inception Workshop, made key contributions in mangrove restoration and in community development work, namely the introduction of VSLA schemes at project pilot sites. At project completion, also the private sector is being approached as the project is seeking to establish sustainable mechanisms for the operation of the Eco Lodges by private sector investors.

PIRs did not report any changes to the Stakeholder Engagement Plan, and stakeholder participation in implementation was in line with the plan, the IPs for the components being the EPA-SL, USL-IMBO, and MFMR with NTB, respectively. Further key stakeholders involved in Component 1 implementation were

the Sierra Leone Meteorological Department (SLMD/A) and The Disaster Management Department (DMD). The project collaborated with The National Disaster Management Agency (NDMA) and capacitated District Disaster Management Committee (DDMC) including stakeholders in the six coastal communities on Early Warning Management Systems. The project also collaborated with Ministry of Local Government and Rural Development (MLGRD); The Sierra Leone Maritime Administration (SLMA); The Ministry of Youth Affairs (MOYA); The Ministry of Lands, Country Planning and Environment (MLCPE); and The Ministry of Works, Housing and Infrastructure (MWHI); National Protected Area Authority (NPAA), and The Sierra Leone Navy.

From the non-government sector, the Environmental Forum for Action (ENFORAC) was a key partner for mangrove restoration, and the project collaborated with Climate Change, Environment & Forest Conservation Consortium (CEFCO-SL); Sierra Leone Artisanal Fishermen Union (SLAFU); and the Good Shepherd Ministry. The Media Reform Coordinating Group (MRCG) was contracted to undertake an outreach campaign in the six coastal project communities on causes, effects and jointly developed solutions to address climate change risks.

Project Finance and Co-finance

Total project finance was USD 41,775,000. Co-financing to the USD 9,975,000 by LDCF was provided by the GoSL in a total amount equivalent to USD 31,610,000 through several baseline projects including the “Economic Diversification to Promote Inclusive Growth” and the “Managing Natural Resources” programs (USD 4,150,000) under the Agenda for Prosperity, and the “National Platform for Disaster Risks Reduction in Sierra Leone” (USD 27,160,750), and through a further contribution of USD 299,250. In a letter of April 21, 2017 the GoSL committed to the co-finance and confirmed the contributions through office space and infrastructure for implementation, and salaries for the project coordinating team at EPA. With the TRAC funding contribution of USD 190,000 by UNDP, total co-finance was USD 31,800,000.

With initial challenges in procurement of technical instruments and delays in the release funds and approval of work plans due to required procedures and with activity delays due to COVID-19 restrictions, delivery rate was low in the early project phase. However, as per the PIR (2022), cumulative GL delivery against total approved amount was 69.78% as of June 30, 2022, and at time of TE inception (May 2023), the cumulative GL delivery rate at project completion (end of April 2023) was 99,7 %. UNDP TRAC resources were released as planned.

Three agencies (EPA, MFMR, NDMA/OND) were mentioned for co-financing in the project document. EPA and MFMR provided their calculations for in-kind contributions in the template provided to them by the project in 2022. As NDMA is a new agency, transformed from ONS since project inception, their calculations were still under process at the time of TE as the new agency’s leadership had not been cleared on the co-financing arrangements.

Monitoring & Evaluation: design at entry, implementation, and overall assessment of M&E

M&E design at entry

The Project Document's M&E plan prescribes that the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards, that mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF M&E policy, and that in addition to these, other M&E activities deemed necessary to support project-level adaptive management will be defined during the Project Inception Workshop.

Key M&E activities required by GEF include annual monitoring of results framework indicators as a basis for the GEF PIRs, monitoring of risks, regular site visits/supervision missions by the PM, project reviews and appraisal of AWP by the PB, a MTR and TE. Implementing partners are to ensure that project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used by and generated by the project supports national systems.

M&E implementation

Key M&E activities have been executed as per design throughout project implementation, including Inception workshop (July 2018) at national level, project site level inception meetings, annual reviews of results framework indicators, submission of PIRs (2019 – 2022), supervision missions/site visits by PM, M&E officer, CTAs and SLED Cluster Lead of the UNDP CO, MTR (2021) and TE (May/June 2023). Key documents required according to the M&E plan were included in the documentation made available to the TE by the PMU.

The position of M&E officer was not filled for a period of approximately 6 months. This caused temporary challenges to the access to and maintenance of the M&E data base; however the current (at time of TE) M&E officer has retrieved M&E data and the TE team received a data base on project beneficiaries, annual M&E plans, AWP, PIRs including 2022 and a populated results framework updated to the status of project completion, documentation of workshop/training attendance, Minutes of PB Meetings (Jan. 21, 2020, Feb. 4, 2021, Sept. 16, 2021), BTOR following field visit, Implementation Stage Quality Assurance Reports, IP activity reports and other photo/video evidences. Records of training and meeting attendance are gender disaggregated and detail participation of persons living with disabilities.

While the PMU experienced staff shortages during a 6 months period, (M&E officer and admin/finance officer), the PM was not able due to the additional workload to undertake regular monitoring visits to project sites, and this was compounded by COVID-19 travel restrictions for some time; however the presence of local focal points to communicate with on progress and challenges and reports by IPs provided sufficient information for these periods. It should be noted that the number of partners for implementing activities and the extraordinary high number of planned activities under the three components alone presented a considerable challenge for project management and monitoring.

The UNDP Quality Assurance Report (2021) concludes that “the project has a comprehensive and costed M&E plan. Baselines, targets and milestones are fully populated. Progress data against indicators in the project's RRF is being reported regularly using credible data sources and collected according to the frequency stated in the Plan, including sex disaggregated data as relevant. Any evaluations conducted, if relevant, fully meets decentralized evaluation standards, including gender UNEG standards.” Progress

measured for the GEF Core Indicators relevant to the project was duly Reported. The detailed table is provided as separate Annex 13.

As objective level indicators were not well defined as outlined above to measure reduction in vulnerability, M&E design at entry was rated as moderately satisfying. And due to the described challenges in M&E implementation (i.e. M&E officer position not filled, and few monitoring field visits by PM feasible during this time, and as IPs lacked sufficient staff resources for project activity M&E, implementation of M&E was rated moderately satisfactory

The rating for M&E at entry, during implementation and overall is shown in the table to the right.

Monitoring & Evaluation (M&E)	Rating
M&E design at entry	Moderately Satisfactory (MS)
M&E Plan Implementation	Moderately Satisfactory (MS)
Overall Quality of M&E	Moderately Satisfactory (MS)

UNDP Implementation/oversight, Implementing Partner execution and overall assessment of implementation/oversight and execution

UNDP delivered effectively on all activities related to project identification, preparation and appraisal, as evidenced in the quality of documentation (PIF, ProDoc, LPAC meeting), the documented process of stakeholder consultations, and the overall design of highest relevance and meeting national priorities, thus creating strong project ownership. Throughout implementation, UNDP CO showed a high level of responsiveness to implementation problems, and provided effective and timely support to the project team and implementing partners. This was evident when UNDP CO and the Regional Procurement Unit supported the PMU in procurements that needed to meet technical specifications and after release of funds had been delayed; the changeover from ATLAS to a new system posed further challenges. The UNDP CO used different fast track procurement modalities to increase the project delivery in 2022, resulting in abovementioned delivery rate of 99.7 % at project completion (May 2023). Key reporting formats, such as PIR, reflected candor and realism in reporting, highlighting implementation delays.

The project team worked with technical experts of Implementing Partners to develop annual work plans, to be presented to the steering committee for further review and endorsement. To ensure accountability, the project team also engaged the project board and discussed project achievements, implementation challenges and other issues related to the project. Stakeholders were also consulted at the community levels; the local project focal points played a key role to maintain direct interface with the community stakeholders, to promote transparency and accountability and put in place a grievance redress mechanism.

Letters of Agreement (LoA) were signed in 2022 with key implementing partners, including EPA, NTB, NDMA, MFMR, and ENFORAC, detailing activities and expected results as contributions towards project targets as laid out in the results framework. Based on all documentation reviewed with regard to procedures, standards, safeguards, and key events pertaining to project initiation, design,

implementation/oversight, UNDP support is assessed to be of high standard. This notion was confirmed in meetings during the TE with project team and implementing partners, despite grievances relating to lengthy procedures for releasing funds and arranging procurements to which UNDP is bound.

