

Funding Proposal

FP160: Monrovia Metropolitan Climate Resilience Project

Liberia | United Nations Development Programme (UNDP) | Decision B.28/04

6 April 2021



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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the [GCF Information Disclosure Policy](#), project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

“FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]”



A. PROJECT/PROGRAMME SUMMARY																							
A.1. Project or programme	Project	A.2. Public or private sector	Public																				
A.3. Request for Proposals (RFP)	Not applicable																						
A.4. Result area(s)	<p>Check the applicable <u>GCF result area(s)</u> that the <u>overall</u> proposed project/programme targets. For each checked result area(s), indicate the estimated percentage of <u>GCF budget</u> devoted to it. The total of the percentages when summed should be 100%.</p> <table> <tr> <td><u>Mitigation:</u> Reduced emissions from:</td> <td><u>GCF contribution:</u></td> </tr> <tr> <td><input type="checkbox"/> Energy access and power generation:</td> <td>Enter number%</td> </tr> <tr> <td><input type="checkbox"/> Low-emission transport:</td> <td>Enter number%</td> </tr> <tr> <td><input type="checkbox"/> Buildings, cities, industries and appliances:</td> <td>Enter number%</td> </tr> <tr> <td><input type="checkbox"/> Forestry and land use:</td> <td>Enter number%</td> </tr> <tr> <td><u>Adaptation:</u> Increased resilience of:</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Most vulnerable people, communities and regions:</td> <td>53.7%</td> </tr> <tr> <td><input type="checkbox"/> Health and well-being, and food and water security:</td> <td>Enter number%</td> </tr> <tr> <td><input checked="" type="checkbox"/> Infrastructure and built environment:</td> <td>46.3%</td> </tr> <tr> <td><input type="checkbox"/> Ecosystem and ecosystem services:</td> <td>Enter number%</td> </tr> </table>			<u>Mitigation:</u> Reduced emissions from:	<u>GCF contribution:</u>	<input type="checkbox"/> Energy access and power generation:	Enter number%	<input type="checkbox"/> Low-emission transport:	Enter number%	<input type="checkbox"/> Buildings, cities, industries and appliances:	Enter number%	<input type="checkbox"/> Forestry and land use:	Enter number%	<u>Adaptation:</u> Increased resilience of:		<input checked="" type="checkbox"/> Most vulnerable people, communities and regions:	53.7%	<input type="checkbox"/> Health and well-being, and food and water security:	Enter number%	<input checked="" type="checkbox"/> Infrastructure and built environment:	46.3%	<input type="checkbox"/> Ecosystem and ecosystem services:	Enter number%
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<input type="checkbox"/> Ecosystem and ecosystem services:	Enter number%																						
A.5. Expected mitigation impact	N/A	A.6. Expected adaptation impact	<p>Direct: 250,000 people Indirect: 1 million people (population of Monrovia)</p> <p>25 % of country population</p>																				
A.7. Total financing (GCF + co-finance)	25,638,905 USD	A.9. Project size	Small (Upto USD 50 million)																				
A.8. Total GCF funding requested	17,255,755 USD		Small (Upto USD 50 million)																				
A.10. Financial instrument(s) requested for the GCF funding	<p>Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.</p> <table> <tr> <td><input checked="" type="checkbox"/> Grant</td> <td><input type="checkbox"/> Equity</td> <td>Enter number</td> </tr> <tr> <td><input type="checkbox"/> Loan</td> <td><input type="checkbox"/> Results-based</td> <td>payment</td> </tr> <tr> <td><input type="checkbox"/> Guarantee</td> <td>Enter number</td> <td>Enter number</td> </tr> </table>			<input checked="" type="checkbox"/> Grant	<input type="checkbox"/> Equity	Enter number	<input type="checkbox"/> Loan	<input type="checkbox"/> Results-based	payment	<input type="checkbox"/> Guarantee	Enter number	Enter number											
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<input type="checkbox"/> Guarantee	Enter number	Enter number																					
A.11. Implementation period	6 years	A.12. Total lifespan	30																				
A.13. Expected date of AE internal approval	12/20/2019	A.14. ESS category	BB																				
A.15. Has this FP been submitted as a CN before?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has Readiness or PPF support been used to prepare this FP?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				
A.17. Is this FP included in the entity work programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.18. Is this FP included in the country programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				



A.19. Complementarity and coherence	<i>Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.</i> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.20. Executing Entity information	The Government of Liberia (GoL) represented by the Environmental Protection Agency (EPA) will serve as Executing Entity (EE) for the project.
A.21. Executive summary (max. 750 words, approximately 1.5 pages)	
<ol style="list-style-type: none">1. Liberia's capital city, Monrovia¹, is extremely vulnerable to the climate change impacts of sea-level rise (SLR) and the increasing frequency of high-intensity storms, both of which contribute to coastal erosion and shoreline retreat. SLR is a significant contributor to accelerated coastal erosion, and along with the increasing intensity of offshore storms and waves, exacerbates coastal erosion, the impacts of which result in significant damage to buildings and infrastructure in Monrovia's coastal zone. Additionally, SLR is threatening the sustainability of ecosystem services provided by mangroves in the Mesurado Wetland² at the centre of the Monrovia Metropolitan Area (MMA), which is further exacerbated by urban encroachment into, and over-exploitation of the mangroves. These changes negatively impact the habitat for economically important fish species and the loss of these nursery areas will have a considerable impact on the fishery-based livelihoods of approximately 55,000 Monrovians, 46% of whom are women.2. The most vulnerable part of the MMA coast is West Point, an impoverished and densely-populated informal settlement situated on a narrow spit between the coast and the Mesurado Wetland, with dwellings built up to the shoreline. In the last decade³, coastal erosion has caused the shoreline to regress by 30 m, leading to the loss of 670 dwellings and threatening public spaces and boat launching sites that are critical to fishery-based livelihoods. Without intervention — and with the added impact of climate change — coastal erosion is expected to cause further shoreline regression of 190 m by 2100. This is equivalent to an additional 110% more than the coastal retreat expected under a non-climate change or baseline scenario⁴.3. To adapt to the severe impacts of climate change on Monrovia's coast, it is necessary to change the current approach to addressing the impacts of climate change from a focus on short-term solutions to long-term integrated and participatory planning that involves the public sector, private sector and communities at all levels of governance. The proposed project is requesting GCF support to address barriers to effective climate change adaptation in the coastal zone of Monrovia, and Liberia more generally, through interventions in three inter-related focus areas: i) coastal protection; ii) coastal management; and iii) diversified climate-resilient livelihoods. In this way, the proposed project will build the long-term climate resilience of coastal communities in Liberia by both addressing immediate adaptation priorities and creating an enabling environment for upscaling coastal adaptation initiatives to other parts of Monrovia and Liberia.4. The project will address one of the most urgent adaptation needs in Monrovia by constructing a rock revetment to protect West Point against coastal erosion and storms. The revetment was selected as the preferred solution, because while a 'soft solution' in the form of beach nourishment with an associated groyne was considered technically feasible, the sustainability of this option would be limited, because the regular maintenance required was not feasible in the local context⁵. From an infrastructural perspective, the project will protect and build the climate resilience of approximately 10,800 people in West Point and avoid damages of up to USD 47 million to the individual and communal property of West Point residents as well as securing launch sites for fishing boats which	

¹ In this proposal, 'Monrovia' and the 'Monrovian Metropolitan Area' (MMA) are used interchangeably to refer to the jurisdictional or administrative entity of the MMA.

² the estuary of the Mesurado River

³ 2008 to 2018

⁴ See Annex 2.B (Vulnerability Sub-assessment) for Economic and Financial Analysis of Monrovia Metropolitan Area, and specifically West Point.

⁵ Stabilising or 'fixing' the shoreline by means of a rock revetment is the preferred solution to coastal erosion at West Point by both the Government of Liberia and affected communities. This approach also represents the most socially sensitive design because it requires low-to-no maintenance while still accommodating boat launching and landing. A rubble mound revetment with rock armour, which is able to withstand extreme wave conditions and storm events, is proposed. The Engineering Sub-assessment Report (Annex 2.C) showed that the northern portion of the proposed revetment is a less dynamic wave environment, and the conceptual design for this portion of the intervention site consequently proposes lighter rock armour. The 'toe' of the structure will consist of a resistant geotextile and will be anchored in the existing beach sediment to a level of 5m below mean sea-level to account for future deepening of the area directly in front of the revetment. A six-metre wide promenade, for access to the shoreline and recreation activities, is proposed between the revetment and existing dwellings at West Point. Two boat launching and landing sites are proposed as part of the preferred option at the southern end and centre of the revetment, respectively. These launch and landing sites will be provided in addition to the open beach area to the north of the proposed revetment, where fishing boats are already launching and landing. Further details on the stakeholder engagement process that led to this decision is available in Annex 2.A Feasibility Study, Section 10.2 Analysis of coastal defence options.



will have a positive impact on the fisheries sector. The construction of this coastal protection infrastructure will form part of a strategic, cohesive coastal adaptation strategy using an Integrated Coastal Zone Management (ICZM) approach.