In the early project phase to 2019, despite collaborative efforts, the project team was challenged with coordination among project partners, and realization of commitments posed challenges to IPs in fulfilling both their primary mandates and project implementation responsibilities. To address some of the challenges, the project team formed a technical steering committee representing relevant stakeholders to improve coordination and collaboration among IPs and to increase their understanding on the project. Also, the project team requested the head of these institutions to appoint technical focal persons responsible for delivering project outputs to enhance commitment among IPs. The mechanism of the technical committee first reviewing project implementation and challenges on a monthly basis, before presenting issues to the project board for final decision proved beneficial to streamline and speed up implementation.

UNDP Implementation/Oversight & Executing Partner	Rating
Quality of UNDP Implementation/Oversight	Highly Satisfactory (HS)
Quality of Implementing Partner Execution	Satisfactory (S)
Overall quality of Implementation/Oversight and Execution	Satisfactory (S)

Risk Management and Social and Environmental Safeguards

During the PPG phase, projects risks were updated from those presented at the PIF stage. A revised risk analysis was presented in Annex 1 of the Project Document. The following risks were identified:

Insufficient institutional engagement and coordination may prevent successful project delivery especially in the current context, in Sierra Leone; Lack of qualified personnel within the USL-IMBO and EPA-SL to operate and maintain new equipment, data transmission/treatment/storage processes and forecasting models; Procurement and installation of equipment is delayed due to slow release of funds; lengthy administration processes and deficient data transmission systems locally; Early Warnings do not reach local radios in the communities and local Radios are not capacitated to receive and broadcast early warnings; Youth and Women Association, NGOs/CSOs participating in the activities of adaptation through engagement in alternative income generative livelihoods are not willing to cooperate, Equipment installed in the coastal sites (weather and marine tidal gauging system with telemetry) may be stolen and/or vandalised threatening the success of the functioning of Coastal EWS; and Impacts of Climate Change are greater than expected. Through the very implementation of project activities these identified risks are no longer valid at the end of the project, except the last risk regarding impacts of climate change, however all project activities were designed and executed to combat the impacts of climate change.

In the SESP (Annex 10 in Project Document), Potential Social and Environmental Risks were identified as low. Based on the small to medium scale coastal developments and coastal protection infrastructure to be established at the project pilot sites, the overall social and environmental risk category for this project is classed as “Low”. PIRs have duly reported on changes to the potential of social and environmental risks and on the management responses. The 2021 PIR states that “The rate of flooding in most of the project communities is increasing which may lead to destruction of project assets, households and community members infrastructures and assets. The project is currently working with implementing partners to reduce this risk through beach embankment, rehabilitation of degraded mangrove areas and planting of economic trees in the affected areas.”

Construction of small scale rural coastal infrastructure were proceeded by feasibility studies in each of the project pilot sites. At the time of TE, an ESIA report for the fish processing facilities at the project locations including the skill training centre under construction had been reviewed by the project team and was being finalized by the consultant.

Project Results

Progress towards Objective and Expected Outcomes (*)

Despite the significant challenges in the early phase, and following a slow start, the project has achieved end-of-project targets for all seven measurable indicators on objective and outcome level, and surpassed them for four of them. Details on progress towards project objectives are documented in the table below, assessing achievements towards targets for each outcome.

Indicator	Baseline	End-of-Project-Status	End-of-Project Target
Objective	Strengthen the ability of coastal communities to systematically manage climate change risks and impacts on physical infrastructure and economic livelihoods		
Number of new inclusive partnership mechanisms with funding for sustainable management solutions of natural resources, ecosystems services at national and/or subnational level.	Zero (0)	Six (6) inclusive partnerships in the coastal pilot sites for adaptation management solutions, with sustainability plans in place.	Six (6) inclusive partnerships in the coastal pilot sites for adaptation management solutions, with sustainability plans in place.
Assessment of Achievement	Partnerships have been established at each pilot site; local councils are taking a more inclusive approach, integrating ICZM principles in working with local communities and their leaders, and the youth/women’s groups established with project support.		

Number of direct project beneficiaries, disaggregated by gender (youths and adults).	Zero (0)	61,366 (Male 32,068 = 52 %; Female 29,298 = 48% beneficiaries are registered as project beneficiaries and are involved in adaptation measures.	At least 58,000 women and youths are registered as project beneficiaries and are involved in adaptation measures by the end of project.
Assessment of Achievement	Target achieved & surpassed. 61,366 (Male 32,068 = 52 %; Female 29,298 = 48% beneficiaries including youth (CCA and livelihood strategies), plus 11,410 (5,135M, 6,276F) beneficiaries (2 jetties) project beneficiaries and are involved in adaptation measures.		
Outcome 1	Enhance the availability of high-quality climate risk information that is critical for development decision-making in the coastal zone.		
1.a. Number of coastal communities covered by operational climate/weather and marine monitoring stations (OMSs) in the 6 pilot sites for improved weather observation to generate quality climate risk information.	Zero (0)	Six (6) coastal communities are covered by operational climate/weather and marine monitoring stations (OMSs) in the six targeted sites.	Six (6) coastal communities are covered by operational climate/weather and marine monitoring stations (OMSs) in the six targeted sites.
Assessment of Achievement	<p>Target achieved. Five (5) weather stations (WSs) were installed, and the information generated covers all 6 project locations (at Lakka (1) - covers Lakka; at Goderich/Funkia (2) – covers Hamilton and Goderich; at Targrin, Lungi (3) (covers Conakry Dee; at Bonthe Island (4) covers Turtle Island; and at Shenge (5) that covers Shenge, Tombo).</p> <p>The project procured and installed an ocean buoy at the Water quay, Sierra Leone’s main natural harbor to gather data on a range of weather variables such as wave height, swell period and direction, wind speed and direction, air and water temperature, and barometric pressure transmitting it to the wider population.</p>		
1.b Number of people with access to high-quality climate risk information and early warnings in targeted communities. - At least 50% are women		At least 5,500 people (2,860 women/52%) in target communities have access to high-quality climate risk information and early warnings.	At project end, at least 5,500 people in target communities have access to high-quality climate risk information and early warnings. - At least 50% are women

Assessment of Achievement	Target achieved. 5,500 (2,860 women/52%) in target communities have access to high-quality climate risk information and early warnings.		
Outcome 2	Develop appropriate gender sensitive protection measures, policy/legal tools and integrated coordination mechanisms to improve /support policy design and implementation in dealing with current and long-term coastal challenges.		
2.a. Number of ICZM plans that integrate climate change induced risks and vulnerability.	Zero (0)	At least 3 ICZM plans or policies integrating climate change induced risks and vulnerability are in place awaiting enactment by parliament.	5 ICZM plans or policies integrating climate change induced risks and vulnerability are in place.
Assessment of Achievement	Target achieved. 5 ICZM plans or policies (Integrated coastal and marine regulation (2022) (National); Action plan for coastal protection measures, Ecosystem Based Adaptation (EBA) guidance manual, Coastal Climate Change Adaptation plan, and the Marine Spatial Plan and Implementation framework), have been developed for enactment in parliament. In addition, 4 districts reviewed their councils plans for integration of: The Nationally Determined Contribution (NDC), the National Adaptation Plan (NAP) and the National Climate Change Strategy and Action Plan (NCCSAP) into their District development Plans.		
Outcome 3	Public awareness enhanced and gender sensitive climate resilient alternatives to sand mining promoted for better adhesion of policy makers and communities on adaptation		
3a. Number of technical officers and policy makers skilled to conduct awareness raising campaigns to disseminate knowledge on Integrated Coastal Zone Management (ICZM), Climate Change Vulnerability Assessment, and Sectoral and Livelihood Adaptation Planning issues in the six coastal districts.	Zero (0)	A total of 489 (M:399; F:90) Local Government technical staff in four (4) Local Councils; Portloko, Bonthe, Moyamba and Western Rural Districts have been capacitated through EPA to increase their knowledge to disseminate information on ICZM.	At least 50 technical officers and policy makers (25% Women) skilled to conduct awareness raising campaigns on Integrated Coastal Zone Management (ICZM), Climate Change Vulnerability Assessment, and Sectoral and Livelihood Adaptation Planning issues in the six coastal districts.
Assessment of Achievement	Target achieved & surpassed. However, 18.4% are women (below the targeted 25%).		

3b. Number of youth and sand mining groups previously engaged in sand mining adopt alternative climate-resilient livelihoods.	Zero (0)	At the end of the project, at least 10 youth groups youth and sand mining groups have adopted alternative livelihoods. 26 VSLA groups established. CESB scaled down.	At the end of the project, at least 10 youth and sand mining groups have adopted alternative livelihoods and 90 masons and 90 block makers produce and use CSEB for construction.
Assessment of Achievement	Target achieved & surpassed in numbers of beneficiaries. Adjusted strategies (VSLA introduced; CESB scaled down). 10 youth groups with fishing boats, outboard engines and fishing gears. Vocational skill training to 516 (M=30, F=486) youths/women with start startup. 293 (M=166, F=127) youths trained in plastic recycling and waste management 26 Village Saving and Loan (VSLA) established in the six project locations comprising 822 (M=252, F=570) beneficiaries. In total, 1,631 (M=448, F=1,183) beneficiaries previously engaged in sand mining, mangrove cutting have benefitted from interventions.		
3c. Number of ha of mangrove restored in the six pilot sites to protect coastal community and infrastructure at risks.	3c. Zero (0)	3c. 600 ha of degraded mangrove area have been restored in the six pilot sites to protect coastal community and infrastructure at risks.	3c. By the end of project 500 ha of mangrove restored in the six pilot sites to protect coastal community and infrastructure at risks.
Assessment of Achievement	Target achieved & surpassed. 600 ha of degraded mangrove area have been restored in 4 pilot sites (Conakridee, Tombo, Shenge & Turtle Island) to protect coastal community and infrastructure at risks; with overall survival rate of 79%. Hectares restored: Turtle Island 142 (80 % survival rate), Shenge 122 (78 %), Tombo 162 (87 %), Conakridee 174 (71 %).		

Progress towards Outputs

Details on progress and key activities successfully implemented are provided below for each project output.

Output 1.1. Climate and oceanographic monitoring equipment (eg, tidal gauging, Kalesto radar gauge, pressure sensors, Logosens-2 Data Logger, OTT HDR DCP satellite transmitter for the Meteosat, weather monitoring network, etc.) and related data processing systems were installed along the coastal zone for measuring climate and SLR parameters to improve the knowledge base for future climate risks.

- Met-SL, together with USL-IMBO, installed five automated OMS which covered all 6 project locations thus: at Lakka, Goderich/Funkia (which covers Hamilton and Lakka communities), Tangrin, Lungi (which covers Conakry Dee community), Bonthe Town (which covers Turtle Island) and Shenge (which covers Shenge and Tombo communities); with the following capabilities -

- Their server systems are linked to CIDMEWS for transmission of data and exchange between the Sierra Leone Oceanographic Monitoring System (OMS) and existing Sierra Leone Meteorological Agency EWS network and the global monitoring network. Support and software licensing supported until December 2024.
- Real time data is displayed on CIDMEWS web-based platform accessible via <https://www.cidmews-sl.solutions/>, <https://slmet.gov.sl/> and through SLMET app <https://play.google.com/store/apps/details?id=slmet.sl&gl=US&pli=1>
- Early Warning System was further strengthened through provision of VHF (15) radios to SL Maritime Administration and SLMET, and by providing local leadership with skills to disseminate warnings, and with 100 solar powered AM/FM Weather Alert Radio/Flashlight/Cell Phone Charger sets
- First rescue boat to aid in search and rescue for fishing communities, when necessary.

Output 1.2: *Institutional capacity of MFMR, EPA-SL, SLMD/A, ONS, SLMQ and USL-IMBO for assessing coastal hazard risk and vulnerability to climate change through probabilistic modelling is strengthened.*

- In collaboration with USL-IMBO and EPA-SL, technical staff from the MFMR, EPA-SL, SLMD/A, ONS, SLMA, and USL-IMBO, received the requisite trainings (Hydrodynamic/probabilistic modeling skills for the development of flood risk and storm surge planning), and all relevant equipment procured, for the functionality of GIS and modeling facilities (including workstations, modeling licenses & 4 GIS specialists with raster modeling capabilities).
- The technical staff from the MFMR, EPA-SL, SLMD/A, ONS, SLMA, and USL-IMBO Climate & Oceanographic/Marine worked together with Integems to establish the vulnerability of the project target coastal areas, which have increased their forecasting Capacity.
- EPA installed the 6 hydrodynamic models and the related equipment procured by the project; and initiated partnership with WMO Regional Meteorological Centres (UK, Dakar) to conduct an in-country gender-sensitive training/capacity building.
- Likewise, partnerships between SLMD/A, Regional and International Oceanographic Centres have been initiated to help develop, install and operationalize a Coastal Nowcast, and medium and short-term marine forecasting products.

Output 1.3: *A systematical link between the collected data and the existing CIDMEWS (web based GIS) is established.*

- The project has developed all the necessary communications, transmission, and data exchange interventions to integrate Sierra Leone ONS data into existing SLMD/A EWS network and the global monitoring network to support an updated CIDMEWS (as already explained in Output 1.1 above); with the early warning mechanism focusing on seawater quality, SLR-induced erosion, urban flooding, and seaweed/sargassum dynamics in place.

Output 1.4: *The human capacity of the MFMR, EPA-SL, MLGRD is strengthened, skilled and trained on CVA techniques.*

- In collaboration with USL-IMBO and EPA-SL, the requisite trainings (Hydrodynamic/probabilistic modeling skills for the development of flood risk and storm surge planning) were conducted, all relevant equipment procured), functionality of GIS and modeling facilities (including workstations, modeling licenses & 4 GIS specialists with raster modeling capabilities).
- The mechanism for exchange of data from multiple systems to end users is in place.

Output 2.1: Sea Level Rise and coastal erosion profiles developed for the six target pilot sites to support the strengthening of Coastal Zone Management Plans at both urban and district levels.

- Coastal Vulnerability Analysis (CVA) (including Sea Level Rise (SLR), and coastal erosion profiles for all 6 project locations) by INTEGEM, and
- EPA conducted studies on coastal erosion rates, coastal assets, SLR scenarios, adaptation projects, sargassum dynamics; and developed the Ecosystem Based Approach (EBA) manual.

Output 2.2: Ecosystem based adaptation design guidance to support future climate resilient planning and development in place.

- Enabling conditions for national and district level ICZM planning that incorporates CCA and is informed by science have been created through comprehensive field studies/assessments, capacity building, policy development and establishing collaboration mechanisms.
- Coastal Vulnerability Analysis (CVA) (including Sea Level Rise (SLR), and coastal erosion profiles for all 6 project locations) by INTEGEM, and studies by EPA conducted on coastal erosion rates, coastal assets, SLR scenarios, adaptation projects and sargassum dynamics; and Ecosystem Based Approach (EBA) manual developed by EPA.

Output 2.3: Marine spatial plan framework to compliment with ICZM is developed.

- The Marine Spatial Plan Framework is not completed; a review of current marine use planning guidelines and policies has been completed; a consultant report by IMBO outlines options for MSP governance.

Output 2.4: Sierra Leone ICZM is strengthened with the establishment of SL-ICZM-WG and sustainability mechanisms.

- SL-ICZM working group mechanism has been established and received operational support beyond project life. Legislative framework/coastal regulation has been drafted. Expert Group Meetings discussions documented.

Output 3.1: An outreach programme designed and implemented to improve decision-making, strengthen information access and data resources for critical stakeholders, disseminate project-generated data and information, and foster public awareness about the potential impacts of climate change.

- MRCG, NTB, MFMR, NDMA mounted a series of sensitisation and awareness-raising campaigns and workshops for community members in the project sites; through various means including audio-visuals and documentaries of disaster-affected and prone areas. As a result, community awareness and knowledge on climate related risks and adaptation has improved as field visits by project team and TE have experienced. No systematic assessments though of before/after training knowledge and awareness have been prepared.

Output 3.2: Means and capacities (business development and management skills, access to microcredit, and the like provided to at least two sand-mining youth associations on the Western Area Peninsula to pursue relevant and profitable climate-resilient alternative livelihoods (ecotourism, agro-business, beach rehabilitation, etc.) to reduce pressure on the beach.