5. The paradigm shift necessary for adopting an evidence-based and participatory ICZM approach across Liberia will be facilitated by the proposed project through initiatives to strengthen the technical and institutional capacity of the government and communities to adapt to the rapidly changing coastal landscape and to undertake long-term, climate-responsive planning on the coast. Based on quantitative, defensible scientific data in coastal management and planning, the proposed project will develop a national-scale high-resolution multi-criteria vulnerability map and design a national ICZM Plan (ICZMP) for Liberia in consultation with all relevant stakeholders, including the private sector. By fostering partnerships among government institutions and between the Government of Liberia (GoL), private sector actors, research institutions and communities, the project will improve coordination on coastal management and create an enabling environment for ongoing coastal adaptation beyond the project area and after the project implementation period.
6. The proposed project will increase local adaptive capacity by strengthening gender- and climate-sensitive livelihoods and protecting mangroves in the Mesurado Wetland within Monrovia. Specifically, adaptative capacity in Monrovia will be increased by: i) safeguarding ecosystem services provided by mangroves and increasing the resilience of these ecosystems to climate change, through community co-management agreements between government and communities; ii) improving community knowledge on climate change impacts and adaptation practices; and iii) strengthening climate-sensitive livelihoods and supporting the uptake of climate-resilient livelihoods. This is an important element of the integrated approach because while the development of ICZMP will improve coastal management at an institutional level, limited institutional capacity in Liberia means that capacitating communities to engage positive adaptation strategies is critical to ensure an increase in their long-term climate resilience. The latter two activities will be based at the innovation and education centre — to be established in West Point. In addition to being the focal point for climate-resilient livelihood development, the innovation and education centre will act as a hub for awareness-raising and other community-led actions being implemented under the project⁶. An exit strategy and O&M plan (Annex 21) will ensure that the proposed project activities will be sustained in the long-term⁷.
7. These investments by the GCF and the Government of Liberia (GoL) will catalyse a paradigm shift in the management of Monrovia's coastal zone towards an integrated, transformative and proactive approach that addresses current and anticipated climate change risks and which mixes both infrastructure (where necessary) and coastal ecosystems in adaptation efforts. This will directly benefit a total of ~250,000 people in the communities of West Point through coastal defence and enhanced livelihoods; and through enhanced livelihoods and improved protection of mangrove ecosystems in the communities of Topoe Village; Plonkor and Fiamah; and Nipay Town and Jacob's Town. In addition, the project will indirectly benefit approximately one million⁸ people through the adoption of a transformative, climate risk-informed ICZM approach for Liberia, with the first phase of implementation focused on the Monrovia Metropolitan Area (MMA). The combination of direct and indirect beneficiaries under this project will ultimately confer adaptation benefits on one quarter of the total population of Liberia.

⁶ Recognising the risks of the COVID-19 pandemic, all project activities will operate strictly within government mandated regulations and best practices. All government directives, such as lockdowns and mandatory quarantine will be adhered to, as will any restrictions on travel, organisation of events or sizes of meetings and workshops.

⁷ Further information on the exit strategy and sustainability of the proposed project can be found in Section B.6.

⁸ Direct benefits will accrue at the site-specific scale, whereas indirect benefits will accrue at the municipal scale — i.e. the population of MMA, which is estimated at one million people.



B. PROJECT/PROGRAMME INFORMATION

B.1. Climate rationale and context (max. 1000 words, approximately 2 pages)

Context

8. Liberia's capital, Monrovia, has a population of over a million people, with many of the city's most vulnerable communities located along the highly exposed coastal zone. These communities are largely reliant on fishery-related livelihoods, which has resulted in a proliferation of impoverished people settling in densely populated neighbourhoods that extend right up to the shoreline⁹. Although the combination of accessible natural resources and proximity to central markets makes neighbourhoods in the coastal zone popular for local residents, their exposure to coastal hazards such as storm surges and coastal erosion makes these densely-populated settlements extremely vulnerable to the impacts of climate change. With the physical characteristics of the shoreline offering very limited natural coastal defence, extensive erosion already causes significant damage to coastal infrastructure¹⁰. In addition, the limited availability of land along the coast has also led to unplanned urban expansion into the mangrove forests within the Mesurado Wetland¹¹. This urban expansion, along with the harvesting of natural resources — such as fuelwood — has increased the pressure on this estuary which provides ecosystem services to coastal communities, including the provision of critical breeding habitats for economically-important fish species. These problems of baseline erosion from natural, dynamic coastal processes that already threaten coastal communities in risk-prone areas and the degradation of mangrove ecosystems, are expected to be greatly exacerbated by climate change; see below and Section 4 of Annex 2.A: Feasibility Study (FS)¹².
9. Over the last decade, accelerated coastal erosion has caused shoreline retreat of ~30 m at the Monrovian community of West Point, leading to the loss of ~670 dwellings and threatening public spaces and boat launching sites that are critical to fishery-based livelihoods. The loss of dwellings and infrastructure due to accelerated coastal erosion between 2008 and 2018 is clearly visible in Figure 1. A detailed assessment of the different factors (both climate and non-climate related) contributing to coastal erosion at West Point can be found in Sections 2.10 and 3.1 of the FS¹³.

⁹ Further information on Monrovia's coastal communities' socio-economic conditions is provided in Annex 2.A: Feasibility Study, Section 1.

¹⁰ Section 3.1 of Annex 2.A: Feasibility Study provides details of the two major impacts of climate change in Monrovia, flooding and coastal erosion resulting in shoreline retreat.

¹¹ The Mesurado estuary has been declared a Ramsar wetland site.

¹² Section 4.3 of Annex 2.A: Feasibility Study provides details on the impacts of climate change on mangrove ecosystems in Liberia and the Monrovia area.

¹³ Section 2.10 of Annex 2.A: Feasibility Study elaborates the on biophysical factors that have resulted in coastal retreat by summarising the bathymetric, tidal and wave conditions which characterise the nearshore and offshore environment of Monrovia and Section 3.1 provides details of the two major impacts of climate change in Monrovia, flooding and coastal erosion resulting in shoreline retreat.



Figure 1. Position of the coastline at West Point and the mouth of the Mesurado Wetland in 2008 (left image and in red) and 2018 (right image and in blue).

Climate change impacts

10. Accelerated coastal erosion, resulting from a combination of sea-level rise (SLR) and an increase in the frequency of high-intensity storms, poses a substantial threat to the homes, assets and livelihoods of coastal communities in Monrovia. In addition, SLR is likely to negatively impact the mangrove ecosystems in the Mesurado Wetland, on which many livelihoods depend. An analysis of these two climate change impacts, summarised below, has informed the design of the proposed project, which will support urgent coastal adaptation and reduce vulnerability to these impacts of climate change. Modelling of additional climate variables, related to precipitation and temperature, has also informed aspects of the project design.

Coastal erosion and sea-level rise

11. Climate projections under Representative Concentration Pathway (RCP) 8.5 predict SLR (Figure 2) of 75 cm by 2100 along Liberia's coast (a conservative estimate assuming no contribution from melting ice sheets), as well as an increase in the frequency of high-intensity storms resulting in an increased offshore significant wave height^{14,15}. The combined effect of these climate impacts will rapidly increase the rate of coastal erosion in Monrovia, threatening local communities and coastal infrastructure (see FS Section 3.2). In addition to increased coastal erosion, climate change will impact vulnerable coastal communities in Monrovia through: i) degradation of the

¹⁴ The significant wave height is the average height of the highest one-third of all waves measured which is equivalent to the estimate that would be made by a visual observer at sea. The significant wave height profile along Liberia's coast is shifting towards an increase in the occurrence of all large waves. The return period of extreme storm events that historically occurred once every 100 years are projected to decrease to 1 in 40 years under RCP4.5 and 1 in 25 years under RCP8.5 by the year 2100.

¹⁵ Sections 3.4.1–3.4.3 of Annex 2.A: Feasibility Study provide details on the impacts of climate change on the forcing mechanisms of coastal erosion; sea-level rise, wave conditions and storm conditions, respectively.



mangrove ecosystems on which their livelihoods and food security depend¹⁶; and ii) inundation of vital infrastructure such as boat-launch sites, dwellings and socio-economic spaces and amenities such as fish markets¹⁷.

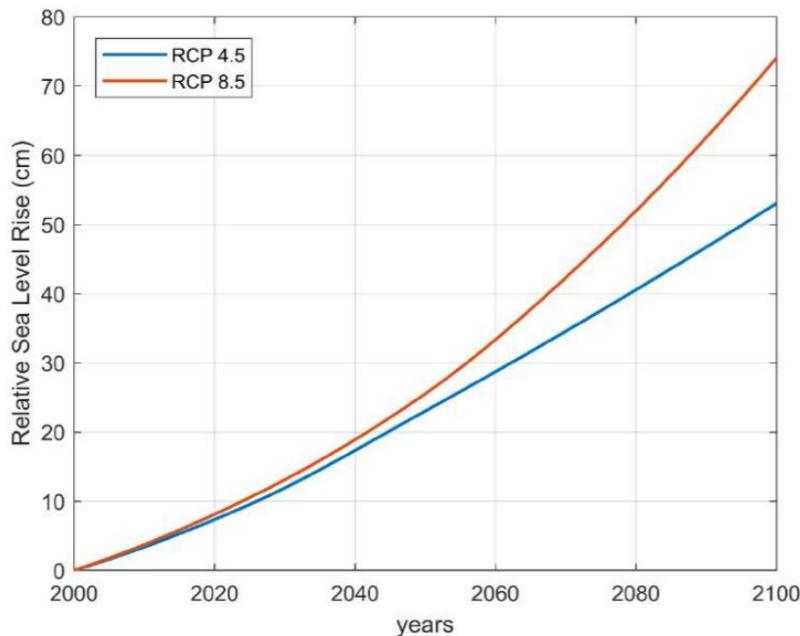


Figure 2. Projected relative sea-level rise for RCP4.5 and RCP8.5.

12. Section 3.3.2 of the FS — through modelling the impact of SLR, waves and sediment transport under future climate conditions — demonstrates that of the five most vulnerable sections of Monrovia's coastline (Figure 3), West Point (labelled Section 3)¹⁸ is the most at risk in terms of both exposure and sensitivity¹⁹. In West Point, erosion induced through climate change factors (SLR, increased significant wave height, as well as changes in runoff and sediment transport) will result in coastal retreat of an additional 190 m by 2100 (Figure 4 and Figure 5). This is equivalent to an additional 110% more than the coastal retreat expected under a non-climate change, or baseline, scenario. Between 2008 and 2018, observed shoreline regression was 30 m at West Point, with further losses up to 10m occurring in early 2019. These losses are consistent with the losses modelled under the RCP8.5 climate scenario (note that expected changes under RCP4.5 are also provided in the FS) over the same time period (see FS, Section 3.6). Without intervention, an additional USD 40–48 million²⁰ worth of damage is anticipated to occur at West Point by 2100. Given its extreme exposure and vulnerability, West Point was selected as the main target site for coastal protection interventions under this project. Figure 4 below highlights how West Point (Section 3, orange line) is expected to experience the highest percentage of additional climate-induced coastal erosion between 2020 and 2100, while Figure 5 indicates the coastal profile at West Point under storm conditions with a return period of 100 years under RCP8.5 (see FS Section 3 for similar changes under RCP4.5) in 2100.