Activities implemented under this output are critical to the adoption of alternative livelihood for sand miners and other people engaged in activities that continue to pose a severe risk to the coastal environment. As a result,

- beneficiaries (200 women) were trained in fish handling, processing, preservation techniques & the 6 communities were each provided fishing equipment in the form of a boat, outboard engines, and fishing gears; 2 post-harvest value chain units (cold rooms & fish dryers/ovens); 2 communities (Shenge & Turtle Island) were provided with improved landing sites/Jetties – these have proven to be very useful, transporting more than 100 passengers/day during market days.
- Twenty-six (26) village savings and loans (VSLA) groups' members were established, and trained in VSLA concept, entrepreneurship or business development & trainees given startup grants for the establishment of small businesses; most (80%) groups are active and are making significant savings to support their businesses.
- During the field visit, respondents commented:
“Of all the projects that had been implemented in our communities, this UNDP-funded project is the best ever, because of the VSLA introduced. We, the husbands have been relieved of our domestic pressures because, our women are now gainfully engaged in micro-businesses”.
This assessment of the project support, namely VSLA introduction, was shared by FDG Discussant in Conakry Dee, Tombo, Hamilton, Lakka, Shenge and Turtle Islands.
- Particular VSLA success stories of women entrepreneurs were found in Hamilton and Lakka communities, such as Zainab Sherrif in Hamilton community, and Josepine Z. Kargbo in Lakka community.

VSLA BUSINESS SUCCESS STORIES



Zainab Sherrif in Hamilton community in her business, established with project support



Josepine Z. Kargbo in Lakka community displaying her gara business, established with project support

- While project support to livelihood development has been very successful in helping beneficiaries on a new path to income generation enabling them to abandon environmentally destructive practices, it will be important that beneficiaries receive continued support to fully develop new enterprises, and that individual and group capacities are strengthened further.
- Some VSLA groups are active but are not making any significant savings to support their businesses, further support in business development is needed. Other beneficiaries were trained in various vocational skills such as gara tie dying, hair dressing, and other, and in waste management skills, mainly to process waste plastic and other materials into briquette and bricks.
- However, youth groups are yet to use these trainings more productively. Beneficiaries stated during the TE field visit, that they need start-up capital or kits, and follow-up training (2 days are not sufficient) to grasp the concept. Also, at the time of the field visit, construction of some of the waste management buildings was incomplete. Overall, beneficiary communities need to be

strengthened within their current livelihood options, making them more productive and environmentally sound.

Output 3.3: Compressed Stabilised Earth Block (CSEB) practices are introduced to mitigate the risk of sand mining in Sierra Leone.

- 2 CSEB machines were procured to support bricks production for youth groups; however, a youth training centre was constructed in Lakka/Hamilton instead of a CSEB Centre, and trainings in environmentally friendly alternative livelihood skills conducted. The location for CSEB activities identified in project design turned out to be less feasible for lack of sufficient raw material.

Output 3.4: Participatory implementation of urgent and priority medium-scale soft (non-structural) and hard (structural) coastal adaptation works undertaken to protect coastal community at risks.

- With respect to this output, ENFORAC rehabilitated 600 ha of degraded mangrove areas in 4 coastal communities – Conakriddie, Tombo, Shenge; but, in Turtle Island, with the community's consent, their degraded mangrove areas were rehabilitated with an economic tree crop, coconut. For Hamilton and Lakka communities no mangrove rehabilitation was undertaken because of potential dispute with landowners.
Initially, overall survival rate of the seedlings was marginal due to insufficient community involvement and support. Following efforts to promote community involvement and popular participation in the mangrove restoration in the later phase of the project, survival rate much improved, thus enhancing sustainability through community ownership. In the meantime, transplanted seedlings that perished have been replaced.
- A two-room eco-lodge on Turtle Island with garbage bins to keep the beach areas clean, has been constructed, and a second lodge is under construction. The second eco-lodge is anticipated to be completed in December 2023. A delay was caused as construction materials couldn't be transported to the site due to heavy rains making the sea unsafe for travels.
- Other completed works included commercial jetties or landing sites, and raised platforms in Turtle Island and Shenge communities. These jetties have proven to be very useful, transporting on average more than 100 passengers/day during market days as was evident from the manifests viewed by the TE team member. This represents an enormous improvement of conditions for reaching markets, and for the safety and efficiency of boat operations.

Further details on activity implementation, and evidence (training reports, consultant reports, manuals, draft policies, media/publications) and on elements that could not be implemented or completed are provided in Annex 12

Relevance

In face of the losses of life and of the damages that have already occurred in the last decade as a result of climate change induced severe weather events, the ongoing coastal erosion, and increased flooding observed during the project lifetime, it is self-evident that the project is of the highest relevance to assist the country in climate change adaptation and coastal risk management. The project was designed to directly contribute to priority action points (2, 4, 14, 16, 17) of Sierra Leone's NAPA; it is of the highest relevance in supporting national priorities and implementing key policies. The project has met the needs of relevant government agencies to build their technical capacity for climate and ocean monitoring, provided local authorities with science based data for development planning, enables communities to

develop sustainable livelihood options while conserving the natural resources they depend on, increased maritime safety, enabled women to increase their incomes, gave youth skills and motivation for meaningful work, and reached out to the most vulnerable and remote communities. The enthusiastic response by FGD participants to the project support, as well as the support for the project objectives and integrated approach expressed in Key Informant Interviews speak to the outstanding relevance of the project.

The project is highly relevant for the country's needs to build resilience to the adverse impacts of climate change that pose a threat to Sierra Leone's economic development and to the implementation of the Medium-Term National Development Plan 2019 – 2023. The direct linkages of the project to the country's NAPA and NDC are outlined below (section on Country Ownership). The Sierra Leone Vision 2025 (SLV_2025) and the Government's Agenda for Prosperity (A4P), for the period 2013 – 2018, were the guiding documents in the design of the project. SLV_2025 lays out a long-term plan aimed to transition Sierra Leone from an LDC to a middle-income status by 2035 through conservation and promotion of the rational use of the Nation's natural resources.

The project has also significant relevance in the global context, contributing to the global monitoring network²⁰ on coastal and marine climate change impacts to support the existing CIDMEWS. Furthermore, the project is of high relevance to the LDCF strategies, namely by implementing NAPA priorities, supporting a "learning-by-doing" approach, undertaking a multidisciplinary approach, and promoting gender equality. The project contributes to outcome 1 and 2 of the UNSDCF 2020 – 2023 in the country, and to outputs 1.3, 1.4, 1.5., 2.5 of the UNDP Strategic Plan in Sierra Leone.

Relevance is rated as **Highly Satisfactory (HS)**

Effectiveness

The high degree of achievement towards objective and outcome level targets has been documented above, while it has been recognized that not all activities could be implemented (CESB, coastal protection measures). This has to be seen in the country context with poor infrastructure, limited communications/internet capability, limited technical capacities, and in the context of an extremely complex project design, highly technical procurement needs with due process for procurement (and the shift from ATLAS to a new system) causing delays, temporary PMU staffing shortages, all compounded by COVID-related delays. Nevertheless, activity implementation, including those of adaptive management responses, was effective in achieving key objectives of the project, and to build a foundation of skills, integrated livelihood and resource management models, technical capacity, collaboration mechanisms and policy documents upon which stakeholders and further projects can build.

Factors contributing to achieving/exceeding planned outcomes include the integrated approach of the project design, linking CCA and livelihood development, stakeholder engagement throughout project development, inception and implementation, local level implementing structures with local focal points and duly involving local leaders. Last but not the list, the experience, hard work and commitment of PMU leadership, and team members, and support by the UNDP SLED cluster, drove the effective implementation and achievements of results even under adverse conditions. Continued efforts to

²⁰<http://www.odinafrica.org/products/sea-level-data-collection.html> and <http://sealevel.odinafrica.org/>

coordinate and support IPs, and a decision-making mechanism involving a Technical Committee and Project Board were equally contributing to effective implementation.

Considering the difficult implementation conditions particular in the early project phase, the effectiveness in achieving the objectives at project completion is rated as **Highly Satisfactory (HS)**.

Efficiency

The project achieved its objectives, and the evidence from the documentation provided by the PMU to the TE, comprised of key regular reports and M&E logs according to requirements, as well as interviews with stakeholders suggest that resources and inputs were allocated as planned and efficiently to generate results while applying adaptive management in response to emerging challenges. Particularly after the slow start of implementation, PMU with support by UNDP CO utilized acceleration mechanisms at their disposal to speed up procurement and made concerted efforts of IP coordination.

Despite the challenges described above, monitoring documents (PIRs, project data base, attendance reports, UNDP Implementation Stage Quality Assurance Reports) which were used for tracking project progress was effective in capturing overall implementation progress and flag potential challenges to be addressed by the project board or relevant stakeholders, and for planning ahead. Efficient planning is evidenced by Annual Work Plans (AWPs). The disbursement rate of 99.7 % at project completion (April 2023) to the ultimate efficiency of financial management of the project that was faced with budget shortages due to cost underestimates in the design. **Efficiency is rated as Satisfactory (S)**²¹

Overall Project Outcome

Based on the ratings for “relevance”, “effectiveness” and “efficiency”, and the achievements towards project objective and key outcomes, the overall project outcome is rated as **Highly Satisfactory (HS)**.

The rating is justified as the project exceeded its targets for number of direct beneficiaries, number of technical officers and policy makers enabled to disseminate ICZM, and number of groups engaged in alternative livelihoods.

Feedback in discussions, on-site findings and documentation speak for the success of the integrated approach, that best practices have been introduced, and enabling conditions to reduce vulnerability have been built in terms of technical infrastructure, improving technical skills, raising awareness, developing policy, establishing collaboration mechanisms, providing viable alternative livelihood strategies and linking it to CCA, creating tangible benefits such as access to finance.

- Under Component 1, through the installation of weather stations, with their server system linked to CIDMEWS for transmission of real time data/information, high quality climate risk information has been made available to create enabling conditions for coastal risk management and climate change adaptation.
- Under Component 2, appropriate gender sensitive protection measures, policy/legal tools and integrated coordination mechanisms have been developed to improve /support policy design and implementation in dealing with current and long-term coastal challenges.

²¹ Rating Scale in Annex 1

- Under Component 3, public awareness has been enhanced, gender sensitive climate resilient alternatives to sand mining have been promoted, and scalable models for tourism have been created. (eco-lodges, skill development, nature tourism activities, waste management, environmental protection). By linking CCA to livelihood development, giving communities not only knowledge and awareness but true alternatives for livelihood strategies, motivating youth to engage in environmentally friendly income generation through collective action, empowering women to access finance (VSLA), link to banking, and initiate micro enterprises, rehabilitating degraded areas (mangrove) and establishing community governance structures for sustained management the potential to sustain these measures through community support is promising.

Country Ownership

The rationale for the project and its key desired outcomes were firmly grounded in national priorities and several national programs, and it directly contributes to the implementation of Sierra Leone's NAPA priority interventions Nr. 2 Rehabilitation & Reconstruction of meteorological/climate Monitoring stations throughout the country, Nr. 4 Sensitization and awareness raising campaigns on climate change impacts on women relating to the three conventions of biodiversity, desertification and UNFCCC, Nr 14. Development of an Integrated Coastal Zone Management Plan for Sierra Leone, Nr. 16, Development and enactment of appropriate policies and regulations relevant to the development of coastal communities, urban growth planning, and critical coastal ecosystems preservation, and Nr. 17 Establishment of a National Sea-Level Observing System in Sierra Leone. The Sierra Leone Vision 2025 (SLV_2025) and the Government's Agenda for Prosperity (A4P), for the period 2013 – 2018, were the guiding documents in the design of the project.

The project also contributes to the advancement of the Nationally Determined Contribution (NDC) of Sierra Leone (2015), specifically, the project will support the achievement of Strategy 5: Management of coastal and fisheries resources through promotion of non-destructive fishing techniques to maintain resilience of marine ecosystems, Strategy 6: Promotion and facilitation of early warning and disaster preparedness system, Strategy 9: Enhance the resilience of the tourism value chain, Strategy 10: Create enabling environment for the resilience of private sector investment, demonstrate an operational business case.

The feed-back by stakeholders on all levels and by communities at the project sites confirms a high level of national and local project ownership. The policy development achievements regarding the coastal regulation and the commitment of the parliamentary chairman of the Committee on Environment to support its enactment are also expressions of the high level of country ownership of the project.

Sustainability

While project ownership is high from community level to national implementing partners, there are challenges to sustaining and further expanding the project achievements.

For component 1, more skills training needed for technical officers to process data that are generated, and further mechanisms of dissemination to reach communities with appropriate tools and messaging that is accessible and easy to understand need to be developed. Safety and security of installations/infrastructure needs to be enhanced. In addition to regular O&M procedures, specific

activities are required for the Early Warning System (EWS) such as server maintenance subscriptions, technical support fees and capacity building. Costs for O&M of the OMS provided by the project need to be estimated and financial mechanisms developed to support the system.

For component 2, ownership level is very high to support further development of ICZM and enforce new regulations, and the project made provisions to support the working group on ICZM beyond project completion. ICZM yet to be mainstreamed in local development planning, and further capacity is to be built for this. The coastal regulation is yet to be enacted by parliament.

Under component 3, local and community governance structures such as O&M committees, management committees for training center, eco-lodges, woodlot plantations have been established, but need further strengthening. Youth/livelihood groups need further strengthening and improve financial management.

Communities recognized the importance of the formation of operations and maintenance committees comprising of 5 members per each beneficiary group – Fishing, VSLA, Waste Management and others - for operations, repairs and maintenance of established facilities, and of monitoring and commitment of O & M committees for enhancing. This constitutes a good foundation for further strengthening these O&M mechanisms by assisting communities and groups to develop and adopt O&M plans and internal rules for the committees.

For facilities such as the project's cold room and landing sites user fees are a promising option to support their continued operation after the project ends, and it will be important that there is transparency of the utilization of the fees. To sustain project achievements in shifting income generation from destructive practices such as sand mining, the capacity to further develop the alternative livelihood options needs to be further strengthened. To sustain project results in tourism development, private sector investments are being sought to operate the eco lodges established with project support.

A project exit strategy has been drafted, it outlined key sustainability issues to be addressed through agreements with IPs on taking on roles and responsibilities to sustain activities and to develop detailed Operation and Maintenance Plans, a template for which has also been drafted.

In summary, project results enjoy a high degree of institutional and governance sustainability due to the high level of relevance and project ownership by government agencies and communities, however, significant challenges remain for financial sustainability; environmental sustainability will depend on whether alternative livelihood strategies are effective in generating increased incomes. The project's alignment with national priorities and objectives in coastal risk management that provide very tangible benefits and address urgent needs of coastal communities is likely to increase socio-political sustainability.

Sustainability	Rating
Financial resources	Unlikely (UL)
Socio-political	Moderately Likely (ML)
Institutional framework and governance	Likely (L)
Environmental	Moderately Likely (ML)
Overall Likelihood of Sustainability	Moderately Likely (ML)

Gender Equality and Women’s Empowerment

The project was assigned Gender Marker 2 (gender equality as significant objective) and its outcomes were expected to contribute towards an understanding of how adaptation responses can be designed to strengthen gender equality. It included a gender analysis, the main findings of which were outlined above under chapter 4.1. The results framework was updated to explicitly insert gender sensitive approaches for all activity planning and implementation. Project data base, attendance reports, M&E documents practiced gender disaggregated reporting.

Deliberate effort was made by the project for an increase in women participation in all capacity building activities. As women in the coastal zones rely increasingly on fishing, the project team collaborated with MFMR on the formation of women in fisheries groups. Project support with fish processing facilities (five solar cold rooms and 2 ovens for fish drying) benefit women in particular as they are the main processors of fish. The facilities and capacity building provided women with better livelihood opportunities and helped better cope with environmental hazards.

By 2020, the project had made significant progress to increase participation of women in all its activities; of 2,466 direct project beneficiaries, 51 % were women. In collaboration with MFMR, 200 women were trained in fish processing to enhance value addition. Before designing adaptation measures, the project recognized the need for gender sensitive design to meet the needs of both women and men; this approach was applied when conducting a rapid assessment to identify appropriate alternative livelihoods that support Climate change adaptation in the pilot sites.

The project collaborated with the Country Office Gender specialist, providing gender training to all project partners and project team members on gender mainstreaming in all planning, implementation and reporting. The gender sensitive approach was instrumental in reducing mangrove cutting for fish smoking, and activity mainly undertaken by women. By targeting mainly women with awareness raising activities, communities worked together to develop community bye-laws which regulated exploitation of natural resources in their localities. This led to behavioral change, where communities began to hold each other accountable for unregulated environmental activities. The field visit during the TE confirmed that mangrove cutting had ceased at the visited locations.