¹⁶ Climate change degrades mangroves through inundation because of SLR and through changes in water temperature, salinity and sediment transport. For more information see GEF Project Document. 2016. Improve sustainability of mangrove forests and coastal mangrove areas in Liberia through protection, planning and livelihood creation – building blocks towards Liberia's marine and coastal protected areas. Available at:

https://www.conservation.org/docs/default-source/gef-documents/liberia-mangroves/5712-liberia-mangroves-prodoc-20160311.pdf?sfvrsn=20715c6e_2.

¹⁷ Further information on climate change impacts on Monrovia is provided in Annex 2.A: Feasibility Study, Sections 3 and 4.

¹⁸ West Point is a densely populated neighbourhood situated between the ocean and the Mesurado estuary, with houses extending right onto the shore.

¹⁹ Further information is provided in Section 4 of Annex 2.A: Feasibility Study and Chapters 4 and 5 of Annex 2.B: Vulnerability Sub-assessment.

²⁰ based on current value, optimistic and pessimistic socio-economic scenarios, Annex 2.B: Vulnerability Sub-assessment, Chapter 5

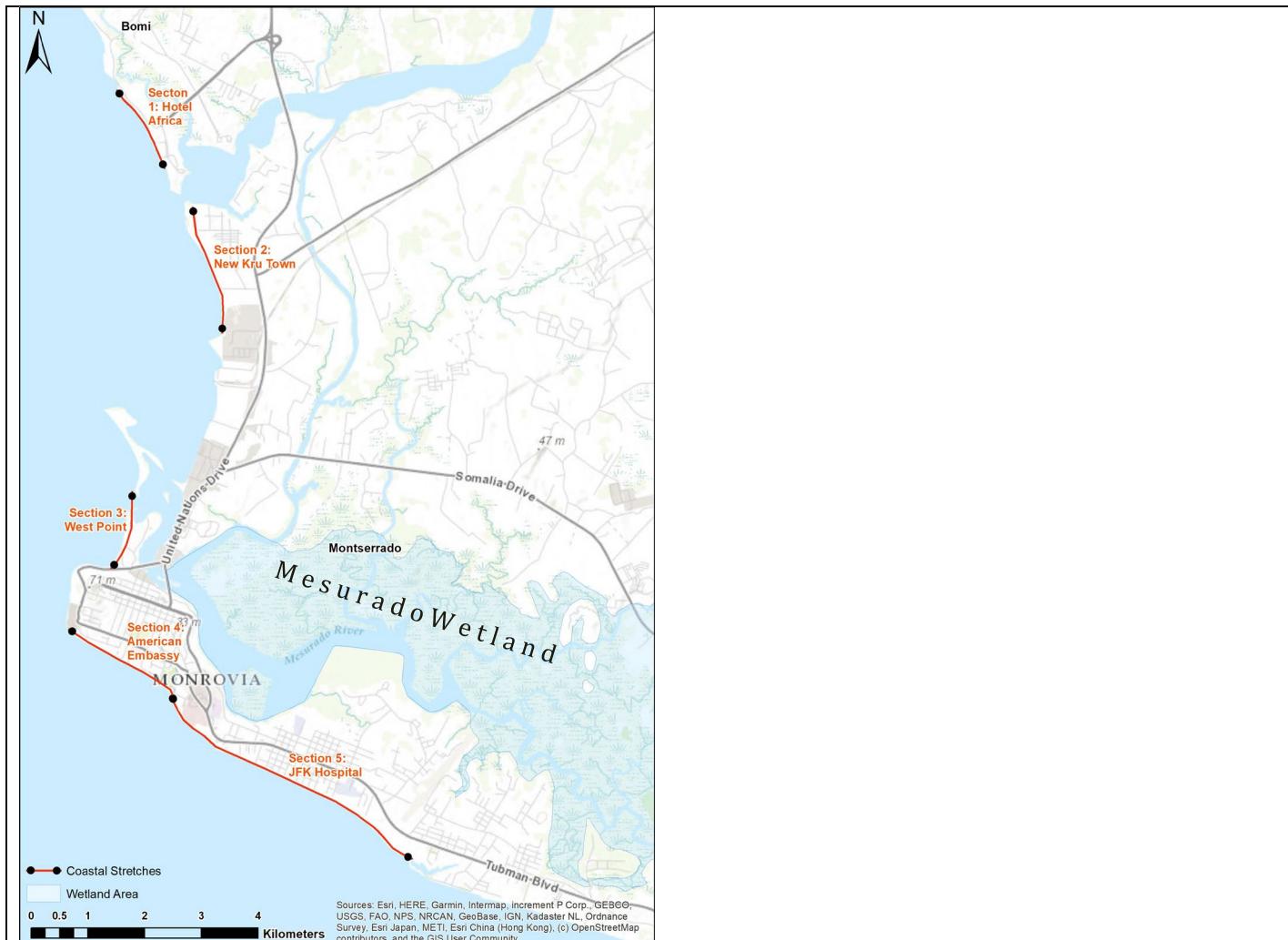


Figure 3. Map of Monrovia's coastline depicting five vulnerable areas identified under the Vulnerability Sub-assessment (Annex 2.B). The Mesurado Wetland is shown in the centre of the map.

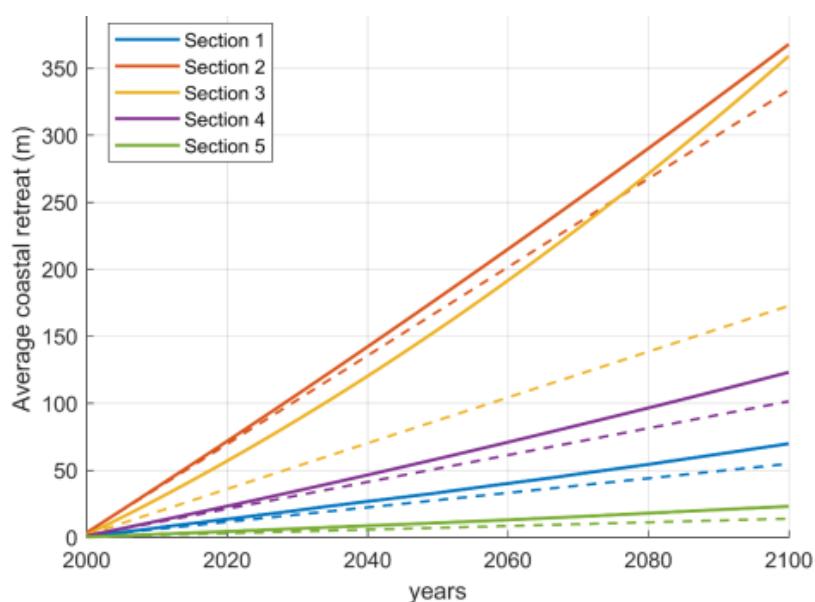




Figure 4. Average coastal retreat between 2000 and 2100 for five coastal sections in Liberia with (continuous lines) and without (dashed lines) climate change under RCP 8.5 (Annex 2.B: Vulnerability Sub-assessment). West Point is shown in orange, i.e. Section 3.

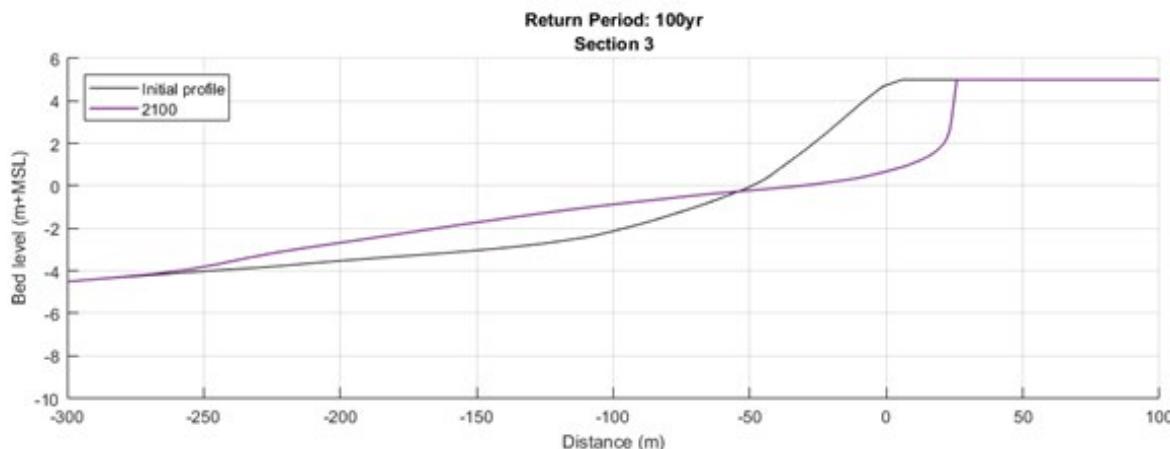


Figure 5. Modelled coastal profile for storm with return period of 100 years for RCP 8.5 in 2100 at West Point (Section 3).

13. In addition to the damage to infrastructure, climate change will also affect the livelihoods of communities in West Point and beyond, of which fishing is the most important. This makes coastal protection measures only part of the solution needed to adapt to climate change in Monrovia, with enhancing climate-resilient livelihoods being important for medium- and long-term climate resilience. Mangroves in the Mesurado Wetland play a critical role as the spawning ground for the fish stocks sustaining the local fishing industry²¹, as well as in supporting other livelihood activities, including charcoal production and fish smoking²². Development pressure and inadequate land-use planning have, however, resulted in people settling in and around the mangroves. This, along with other anthropogenic impacts such as unsustainable harvesting of fuelwood, has led to the degradation of mangrove ecosystems in parts of the Mesurado Wetland (Figure 6)²³.
14. Annex 2.D provides more comprehensive baseline information and analysis for the mangrove components of the project. This analysis is based on the best available data, employing a combination of quantitative analysis and qualitative validation methods²⁴, including: i) identification of degradation trends and hotspots using time-series spatial data; ii) problems and root causes of mangrove degradation; iii) relevant past and ongoing projects; and iv) lessons learned and best practices.