Women were especially targeted and enhanced their capacity for entrepreneurship including access to finance (VSLA), resulting in some of the success stories described earlier of women entrepreneurs in Hamilton and Lakka communities.

The End of project (April 2023) update on achievements towards targets reports 48 % women of a total 61,366 (Male 32,068 = 52 %; Female 29,298 = 48%) registered beneficiaries. In the GEF Core Indicator reporting, the project duly provides gender disaggregated data on direct beneficiaries disaggregated by gender as co-benefit of GEF investment. Total number expected at CEO ER: N/A. Total number achieved at TE: 61,366 (Male 32,068 = 52 %; Female 29,298 = 48%).

Cross-cutting Issues

The project made contributions towards the UNDP UNDAF²² outcomes 1 and 2 (By 2018, targeted government institutions, the private sector, and local communities manage natural resources in a more equitable and sustainable way, and By 2018, targeted communities demonstrate decreased vulnerability and increased resilience to natural and man-made disasters), and to the following UNDP Strategic Plan Outputs: 1.3: Solutions developed at national and subnational levels for sustainable management of natural resources, ecosystem services, chemicals, and waste; 1.4: Scaled up action on climate change adaptation and mitigation across sectors which is funded and implemented; 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy); 2.5: Legal and regulatory frameworks, policies, and institutions enabled to ensure the conservation, sustainable use, access, and benefit-sharing of natural resources, biodiversity, and ecosystems in line with international conventions and national legislation.

The project contributing to the following SDGs: Goal 1. End poverty in all its forms everywhere, Goal 13. Take urgent action to combat climate change and its impacts, Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development, Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

The project has contributed with regard to several cross-cutting themes namely governance, climate change mitigation, livelihoods development, and capacity development. Governance of coastal risk management was enhanced through supporting collaboration mechanisms for ICZM and developing the regulatory framework (Coastal Regulation) at national level, capacitating local government authorities and developing ICZM plans at district level, and by setting up community-based governance structures for natural resource management. The reductions in emissions of GHGs through mangrove restoration constitutes a potentially significant climate change mitigation measure over time if scaled up, apart from the direct benefit in combating coastal erosion and maintaining marine life habitat. The project reached out to some of the most vulnerable coastal communities that are marginalized due to their remoteness.

A key feature of the project approach was the linkage of climate change adaptation and natural resources protection and restoration with the piloting of alternative livelihood strategies, enabling beneficiaries to cease environmentally destructive practices such as sand mining and mangrove use for firewood and begin to generate income through fishing, waste management, and other small business the skills trainings for which were provided by the project. Resilience and the capacity for crisis prevention of coastal communities has been strengthened through the integrated project approach, encompassing income generation, group organization, access to early warning information, greater cohesion in the

²² UNDAF at project design stage

community, raised public awareness of climate change impacts and adaptation, and improved services and planning by local authorities for coastal risk management.

GEF Additionality

The implementation of activities under the three project components and the achievements for all three outcomes would not have been possible with the regular institutional budgets of the involved implementing partners. Technology transfer under Component 1 in particular was an important element to be recognized as enabled through GEF support, and to be further expanded on with support from climate finance mechanisms. The climate change adaptation benefits generated that contribute to GEF strategic objectives are reflected in M&E documents (updated results framework, PIRs, IP reports) and verifiable.

Catalytic/Replication Effect

Scaling up. The project has supported the development of the new Coastal Regulation the enforcement of which would scale up the practices implemented in ICZM; the district level plans developed that integrate ICZM approaches and contribute to implementation of NAPA and NDC can serve as models to scale up to other coastal areas. Other models developed by the project that are scalable include those a) in eco-tourism development, linking Eco-lodge operation to interpretative facilities (boardwalk), ecological restoration (mangrove), waste management and capacity building in the community for tourism services, b) group organization for alternative livelihoods, linking income generation with CCA, and building community-based governance structures. The technical installations for the EWS, and the whole package of activities under Component 1 is significant as a model so scale in-country and in the region.

Upscaling the best practices and models of the project with support of climate finance mechanisms should be a priority upon project closure, along with follow-up support in capacity building under components 1 and 3.

Demonstration and Knowledge Management

The project has used various means of communication for education and awareness raising on climate change, coastal risks and the project objectives and strategy.

A Coastal Risk Awareness Rising through Radio Drama Series initiated earlier by WA BiCC was continued with project support. A 2-day reflection workshop was organized (29-30, January 2020) bringing together drama producers, animators, community stakeholders and local council leaders to reflect on previous radio drama series “Watasai Ston” and to reflect on season 2. This reflection exercise was useful to share lessons learned, solidify modalities for collaboration between WA BiCC and UNDP to ensure quality and effective radio drama, and develop a plan to maximize listenership during season 2 which aim at increasing the knowledge-based of communities along the coastal zones to ensure the sustainable management of natural resources and to build the resilience of community to the changing climate.

During the Reflection Workshop WA BiCC shared lessons learned and challenges encountered in season 1 that will support UNDP, in the production of another 24-episode radio drama series and to increase the

knowledge of people living in the coastal communities of Sierra Leone to sustainably manage their natural resource in order to build their resilience to climate change.

The intended outcome of the radio drama series was to help the people and Government of Sierra Leone (GoSL) to become more resilient to climate change risks and to raise awareness by creating a platform for disseminating tailored messages through an interactive process among individuals, communities and society to understand the problem, analyze the situation and develop a positive behavior change towards the sustainable use of the natural resources.

The project collaborated with the Inclusive governance cluster within UNDP and supported the Media Reform Coordinating Group (MRCG) to develop media messages in the form of Audio-visual documentation, stickers, T-Shirts etc. to document climate risks messages in the coastal zones which also highlighted adaptation benefits. The documentary produced was used to showcase the destruction that had occurred over the years as a result of human activities (sand mining, mangrove wood cutting etc.). This increased the knowledge on climate change risks among stakeholders and communities who gained vital understanding of the negative impact of their over reliance on sand mining as a livelihood and the effect of unsustainable fisheries and land management. The knowledge would support stakeholders to design appropriate adaptation measures/policies to booster the resilience of coastal zones against climate change risk.

The project also hired the service of Premier Media Group Ltd to produce and broadcast a 24 radio drama series in four local languages using community radios on the indiscriminate sand mining as a means to positively influence the behavior of project communities in taken appropriate action on sustainable environmental practices.

For critical communications to extend weather warnings to project communities several means of communications appropriate to the target audience have been utilized including:

1) Marine weather information is disseminated through the Sierra Leone Meteorological Agency website and platforms that are specifically created for sharing weather forecast to extend weather warnings to beneficiaries on climate related risks. Weather information is also communicated through VHF radios to maritime monitors at the various landing sites for further dissemination to boat owners. Also, 30 beneficiaries were provided with smart phones with marine weather apps uploaded for easy receipt and dissemination of weather warnings.

2) The project collaborated with The National Disaster Management Agency (NDMA) and trained District Disaster Management Committee (DDMC) in the six coastal communities on Early Warning Management Systems. Early Warning Messages were aired in four coastal districts through engagement of community radios and phoned-in discussions.

3) Jingles on Early Warning Systems especially flood and fire mitigations were designed using three indigenous languages (Krio, Mande and Temne) and disseminated through community radios in four coastal districts. The jingles have been archived at the NDMA website for further dissemination.

Links to media and knowledge products by the project:

<https://www.adaptation-undp.org/projects/adapting-climate-change-induced-coastal-risks-management-sierra-leone>

<https://drive.google.com/open?id=1fx9K3zA5nuREQdl4URNDRGrXw2SNeqlA>

<https://drive.google.com/open?id=1ARZze2mhfo5k4nQ05YkccDdpPp69R0z>

<https://drive.google.com/open?id=1aD75uZgdbUmHEb9ZaT2Ci3TKhSEnBuxM>

Due to the multitude of implementation activities, it has been a challenge to prepare and make available all success stories, lessons learnt, technical reports and assessments, and other outputs to various audiences. It will be important to develop mechanisms for sharing and establishing platforms where all knowledge products are available beyond project life and publicize their availability through appropriate channels.

Progress to Impact

According to the “TE Guidance for UNDP supported, GEF financed projects”, progress towards impact is to be assessed based on GEF core indicators as the project did not develop a Theory of Change defining an ultimate development goal

The table below summarizes the progress reported by the project on relevant GEF core indicators, the detailed GEF Core Indicator table is provided as separate Annex 13 with this report.