²¹ Mangrove systems around Monrovia are important breeding grounds for various commercially viable aquatic species, including fish, crabs, shrimps and water snail.

²² For further details on the importance of the mangrove ecosystems in the Mesurado Wetland to Monrovians, see Section 3.1 of Annex 2.D: Mangrove Sub-assessment

²³ The results of a comprehensive spatio-temporal analysis of mangrove degradation in the Mesurado Wetland are provided in Section 2 of Annex 2.D: Mangrove Sub-assessment while a summary is provided in Section 5 of Annex 2.A. Feasibility Study.

²⁴ A first draft of this mangrove-focused annex has been included as part of this revised submission as Annex 2.D. Following the analysis of secondary data, proposed project activities will be revised. The revised activities will then be presented to relevant Liberian stakeholders for validation and review. Relevant stakeholders to this end include various technical experts from inter alia Conservation International (having implemented a number of mangrove-related projects in Liberia), UNDP, and the EPA. This analysis will be used to redesign Output 3 based on the feedback received from GCF, as well as the validation described above.

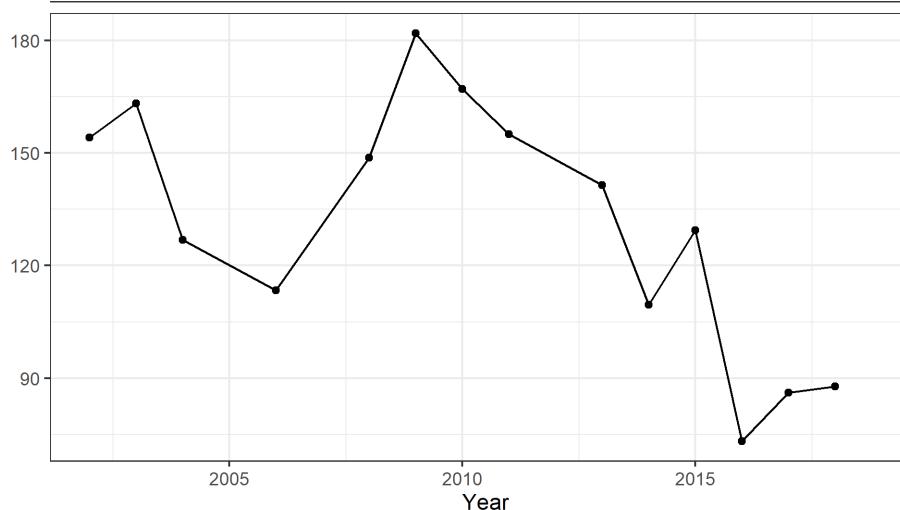
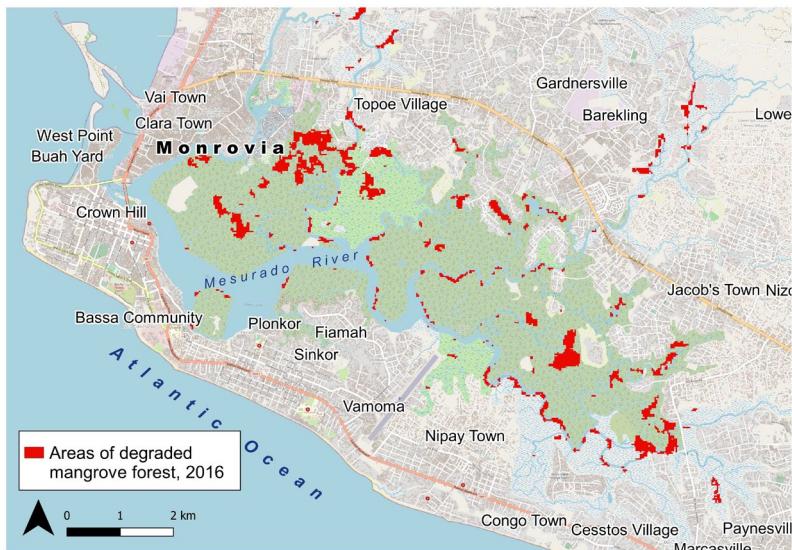


Figure 6. Map showing spatial location and graph showing loss of mangrove cover (ha) over time in areas of the Mesurado Wetlands between 2002 and 2019. Data supplied by Global Mangrove Watch.

15. Climate change is likely to exacerbate the threats of baseline degradation and compromise the ecosystem services provided by the wetlands. SLR (Fig. 2) presents a substantial threat to mangroves in the Mesurado Wetlands, as it is likely to increase the depth of the water beyond the threshold at which they can survive, thereby reducing the area in which mangrove ecosystems are viable. In addition, the increasing number of hot days projected under future climate conditions is likely to place physiological strain on the mangrove and reduce their ability to photosynthesise. Further details on the impacts of climate change on mangroves in the Mesurado Wetlands are provided in Section 4.3 of the FS (Annex 2A). As a result of these impacts on mangroves, climate change will impact the sustainability of the fishery industry, on which approximately 3,000 fisherfolk and 9,000 fishmongers in Monrovia depend for their livelihoods. Given that most fishmongers in Monrovia are women, the loss of the mangroves will disproportionately affect women and exacerbate existing gender inequality.



Figure 7. Proposed revetment intervention at Section 3 - West Point (Annex 2.C: Engineering Sub-assessment).

Temperature

16. Projections indicate that maximum temperatures are likely to increase towards the end of the century. An increase in the number of hot days (where the maximum temperature exceeds 30°C) is also expected under future climate conditions (Figure 8). Like SLR, the temperature increase is projected to have an impact on the mangrove ecosystems of the Mesurado Wetland. The optimum leaf temperature for mangrove photosynthesis is 29–32°C, while the threshold above which photosynthesis ceases is 38–40°C. Therefore, warmer temperatures may benefit mangrove growth below this threshold. Similarly, the impacts of temperature changes on fisheries and other livelihoods are likely to be mixed and dependent on the physiological thresholds of economically important species (further details are provided in Section 4 of the FS). The impacts of changing temperatures on mangrove ecosystems have been considered in the design of mangrove conservation initiatives under Output 3 of the project.

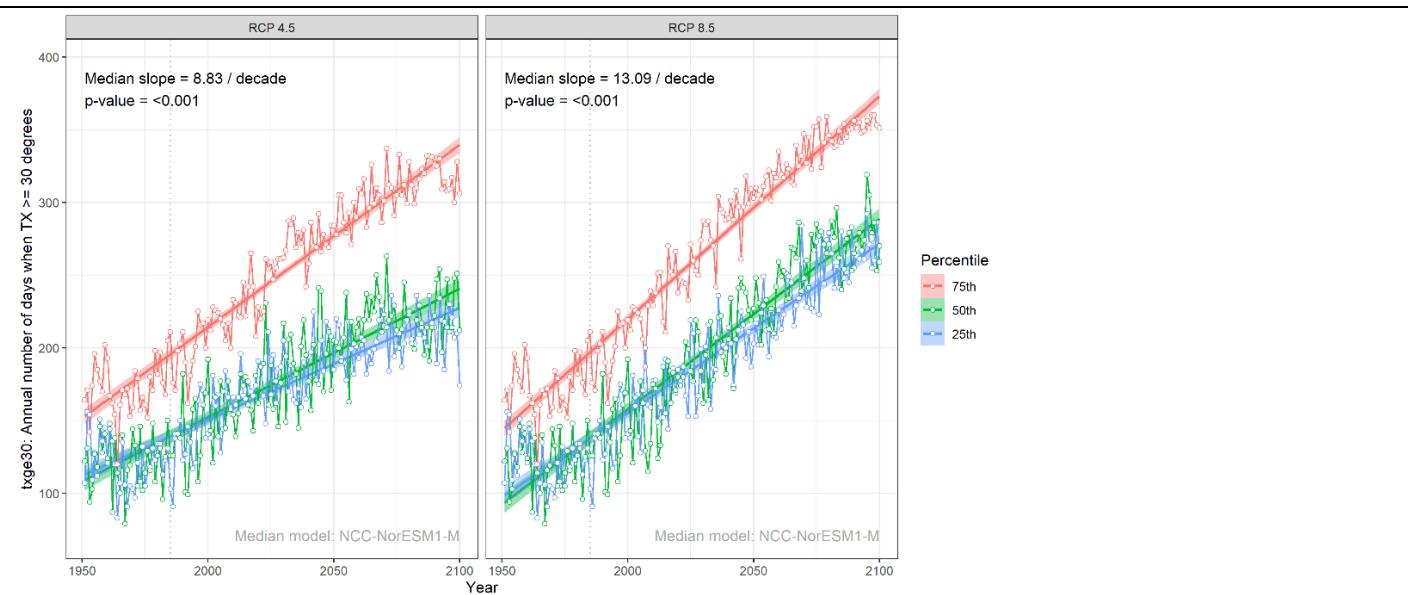


Figure 8. Annual number of hot days where maximum temperature exceeds 30°C.

Precipitation

17. An increase in the frequency of high-intensity storms is projected under future climate conditions (Figure 9). This is likely to increase coastal erosion, as described above. In addition, increased frequency of high-intensity storms will increase flood risk in parts of Monrovia and reduce the ability of fishers to safely operate by making landing sites unsafe and decreasing the number of days where fishers are able to safely operate. The design of the coastal protection measures under Output 1 (Figure 7) include drainage systems to reduce flood risk and protection of boat launching sites for fishers. Unlike the increases in temperature, increased precipitation will not necessarily have a substantial, direct impact on the mangrove ecosystems of the Mesurado wetland — as these mangroves are not wave facing and are partially protected from storm surges. Projections for overall trends in precipitation vary between models and scenarios. Further details of these projections and impacts are provided in Sections 3 and 4 of the FS.

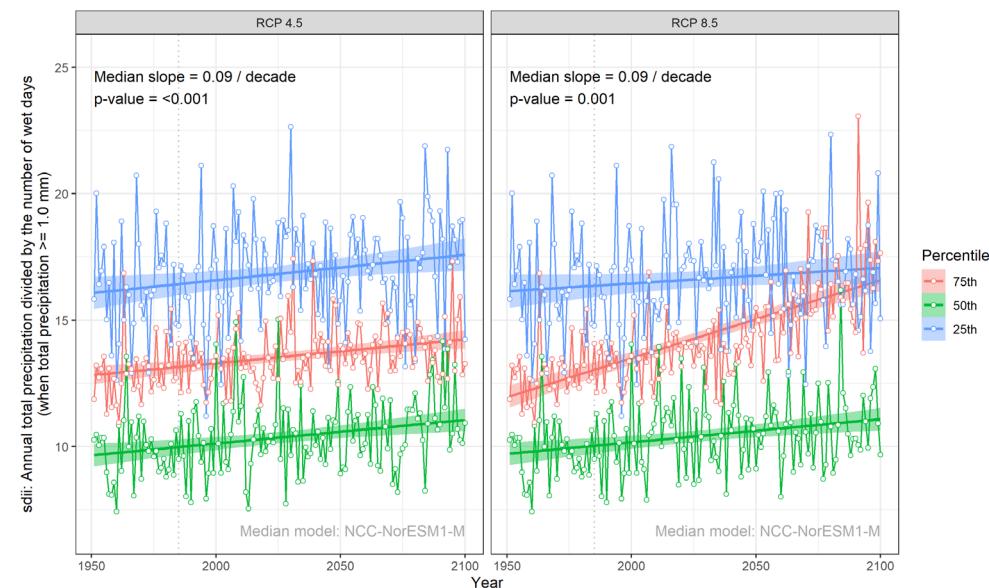


Figure 9. Annual total precipitation divided by the number of wet days where total precipitation exceeds 1.0 mm.

Related Interventions



18. The proposed project is complementary to three recent projects currently under implementation by UNDP and Conservation International (CI) in the MMA under the Global Environment Facility (GEF). Similarly, a recently approved World Bank project with comparable and complementary objectives is also included as an entry point for collaboration with organisations working in Liberia, which will promote economies of scale and improve the efficiency of both projects. The table below summarises the above-mentioned related interventions by showing key results and outcomes, lessons learned, and complementarity of the proposed project with each of the projects.

Table 1. Related projects and interventions.

Proponent/Funder/Date	Project title	Key results	Key lessons learned	Complementarity/upscaling
UNDP/Global Environment Facility (GEF)/2017	Enhancing Resilience of Liberia Montserrado County Vulnerable Coastal Areas to Climate Change Risks II	Reduced the vulnerability of physical assets and ecosystems as well as protecting coastal areas from SLR and coastal erosion in Monrovia	Robust, sustainable coastal protection measures are needed to adequately protect exposed infrastructure and vulnerable communities	The proposed project will complement the installation at New Kru Town and address the gap in spatial coverage by establishing a similar, improved intervention at West Point, drawing on the lessons learned and thereby extending the proportion of Monrovia's coastline that is robustly defended against accelerated coastal erosion and SLR.
Conservation International (CI)/GEF/2016	Improve sustainability of mangrove forests and coastal mangrove areas in Liberia through protection, planning and livelihood creation – building blocks towards Liberia's marine and coastal protected areas	Strengthen the conservation and sustainable use of mangrove forests through effective participatory land-use planning and the establishment of marine and coastal protected areas.	Community-led conservation initiatives are fundamental to measurable gains in the protection of biodiversity and ecosystem services.	While this CI-GEF Trust Fund project aims to establish protected areas in at least 35% of Liberia's mangroves, neither land-use plans, nor community conservation agreements have been established for the Mesurado mangroves. Building on the lessons learned and successes achieved by the above-mentioned GEF project, the proposed GCF project will: i) develop community-led co-management agreements for the mangroves ecosystems in Monrovia; ii) reduce the pressure on the Mesurado Wetland for natural resources by enhancing the resource-efficiency of livelihood activities that depend on the ecosystem; and iii) incorporate the management of mangrove ecosystems into the Integrated Coastal Zone Management Plan (ICZMP).
UNDP/GEF	Cross-cutting Capacity Development	Developing the capacity of the GoL to meet its global environmental obligations. One component of this project is the development of an integrated environmental knowledge	The provision of reliable, defensible information to inform decision-making is fundamental to achieving project impact	The proposed GCF project will build on the activities relating to the EKMS by: i) developing the capacity of the system to serve as an information repository for Integrated Coastal Zone Management (ICZM); ii) capacitating ten government institutions to access and use the system, including the provision of technical equipment; and iii)



		management system (EKMS) to collect, collate and disseminate information relating to environmental priorities, with an emphasis on climate change		developing knowledge products to raise awareness about the EKMS.	
World Bank/IDA/2020	Liberia First Inclusive Growth Development Policy Operation	This project is designed to address weather- and climate-related risks by supporting national adaptation policies, as well as supporting social protection.	Recent national commitments emphasize the socio-economic importance of improved planning, adaptation, resilience, and enhanced disaster-risk management.	The proposed GCF project will align with the World Bank project by including key project personnel from the World Bank team in the cross-sectoral working groups (CSWGs) developed under Output 2. This arrangement will enable the sharing of relevant project information, lessons learned and promote efficient use of project resources. For example, where community and stakeholder consultation is proposed, a unified approach to consultation that includes both projects will be adopted to save costs and time.	
African Development Bank (AfDB)/GCF/2021	Enhancing Climate Information Systems for resilient development in Liberia (Liberia CIS)	Strengthen Liberia's multi-hazard impact-based forecasting and early warning systems (MH-IBF-EWS) through improved meteorological and hydrological systems	Reliable, timely and extensive data is needed for effective monitoring, forecasting and early warning for sector- and location-specific response planning and disaster management	The proposed project will utilise information generated by the monitoring systems improved under the AfDB/GCF project to inform the development of a national ICZM Plan for Liberia. Spatial and biophysical coastal data generated under the proposed project will also be incorporated into the MH-IBF-EWS developed under the AfDB/GCF project..	
UNDP/GEF/ project under development	Enhancing the resilience of vulnerable coastal communities in Sinoe County of Liberia	Protect assets and enhance livelihood diversification of Liberian coastal communities through the implementation of sea and river defense management	Incorporating sea and river defense management into ICZM is necessary to ensure adequate climate change adaptation planning and addressing of climate change impacts and risks.	The proposed GCF project contributes to and aligns with the proposed GEF project interventions to increase climate change adaptation and resilience through innovative technologies and initiatives to promote the sharing of climate-related information. In addition, the proposed GCF and GEF projects both contribute to increasing the resilience of coastal communities and ecosystems from climate change-induced sea-level rise (SLR) and subsequent coastal erosion. The GEF project will focus on Sinoe County for coastal protection measures and all other coastal counties for policy and capacity building thereby upscaling initiatives under the GCF project in Monrovia.	



19. In addition to the projects listed above, Liberia's approved Readiness Proposal supports the Government of Liberia to advance its National Adaptation Planning (NAP) process in climate-sensitive sectors and is underpinned by four key outputs. These outputs are summarised below, along with text demonstrating complementarity with the activities proposed under this project:
20. (A) Strengthening institutional frameworks and coordination for implementation of the NAP process: the proposed project will make a strong contribution to strengthening Liberia's adaptation-related institutions, particularly the national ministries responsible for coastal zone management, i.e. the Ministry of Mines and Energy (MME), Ministry of Finance and Development Planning (MFDP) and the Ministry of Public Works (MPW). Specifically, the project will strengthen Liberia's existing ICZM framework by working with relevant government institutions to develop a national Integrated Coastal Zone Management Plan (ICZMP) that addresses climate change risks through a participatory and consultative process. Development of the plan will be led by a service provider with experience in developing and implementing climate risk-informed ICZM. To ensure the plan is effective and implementable it will be developed through a phased approach, whereby the first phase will entail producing a high-resolution, multi-criteria vulnerability map of the entire Liberian coastline. The second phase will entail the development of a national climate-responsive ICZMP through a collaborative process led by international and national experts. The plan will be developed based on the high-resolution vulnerability map and extensive stakeholder consultations. To ensure effective implementation of the ICZMP across the relevant government sectors, an ICZM Committee and Cross-Sectoral Working Group (CSWG) will be established under this phase, with the explicit mandate of ensuring the integration of climate risks and the alignment and conformity of the ICZMP across the relevant government sectors. The CSWG will develop a detailed action plan for the implementation of the ICZMP, identifying sector-specific regulations and by-laws for updating and integrating ICZM principals. Additionally, during the second phase, the ICZMP will be implemented in Monrovia with support from the GCF grant financing of the project. The final phase of the ICZMP development will entail updating the ICZMP three years after the initial plan has been developed. This will ensure that lessons learned during the implementation process in Monrovia are incorporated into the second iteration of the ICZMP, which will facilitate the upscaling of this activity through ICZMP implementation across Liberia.
21. (B) Expansion of the knowledge base for scaling up adaptation: cross-sectoral capacity development and knowledge empowerment are fundamental informants of the activities under Output 2 of the proposed project. Specific aspects that address the need to expand the national knowledge base and create an enabling environment to scale up adaptation include, but are not limited to: strengthen the technical capacity of the CSWG established under Sub-activity 2.1.3 to implement the ICZMP through long-term training via a Training-of-Trainers (ToT) approach. To support the effective implementation of the ICZMP developed under Activity 2.1, the project will host workshops on ICZM planning and implementation to build the capacity of the CSWG and additional representatives from all relevant government institutions. As part of this process, a detailed action plan for sector-specific implementation of the ICZMP will be developed by the CSWG to facilitate the integration of ICZM into relevant by-laws and regulations. Capacitating technical personnel responsible for overseeing the uptake of implementation of ICZM across all relevant sectors will support the effective execution, management and uptake of ICZM within the MMA as well as facilitating upscaling across the country.
22. (C) Building capacity for mainstreaming climate change adaptation into planning, and budgeting processes and systems: similarly, activities within the project that promote the mainstreaming of climate change adaptation into Liberia's national processes and systems include a training and action programme for members of the CSWG to mainstream ICZM into relevant government entities and support mainstreaming of ICZM and coastal adaptation into national policies, programmes and plans. Sub-activity 2.2.5 has been designed with this need in mind: the international expert contracted under Sub-activity 2.2.3 will conduct a 16-week, phased training programme for the members of the CSWG and two additional technical personnel from each of the 10 government institutions. This long-term training programme will include instruction on the implementation of the ICZMP, important considerations for cross-sectoral collaboration and will also include training on how to conduct the course for additional members within each institution. This training programme will emphasise knowledge and tools for integrating climate risks, mainstream action plans and will support the different institutions to perform their roles and meet targets as specified in the ICZMP. This will build the capacity of institutional representatives to effectively implement the ICZMP, further capacitate government technical staff and ensure alignment between all relevant institutions,



thereby supporting cross-sectoral collaboration and the uptake of ICZM across Liberia. The international expert will also provide support to the different institutions for mainstreaming and implementing the ICZMP.