Indicator 1 Number of direct beneficiaries	61,366 (48 % female). Various studies have been conducted to determine vulnerability of people, physical assets & natural systems, including CVA, assessment of coastal assets and SLR
Indicator 2 Type and extent of assets strengthened and/or better managed to withstand the effects of climate change	600 ha of land (mangrove) rehabilitated
Indicator 3 Population benefiting from the adoption of diversified, climate-resilient livelihood options	2030 (45 % female). VSLAs, support for fishing and fish processing, start-up grants to waste management groups previously engaged in sand mining, wood burning.
Indicator 5 Public awareness activities carried out and population reached	20,000 (45 % female) reached. Mostly through radio broadcasts
Indicator 6 Risk and vulnerability assessments, and other relevant scientific and technical assessments carried out and updated	12 knowledge products . 2 Coastal Vulnerability Reports covering the six project sites and 10 other assessments conducted.
Indicator 7 Number of people/ geographical area with access to improved climate information services	90 % of project area has access to reliable climate information
Indicator 9 Number of people trained to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures	482 (43 % female)
Indicator 10 Capacities of regional, national and sub-national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures	6 National Institutions capacitated
Indicator 11: Institutional arrangements to lead, coordinate and support the integration of climate change adaptation into relevant policies, plans and associated processes	The project through the EPA-SL has capacitated 246 (M: 217; F:29) local council staff on how to integrate CCA into their District Development plans

<p>Indicator 12: Regional, national and sector-wide policies, plans and processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures</p>	<p>6 (Action plan for coastal protection measures, EBA guidance manual, Regulations on coastal protection, Marine Spatial plan framework. Coastal Vulnerability Analysis (CVA), strengthening of Integrated Coastal Zone Management plan (ICZM), at both the urban and district levels)</p>
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Contributions to changes in socio-economic status were made insofar as practices for alternative and environmentally friendly livelihoods were introduced, access to finance for communities was enabled, and tourism development supported.

The project’s long-term impact on gender equality will realize with further support to VSLA and women lead enterprises that were initiated. Gender sensitive changes to decision-making mechanisms were initiated by the project through the gender sensitive approach in promoting women’s equal participation in all trainings, and in community committees for group governance.

5. Main Findings, Conclusions, Recommendations & Lessons

Main Findings

The project has achieved its objectives in “strengthening the ability of coastal communities to systematically manage climate change risks and impacts on physical infrastructure and economic livelihoods” and exceeded four of the seven output level targets. It is highly relevant in the context of Sierra Leone being among the countries most effected by the effects of climate change and already having suffered devastating losses of life and damages to coastal infrastructure in extreme weather events in recent years. The project addressed the needs of the most vulnerable coastal communities, youth and women and reached out to remote and marginalized communities.

The project reached a total of 61,366 beneficiaries (Male 32,068 = 52 %; Female 29,298 = 48%) including youth to engage in CCA and development of alternative livelihood strategies); another 11,410 (5,135M, 6,276F) people have benefited from two jetties constructed with project support. The cumulative GL delivery rate at project completion (end of April 2023) was 99,7 %.

Key achievements under component 1 include the installation of 4 weather stations, and the data generated covers all 6 project locations. Their server systems is linked to CIDMEWS for transmission of data and exchange between the Sierra Leone Oceanographic Monitoring System (OMS) and existing Sierra Leone Meteorological Agency EWS network and the global monitoring network. Support and software licensing supported until December 2024. Therefore, real time data is displayed on CIDMEWS web-based platform accessible via <https://www.cidmews-sl.solutions/>, <https://slmet.gov.sl/> and through SLMET app <https://play.google.com/store/apps/details?id=slmet.sl&gl=US&pli=1>.

Under component 2, the Coastal Vulnerability Analysis (CVA) (including Sea Level Rise (SLR), and coastal erosion profiles for all 6 project locations) by INTEGEM, and studies by EPA conducted on coastal erosion rates, coastal assets, SLR scenarios, adaptation projects and sargassum dynamics, and an Ecosystem Based Approach (EBA) manual provide a wealth of data to inform ICZM planning. Under EPA leadership, new National Coastal Regulations has been drafted through a consultative process with stakeholders during

July – December 2020. Legal provisions have been agreed to enable enactment of the regulation, and the parliamentary chairman of the Committee on Environment has pledged support for its enactment. Four coastal districts have reviewed their councils plans to integrate ICZM in development planning. A framework for the development of a national Marine Spatial Plan (MSP) has been developed by IMBO, and the project has provided support for the inter-agency ICZM Working Group to convene beyond project life.

Under component 3, a total of 489 (M:399; F:90) local government technical staff in four (4) Local Councils; Port Loko, Bonthe, Moyamba and Western Rural Districts have improved their knowledge and skills to disseminate information on ICZM within their communities. 10 youth groups with fishing boats, outboard engines and fishing gears. Vocational skill training to 516 (M=30, F=486) youths/women with start startup. 293 (M=166, F=127) youths trained in plastic recycling and waste management 26 Village Saving and Loan (VSLA) established in the six project locations comprising 822 (M=252, F=570) beneficiaries. In total, 1,631 (M=448, F=1,183) beneficiaries previously engaged in sand mining, mangrove cutting have benefitted from interventions. 600 ha of degraded mangrove area have been restored in 4 pilot sites (Conakriddlee, Tombo, Shenge & Turtle Island) to protect coastal community and infrastructure at risks; with overall survival rate of 79%. Hectares restored: Turtle Island 142 (80 % survival rate), Shenge 122 (78 %), Tombo 162 (87 %), Conakriddlee 174 (71 %).

The project was designed with active stakeholder engagement. In line with national priorities, it contributes directly to implementation of Sierra Leone's NAPA. The inception phase confirmed overall design and fine-tuned stakeholder engagement to ensure all relevant government agencies were duly involved as IPs. The project strategy and logic were overall sound, comprehensively addressing the barriers identified to coastal risk management with the planned outputs and activities. Design weaknesses were in unrealistically low-cost estimates for goods and services to implement certain activities, an ambitious time frame, some mismatches in primary mandates and the implementation responsibilities of IPs. One objective level indicator was not specific, and the intended baseline to measure changes in vulnerability was not established through the CVA.

The achievements were made despite significant challenges in the early phase with procurement of highly specialized equipment, delays caused by COVID-19 related restrictions, temporary staff shortage of the PMU, and in the face of a very complex project design with numerous activities under each output, and five primary and further secondary implementing partners to coordinate. Success factors for an ultimately effective and efficient implementation were the PMU leadership and UNDP CO continued coordination efforts among IPs, support by UNDP CO and Regional Procurement team to PMU acceleration mechanisms and adaptive management, creating strong community ownership through local inception events, and involving local leaders in planning, implementation and oversight. Local focal points and the establishment of a decision-making mechanism involving both a Technical Committee and the project board were key success factors in terms of implementation arrangements.

Local success stories in the project areas are a) the examples of women entrepreneurs who established their businesses as members of VSLA groups, and the significant income generation successes by some groups. b) the jetties that are heavily used as evidenced by SLMA manifests; the ability for boats to come ashore and land, load and unload passengers and goods safely, means a substantial improvement of maritime safety as well as of economic opportunities of fisherfolk and the whole community.

The provision of a rescue boat likewise is an important and first of its kind support to increase maritime safety by enabling search missions and rescue operations in rough seas. A key success factor of the project was the functional linkage between climate change adaptation and livelihood strategies; the above infrastructure and tangible livelihood benefits are the prerequisite for community buy-in and therefore sustainability. The project has employed creative means to reach community audiences through broadcast media (radio, jingles) and has build on the lessons and experiences of previous projects.

Despite the success stories and community support, follow-up support will be needed to enable beneficiaries to fully realize the potential of new livelihood strategies; further trainings and facilitation is needed. Likewise, technical capacity building among local government and technical agency staff is needed to ensure the technical infrastructure provided by the project is maintained and used to its full potential. O&M plans need to be elaborated with all IPs, and sustainability agreements concluded.

Community governance structures have been established, for mangrove/woodlot management and in livelihood groups; O&M committees have been initiated, but need consolidation. Follow-up funding is needed to consolidate, strengthen and scale up the project results.