23. (D) Formulation of financing mechanisms for scaling: The project's main contribution to innovative finance mechanisms that create an enabling environment for upscaling is under Output 3, where the adaptive capacity of vulnerable communities will be strengthened and innovation enabled by supporting local fishery-based livelihoods through sustainable co-management of mangrove areas and providing training to catalyse the uptake of diversified climate-resilient livelihoods, thereby implementing ICZM at the municipal scale. Capacity development of this nature will be achieved through informing community members on how to use solar-powered cold storage facilities (Annex 2.D: Mangrove Assessment Section 6.1.1) and training those involved in small-scale informal enterprises to manufacture and sell eco-friendly products such as energy-efficient cookstoves. To this end, Activity 3.4. is particularly relevant. This activity will establish small-scale manufacturing facilities and develop training material to capacitate community members to manufacture and sell cookstoves to support alternative climate-resilient livelihoods and improve management of mangrove ecosystems²⁵. The facilities will be incorporated into the education and innovation centre and will focus on producing energy-efficient products with a specific emphasis on activities suitable for women and other vulnerable groups, in collaboration with the CSC established under Activity 3.1. The focus on energy-efficient cookstoves was selected because there is a market for these stoves in Monrovia and the construction of the stoves requires minimal material input or training. Training materials will be made publicly accessible to support the upscaling of the activity to other parts of Monrovia.
24. While past and ongoing initiatives have made some progress in limiting the impact of climate change and coastal erosion on vulnerable communities, several gaps in the successful implementation of climate-responsive coastal adaptation are still prevalent in Liberia²⁶. These gaps include limited: i) financial capacity of the public sector to invest in climate-resilient development; ii) technical capacity of both local- and national-level governments to interpret climate information and integrate ecosystem-based approaches into decision-making; iii) institutional and financial capacity for climate-resilient land-use planning and enforcement; iv) policy support, as well technical and financial capacity for adopting and implementing ICZM at all levels of government; v) awareness of predicted climate change impacts among coastal communities and government-level decision-makers; vi) awareness about the importance of ecosystem services for livelihoods; and vii) opportunities for alternative, climate-resilient livelihoods. Additional investment from the GCF is sought to enable interventions to address these gaps and ensure that planning and development along the Liberian coastline is integrated, climate-responsive and supports the country's adaptation priorities.

B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

Problem statement

25. The proposed project will address the extremely urgent climate change-induced problem of accelerated coastal erosion and vulnerability of the climate-sensitive fishery industry in Monrovia, as well as mitigating the ongoing degradation of mangrove ecosystems in the Mesurado Wetlands. The accelerated rate of coastal erosion is directly linked to SLR and the increasing frequency of high-intensity storms, which enhance the erosion potential of waves (Figure 10)²⁷. The combined effect of SLR and changes in storm intensity is exacerbating current erosion — and expected to increase shoreline retreat along the densely-populated coastline by 110% over the next 80 years, with significant impacts in terms of damage to buildings and infrastructure. The absolute urgency of this scenario is illustrated by the loss of ~ 10m of shoreline at West Point between January and July 2020, according to anecdotal sources. In addition to accelerating coastal erosion, climate-induced SLR will lead to the loss of mangroves in the Mesurado Wetland (Annex 2.A: Feasibility Study, Section 4.3), exacerbating ongoing baseline degradation and

²⁵ While energy-efficient cookstoves are expected to facilitate a reduction in greenhouse gas emissions, the emission reduction co-benefits of this activity during the project lifespan are expected to be negligible. Upscaling of cookstove production after project implementation will increase the potential for emission reductions. Further detail on expected emission reductions is provided in Section B.3, paragraphs 101 and 102.

²⁶ Further details of the gaps summarised here are given in Annex 2.A: Feasibility Study, Section 7.

²⁷ Climate forcings will contribute to an accelerated sediment loss along the Monrovian coastline. Anticipated changes in the future climate conditions in the near shore environment include enhanced wave energy, continuing local sea level rise, increases in river run-off, and more destructive storm surges from enhanced storm intensity (Figure 10). These climate forcings will enhance longshore sediment transport and increase the sediment flux of rivers and basins. These activities are the most critical processes leading to the significant in coastal erosion currently present and anticipated along the Monrovian coast. A further detailed analysis of climate change and coastal erosion projections and expected impacts can be found in Annex 2.A: Feasibility Study, Section 2 as well as in Annex 2.B: Vulnerability Sub-assessment, Section 4.



impacting on local climate-sensitive livelihood activities²⁸. These mangroves provide important ecosystem services, including providing breeding grounds for economically important fish species. SLR and the impacts associated with this process also threaten the entire coastline of Liberia to varying degrees. To date, interventions to address these impacts have been *ad hoc* and uncoordinated, resulting in limited effectiveness in building resilience. The preferred solution to the above-mentioned problems, described below, focuses on addressing the *ad hoc* and inadequately-designed nature of previous interventions to address coastal erosion in Liberia. Lessons learned concerning the benefits of adequately resourced and robustly designed infrastructure, paired with an integrated and long-term approach to coastal planning is at the heart of the preferred solution.

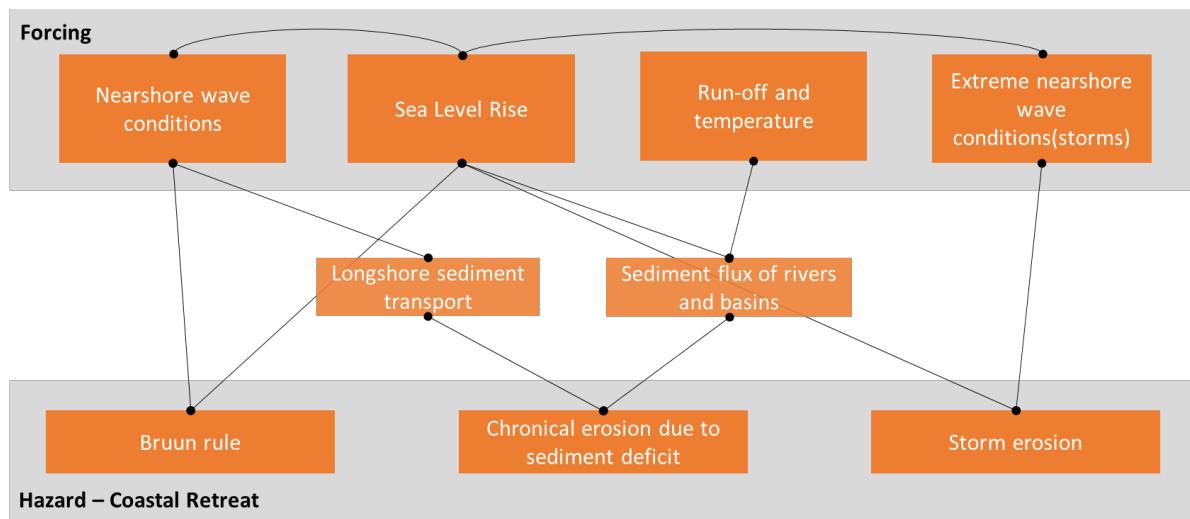


Figure 10. The interrelation between forcing mechanisms and coastal retreat.

Preferred solution

26. The preferred solution to the above-mentioned climate hazards is to: i) address the immediate needs of vulnerable communities in Monrovia by protecting highly exposed areas of the Monrovian coastline from accelerated coastal erosion and SLR and preventing the forced relocation of vulnerable peoples through the establishment of coastal defence infrastructure²⁹; ii) shift the coastal management paradigm towards an integrated, evidence-based and climate-responsive approach by adopting ICZM in Monrovia and Liberia to improve coordination among government institutions as well as with communities and the private sector, and incorporate long-term considerations into adaptation efforts; iii) secure the livelihoods of vulnerable communities who rely on climate-sensitive fishing practices through sustainable co-management of mangrove ecosystems; and iv) enable community-level innovation and learning for the promotion of climate-resilient livelihoods and development of long-term adaptive capacity.
27. Securing the livelihoods of the 12,000 people³⁰ within the MMA who rely directly on the climate-sensitive fishing sector is a particularly important aspect of the preferred solution because of the relationship between the fisheries and food security in Monrovia. These livelihoods are underpinned by the ecosystem services provided by mangroves within the Mesurado Wetland, which are under threat from climate change-induced SLR, unsustainable extraction and pollution. The most cost-effective approach to adapting to the impacts of climate change on these mangroves will be to engage communities in facilitating the sustainable use of mangroves to reduce anthropogenic pressure and increase the resilience of mangroves to the impacts of climate change-induced SLR. Similarly, empowering Monrovian coastal communities to develop alternative, climate-resilient livelihood activities will strengthen their adaptive capacity.