Conclusions

The project has created a strong foundation to build on, it has developed enabling conditions to advance coastal risk management, making forecast data available, developing the policy framework and building capacity. Five (5) weather stations were successfully installed, and the high-quality climate risk gender sensitive information and early warnings generated, covers all 6 project locations, reaching people who downloaded the OMS App, on mobile phones that were given to two community members.

Five integrated coastal management (ICZM) plans or policies (Integrated coastal and marine regulation (2022) (National); Action plan for coastal protection measures, Ecosystem Based Adaptation (EBA) guidance manual, Coastal Climate Change Adaptation plan, and the Marine Spatial Plan and Implementation framework), have been developed for enactment in parliament. In addition, 4 districts reviewed their council's plans for integration of: The Nationally Determined Contribution (NDC), the National Adaptation Plan (NAP) and the National Climate Change Strategy and Action Plan (NCCSAP) into their District Development Plans.

The project has piloted practices for communities to develop livelihoods while protecting their natural resources and contributing to coastal protection measures. By linking CCA to livelihood development, giving communities not only knowledge and awareness but true alternatives for livelihood strategies, motivating youth to engage in environmentally friendly income generation through collective action, empowering women to access finance (VSLA), link to banking, and initiate micro enterprises, rehabilitating degraded areas (mangrove) and establishing community governance structures for sustained management the potential to sustain these measures through community support is promising.

Public awareness has been enhanced, gender sensitive climate resilient alternatives to sand mining have been promoted, and scalable models for tourism have been created that include infrastructure/eco-lodges, skill development, nature tourism activities, waste management, and environmental protection/mangrove conservation. The potential to develop sustainable tourism as an adaptation strategy has been tapped into.

Feedbacks in discussions, on-site findings and documentations speak for achievements of the project and the success of the integrated approach. Best practices have been introduced to link livelihood development to CCA and coastal risk management, and enabling conditions to reduce vulnerability have been built in terms of technical infrastructure, improving technical skills, raising awareness, developing policy, establishing collaboration mechanisms, providing viable alternative livelihood strategies and creating tangible benefits such as access to finance that are key to sustaining community support.

While the project achieved its immediate targets and the results constitute significant progress towards long term impact, there is a need to further consolidate and strengthen results to make them sustainable and to promote replication and scaling up.

Much remains to be done to consolidate, strengthen and scale up results to share experience, to make knowledge products broadly available to the public, and to implement activities that could not be realized in the time frame of the project, namely coastal protection works. As intended, the project took a gender sensitive approach and developed models on how such an approach can promote CCA, as the success stories of VSLA and women entrepreneurs testify.

Recommendations

Follow up activities to sustain, strengthen and scale up project results:

A. Project/UNDP with IPs:

- Each IP, with PMU support, further consolidate O&M plans with all stakeholders, defining roles and responsibilities in management and monitoring (of agency staff, and/or community organizations, local leaders ensuring facilities/equipment is used by beneficiaries as intended, defining and budgeting for maintenance costs, identifying remaining capacity building needs. Present, make public O&M plans for transparency.
- Hand-over assets (infrastructure, equipment), and conclude sustainability agreements based on O&M plans with IPs and stakeholders.
- IPs determine further needs in technology transfer and capacity building to consolidate and sustain project achievements, to be included in follow-up project proposals.

B. Project/UNDP with communities

- Post project survey to assess capacities (skills, knowledge, awareness) as baseline for follow-up project.
- needs assessments to enhance sustainability (vocational skills trainings, financial management, organizational strengthening of groups).
- Evaluation of success factors and challenges; develop best strategies for replication/scaling up; define best community-based mechanisms for experience sharing, identify local champions.

C. Knowledge management

- Document and share project achievements and lessons learnt, for different audiences.

- Ensure all knowledge products are accessible and public is informed that they are available.

D. Link to financial mechanisms.

Since, the VSLA intervention has the most impact, for further strengthening, UNDP should link with microfinance and business incubation service providers to further support climate-resilient alternative livelihoods in the coastal zone, including:

- ✓ Small and Medium Enterprise Development Agency (SMEDA's) "Munafa Fund" aiming to benefit 50,000 small and medium businesses nationwide, working through ten local financial service providers. <https://politicosl.com/articles/le100-billion-small-business-loan-scheme-sierra-leone>
- ✓ Local small business incubation services such as provided by the social enterprise Sensi-Tech-Sierra Leone, targeting young entrepreneurs (<https://sensi-sl.org/about-us/>)

E. Link with private sector for investments in tourism development (on-going for eco-lodge)

- Explore opportunities to link/work with private sector to access climate change adaptation and mitigation funding for small businesses and technologies such as Acumen Fund Inc. (<https://acumen.org>), or accessing carbon market schemes working with communities such as Plan Vivo (<https://www.planvivo.org/>).

F. Develop follow-up proposals to climate finance mechanisms.

Elements of follow up projects should include:

- Further strengthen local/community-based governance structures for Mangrove protection and restoration in the face of overlapping roles of local governing institutions, and lack of clarity as to who manages coastal resources leading to overexploitation, and for other natural resources (wood lots)
- Technology transfer as identified by IPs, and capacity building.
- Tourism Development (linking infrastructure development to skills training and protection of coastal and marine resources that reflect the values that attract visitors; include relevant agencies responsible for conservation and protected areas)
- Further support groups (youth/women) in enterprise development (vocational skills, financial management, organizational development)

G. Link with agencies implementing and developing projects that can provide follow-up support, to include certain elements in ongoing proposal development by other agencies.

- ✓ (LDCF/UNIDO) project on "Fostering climate change adaptation through entrepreneurship in Sierra Leone" and opportunities to access the GEF-funded Adaptation SME Acceleration Project (ASAP)'s support to small businesses, with the creation of a new online marketplace in collaboration with Sierra Leone's Small and Medium Enterprise Development Agency (SMEDA). <https://www.unido.org/stories/fostering-climate-adaptation-through-entrepreneurship-sierra-leone>
- ✓ Save the Children – project concept note development to GCF for a Coastal Resilience Project (SLCRP, Sierra Leone Coastal Resilience Project)

Lessons Learned

Lessons for project design

There were delays in project implementation because landowners came forward to claim land where the project was planning to build. The project then turned to local government authorities to allocate land. The lesson is that it's a good practice to work with the relevant government authority for land use during project design to determine which land is to be used for project activities.

Project design did not establish realistic budget estimates for all activities that considered the true costs of goods and services and all required logistics and labor, and factored in inflation rates. The lesson is to make budget allocations, for all planned activities, with careful consideration of all involved costs including that for labor, services, and to factor in anticipated inflation rate to the degree possible.

The project's integrated approach was crucial to address the barriers and threats holistically; however, it did not consider how much time processes take to build community participation, ownership, strengthen community organizations and to develop capacity to realize benefits from new livelihood strategies, as well as for policy development. The project time frame therefore was ambitious to build sustainability for all results. Design should consider the process orientation and allow enough time for it.

Lessons for project implementation:

The project team took several measures that were success factors to create ownership, improve coordination and built a foundation for sustaining results.

The establishment of a Technical Committee, comprised of technical experts of each Implementing Partner helped to bring IPs on board for planning, implementing and coordinating activities under overall PMU coordination. With their own staff involved in planning, IPs follow-up of commitments improved, and it was a mechanism that lent legitimacy to the plans to be approved by the Project Board. The combination of Technical (Experts) Committee representing all IPs and the Project Board as oversight body made for an efficient and effective mechanism for activities planning, implementation and monitoring and also enhanced inter-agency collaboration and coordination as an important step towards sustainability of project achievements.

The project team, with IPs, made a concerted effort at the initial stage of the project, to hold local inception meetings and thoroughly introduce the project objectives and planned activities to local leadership and communities. Involving local government and community leaders was crucial for planning local activities appropriately, based on local needs and opportunities, for dissemination of project related and early warning information, and for ensuring adherence to by-laws for the protection of natural resources. In this context, local focal points were another crucial element to coordinate and oversee activity implementation at the project sites. They provided the needed linkage between beneficiaries and the project to plan and monitor implementation with local stakeholders.

The evaluation found that support by local communities for the project was strong, which is a key prerequisite to sustain and scale up project results. This local community support could be secured because the project linked climate change adaptation with livelihood strategies that generated tangible results, namely the support to access to finance through VSLA that lead to successful small business development.