²⁸ Further information about the impacts of climate change on mangroves in the Mesurado Wetland and an assessment of livelihood activities dependent on these ecosystems is presented in Annex 2.A: Feasibility Study, Sections 2 and 5 as well as in Annex 2.D: Mangrove Sub-assessment.

²⁹ A rock revetment represents the most comprehensive option to address coastal erosion at the target community of West Point, addressing the problem for the entire West Point area through installation of the rock revetment at a highly active and exposed site, which will protect tens of thousands of vulnerable people.

³⁰ Comprising approximately 3,000 fisherfolk and 9,000 fishmongers, who in turn form part of the ~250,000 residents of the target communities within and adjacent to the Mesurado Wetlands.



28. The project will catalyse a paradigm shift in Liberia's approach to coastal spatial planning and the sustainable management of coastal ecosystems that addresses current and future climate change risks, incorporating long-term, climate-responsive planning. This shift will be realised through the use of quantitative, scientifically-defensible data in the development of a national climate risk-informed ICZMP, using infrastructure- ecosystem- and community-based adaptation approaches, which will be implemented in the MMA and be used as a platform to develop public-private partnerships for coastal management. In addition, the paradigm shift in coastal management will be realised by supporting the sustainable use of resources to address the impacts of climate change on livelihoods in the MMA specifically.

Barriers

29. There are three main barriers to addressing the above-mentioned problem statement. These are summarised below and expanded on in Section 8 of the FS.

Limited technical and financial capacity within the public and private sector for the establishment of coastal protection infrastructure in the short- to medium-term.

30. The effectiveness of long-term adaptation planning for coastal communities in Monrovia under future climate change conditions will be increased by improving land use plans and effectively enforcing these plans. The GoL — and private sector actors in Liberia — however, lack the technical and financial capacity for designing and constructing the infrastructure necessary to protect the most vulnerable communities in Monrovia in the short-term because of insufficient government revenue and numerous development priorities. These communities are already settled in areas that will be severely affected by projected climate change impacts. The private sector operating in the most vulnerable areas is largely made up of small and informal enterprises with limited capacity for long-term planning. Lack of access to finance and support for development also limit the financial capacity of these enterprises for investing in climate-adaptive activities. Addressing this barrier effectively requires a combination of short-term — hard infrastructure — and long-term — ICZM, land use planning and strengthening informal value chains — interventions. While there has been no lack of small-scale, ad hoc interventions to protect coastal infrastructure and vulnerable communities at West Point in the past decades, the sustainability of interventions of this nature is inherently limited.

Limited knowledge and technical capacity within government institutions for the adoption and implementation of Integrated Coastal Zone Management (ICZM).

31. There is currently limited capacity within relevant government institutions in Liberia to promote sustainable and climate resilient coastal development through ICZM. Responsibility for the management of different aspects of the coastal zone in Liberia are currently distributed across 10 government institutions³¹. As a result, the management of coastal resources currently occurs largely on an *ad hoc* and sectoral basis in Monrovia, which in turn detracts from the sustainability of management structures and interventions and limits the potential for systematically developing public-private partnerships to support coastal management. In addition, there is limited knowledge of the climate change vulnerability of different coastal areas and no existing plan to support an integrated approach to coastal management and climate change adaptation, despite this being a legal requirement in Liberia. This barrier is further exacerbated by insufficient climate information systems (CIS). Limited knowledge and technical capacity as well as the lack of an approved ICZM plan is a barrier that will need to be overcome in order to promote sustainability of coastal settlements, food security and climate-resilient planning.

Limited awareness about the impacts of climate change, including climate-sensitive nature of fishery-based livelihoods, mangrove ecosystems and food security, and limited development of opportunities for adapting to these impacts.

32. A significant barrier to building the climate resilience of coastal communities in Monrovia is limited recognition and awareness of: i) climate change; ii) the projected impacts of climate change; and iii) the climate-sensitive nature of coastal livelihoods (i.e. the unsustainability of current extractive practices), particularly in the fisheries sector, which are supported by climate-sensitive mangrove ecosystems. This barrier results in the unsustainable use of mangrove ecosystem services in Monrovia, which contributes to degradation and reduced ecosystem services

³¹ These institutions are: Ministry of Mines and Energy (MME); ii) Environmental Protection Agency (EPA); iii) National Fisheries and Aquaculture Authority (NFAA); iv) Ministry of Public Works (MPW); v) National Disaster Management Agency (NDMA); vi) Liberian Hydrological Service (LHS); vii) Liberian Meteorological Service (LMS); viii) Liberian Maritime Authority (LMA); ix) Ministry of Finance and Development Planning (MFDP); and x) National Port Authority (NPA). For further details on the roles of these institutions see Annex 2.A: Feasibility Study, Section 5.



provision. In addition, there has been limited investment in the development of alternative climate-resilient livelihood opportunities as a result of the limited understanding of their importance. Overcoming this barrier will require increasing the awareness of decision-makers, planners and communities regarding the projected impacts of climate change on coastal livelihoods and developing opportunities for the uptake of alternative climate-resilient livelihoods. There is also a need for decision-makers and communities to collectively agree to sustainably manage mangrove areas, taking into consideration the linkages between functional mangroves and the viability of the fishery sector that supports the livelihoods of coastal communities in Monrovia.

Proposed interventions

33. This project will address the climate change impacts of SLR and increasingly frequent and intense storms through three outputs, namely: i) the protection of coastal communities and infrastructure at West Point against erosion caused by sea-level rise and increasingly frequent high-intensity storms; ii) institutional capacity building and policy support for the implementation of Integrated Coastal Zone Management (ICZM) across Liberia; and iii) protecting mangroves and strengthening gender- and climate-sensitive livelihoods to build local climate resilience in Monrovia.
34. Under Output 1, coastal protection infrastructure will be constructed to protect critical sections of the coast on a local scale (see Sections 8 and 9 of the FS for a description of site selection and the options analysis for different interventions³²). This will address the technical and financial barriers to establish coastal protection infrastructure that is urgently needed in Monrovia. Protection for the most vulnerable areas on the Monrovian coastline — West Point in particular — will require the construction of the ‘hard intervention’ strategy of rock revetments to stabilise the shoreline, as opposed to ‘softer’, ecosystem-based adaptation (EbA) solutions. Such a rock revetment will be constructed at West Point to protect homes and infrastructure against coastal erosion and storm surges. Stabilising or ‘fixing’ the shoreline by means of a rock revetment is the preferred and only feasible solution to coastal erosion at West Point because of a range of factors as described in the technical studies undertaken for this project (Annex 2.C: Engineering Sub-assessment). These include: i) the exposed nature of the coastline; ii) the steep gradient of the beach and nearshore profile; and iii) the high energy wave environment³³. The hard infrastructure approach also represents a socially sensitive design that will be sustainable beyond the project lifespan because it requires low-to-no maintenance³⁴ and accommodates launching and landing of fishing boats. A rubble mound revetment with rock armour — which is able to withstand extreme wave conditions and storm events — is proposed. The Engineering Sub-assessment showed that the northern portion of the proposed revetment is a less dynamic wave environment, and the conceptual design for this portion of the intervention site consequently proposes lighter rock armour. The revetment will be anchored in the existing beach sediment to a level of five metres below mean sea level to account for future deepening of the area directly in front of the revetment. A six-metre wide promenade, for access to the shoreline and recreation activities, is proposed between the revetment and existing dwellings at West Point. Two boat launching and landing sites are proposed as part of the design at the southern end and centre of the revetment, respectively. These launch and landing sites — which will create a locally safe environment with mild wave action — will be provided in addition to the open beach area to the north of the proposed revetment, where fishing boats are already launching and landing. This intervention has been developed through an integrated approach and will serve as basis for upscaling coastal protection to the rest of the MMA, as well as nationally.
35. Output 2 will facilitate the paradigm shift necessary for adopting an evidence-based ICZM approach across Liberia. The technical and institutional capacity of the government and communities to adapt to the rapidly changing coastal landscape and to undertake long-term, climate-responsive planning will be strengthened. Two core components of ICZM are the promotion of reliable knowledge — based on well-established practices and procedures — and good governance. The adoption of an ICZM approach entails the advancement and facilitation of: i) the integration of a variety of stakeholders and stakeholder interests, including private sector stakeholders; ii) long-term climate change adaptation and planning — with ecosystem-based adaptation (EbA) as a fundamental concept of the ICZM

³² Details of the options analysis and selection process, including the reasoning for selecting the revetment over nature-based solutions, are given in Chapter 6 of Annex 2.B: Vulnerability Sub-assessment.

³³ Further information on the wave dynamics and limited feasibility of alternative interventions is provided in Annex 2.A: Feasibility Study, Section 4 and 9 as well as in Chapter 4 and Appendices 8.A-8.F of Annex 2.B: Vulnerability Assessment. Details of the options analysis and selection process are given in Chapter 6 of Annex 2.B: Vulnerability Sub-assessment

³⁴ Maintenance requirements were identified through stakeholder engagements as a critical consideration in the selection of coastal protection measures and the revetment was therefore designed to minimise operations and maintenance costs and requirements. Details of the selection and design processes can be found in Annex 2.B: Vulnerability Sub-assessment, Chapter 7, and on pg. 63 of Annex 6: ESAR.



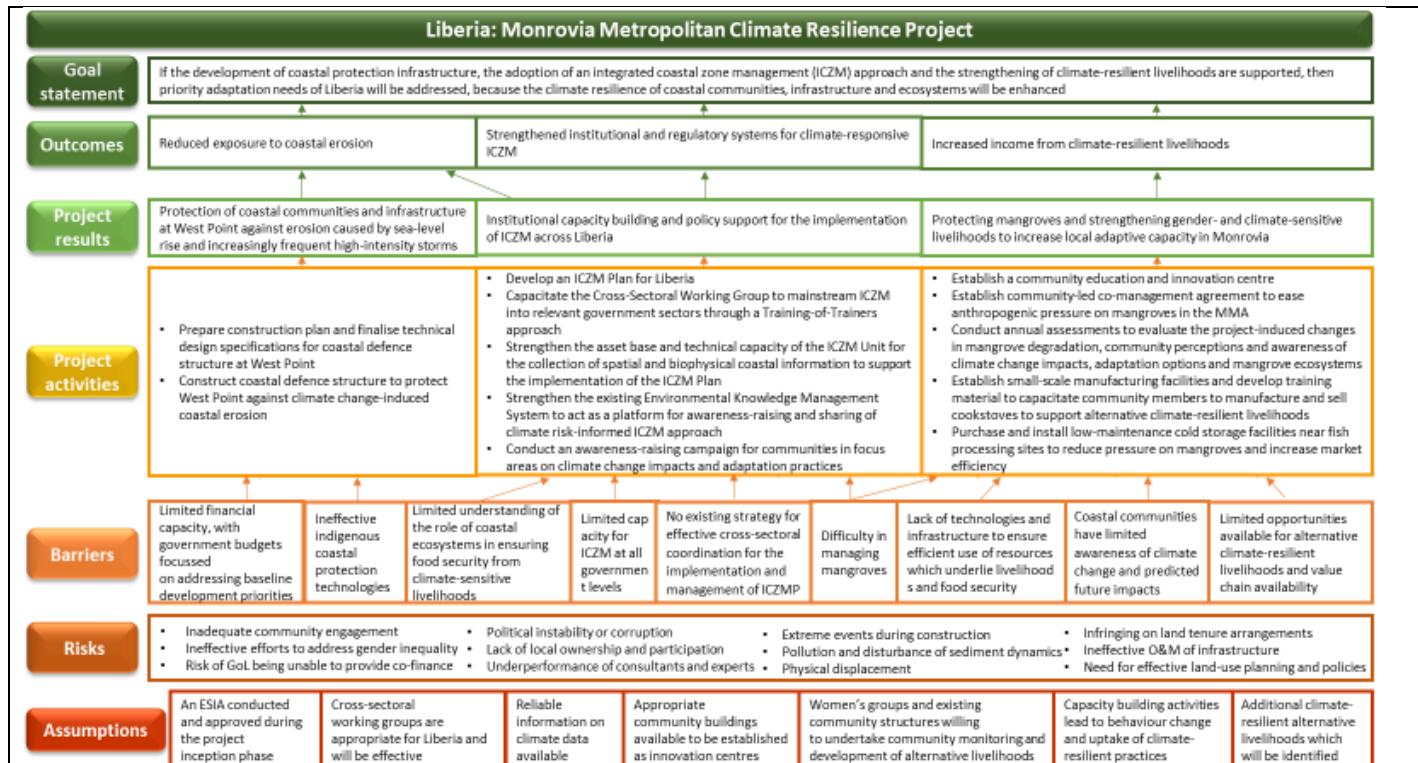
approach; iii) proactive planning based on reliable knowledge and consideration of long-term resilience; and iv) co-governance of coastal ecosystems. A shift to using quantitative, defensible scientific data in coastal management and planning will be promoted through the development of a national-scale high-resolution multi-criteria vulnerability map and the design a national ICZMP for Liberia in consultation with all relevant stakeholders, including the private sector³⁵. This plan will include spatial planning guidelines in the context of climate change and will describe adaptation actions along the coast, such as livelihood diversification as well as hard and soft coastal protection measures, enabling the upscaling and replication of specific coastal defence interventions undertaken during the project. Given the severity of the expected impacts of climate change in the medium- and long-term, the ICZMP will also assess the feasibility of ‘managed retreat’ where appropriate. To ensure that the ICZMP can be implemented effectively, the project will focus on building the capacity of the 10 government institutions responsible for coastal management and will facilitate the implementation of the ICZMP in Monrovia. This focus on capacity development and coordination will ensure that ICZM continues beyond the lifespan of the project.

36. Under Output 3, the adaptive capacity of vulnerable communities will be strengthened and innovation enabled by supporting local fishery-based livelihoods through sustainable co-management of mangrove areas and providing training to catalyse the uptake of diversified climate-resilient livelihoods. These activities, including the co-management of mangroves, will be underpinned by the strengthened institutional framework for ICZM developed under Output 2 and will serve to implement ICZM at the municipal scale. Lessons learned from these activities will be used to inform the revision of the ICZMP, ensure that policy and planning are informed by the experiences of target communities. Capacity development for community-level ICZM will be achieved through informing community members on how to use solar-powered cold storage facilities (Annex 2.D: Mangrove Sub-assessment Section 6.1.1) and training those involved in small-scale informal enterprises to manufacture and sell eco-friendly products such as energy-efficient cookstoves³⁶. Please see the Mangrove Sub-assessment for more information on energy-efficient cookstoves and cold storage facilities.
37. Taken together, the three project interventions of coastal protection, comprehensive, long-term planning for coastal zone management and the strengthening of local livelihoods — in conjunction with strong awareness-raising and knowledge management considerations — will address both the immediate and long-term impacts of climate change on the coast of Monrovia and facilitate the potential for upscaling these initiatives across Liberia. These three outputs have been designed to incorporate sustainability considerations from the outset, with minimal maintenance required beyond the project period. An O&M Plan (Annex 21) has been developed to cover the minimal maintenance needed and will be part of an effective exit strategy that will ensure the long-term sustainability of the project interventions and their associated benefits³⁷. The Theory of Change (ToC) diagram (Figure 811) illustrates the impact pathways of project interventions in overcoming the abovementioned barriers to achieve the paradigm shift in coastal zone management. The ToC diagram outlines how the progression from Project Results (Outputs) to Outcomes will achieve the Project Goal — to address priority adaptation needs through the adoption of an ICZM approach, supporting the strengthening of climate-resilient livelihoods and the development of coastal protection infrastructure. Specifically: i) Outcome 1 will see a reduced exposure to coastal erosion as a result of Output 1 — the protection of coastal communities and infrastructure — and Output 2 — the building of institutional capacity and policy support for the implementation of ICZM; ii) Outcome 2 will see institutional and regulatory systems strengthened for climate responsive ICZM as a result of Output 2; and iii) Outcome 3 will see an increase in income from climate-resilient livelihoods as a result of Output 3 — protecting mangroves and strengthening gender- and climate-sensitive livelihoods to increase local adaptive capacity. Detailed descriptions of these Outputs, and the activities they consist of, are provided in B.3 below.

³⁵ Several important industries in Liberia are located in the coastal zone and are vulnerable to the impacts of climate change in these areas. These industries include hotels, tourism, mines and manufacturing. During the development of the ICZMP, engagement with these stakeholders will be undertaken and the project will be used as a platform to leverage private sector support for coastal management.

³⁶ The manufacturing and sale of energy-efficient cookstoves has been selected for this activity to promote the adoption of alternative climate-resilient livelihoods and improve mangrove ecosystem management. While energy-efficient cookstoves are expected to facilitate a reduction in greenhouse gas emissions, the emission reduction co-benefits of this activity during the project lifespan are expected to be negligible. Upscaling of cookstove production after project implementation will increase the potential for emission reductions. Further detail on expected emission reductions is provided in Section B.3, paragraphs 101 and 102.

³⁷ Detailed information on the exit strategy can be found in Section B.6 of this proposal.

**Figure 11. Theory of Change.****B.3. Project/programme description (max. 2000 words, approximately 4 pages)**

38. The proposed project will enhance the resilience of vulnerable coastal communities within the Monrovia Metropolitan Area (MMA) to climate change-induced sea-level rise (SLR) and an increase in the frequency of high-intensity storms. This overarching objective of the project will be achieved through three integrated outputs, which will be implemented at three distinct spatial scales — national, municipal and site-specific. These outputs will focus on: i) establishing effective and sustainable coastal protection measures for Monrovia's most vulnerable communities at West Point (Output 1); ii) strengthening institutional capacity to manage coastal areas of Liberia in a climate-resilient manner and raising community awareness on climate change impacts and adaptation practices (Output 2); and iii) protecting mangroves and strengthening livelihood practices in vulnerable communities across the MMA to enhance people's adaptive capacity and contribute to long-term transformational change (Output 3). Implementing a robust, sustainable coastal defence solution at West Point under Output 1 as well as the institutional and community-level changes in Outputs 2 and 3 will trigger transformational change in terms of how Liberia manages its coastline in the future. The investment at West Point will serve as a demonstration site of the value of robust and sustainable coastal protection measures, which will be used to leverage future investments in coastal protection infrastructure for the most vulnerable Liberian communities. In addition, the comprehensive technical assessments used to inform the design of the West Point revetment provide a foundation for the design of further coastal protection interventions. To complement these measures, the integrated approach to mangrove management, fisheries management, and coastal planning and development taken in Outputs 2 and 3 will promote gender-responsive policy reforms that will apply across the whole Liberian coastline. In this way, the project will effect major transformational change.

Output 1. Protection of coastal communities and infrastructure at West Point against erosion caused by sea-level rise and increasingly frequent high-intensity storms.

39. Coastal communities within the MMA are at risk from accelerated coastal erosion and increased incidence of extreme weather events, which has already resulted in the displacement of at least 670 households³⁸. This risk is disproportionately borne by the poorest and most vulnerable communities in Monrovia. Under this output, GCF grant funding will be used to construct coastal defence infrastructure — in the form of a rock revetment — to protect the West Point settlement against accelerated coastal erosion and extreme storm events induced by climate

³⁸ Further details on the displacement of households are available in Annex 2.A: Feasibility Study, Section 3.



change. West Point is one of the most densely populated and poorest areas on the Monrovia coast and is the most vulnerable section of the coast to climate change-induced acceleration of coastal erosion (see Figure 2). Co-finance will facilitate the finalisation and validation of the detailed design and construction plans, and rock material for the construction of the revetment at West Point will be provided as in-kind co-finance.

Activity 1.1. Prepare construction plans and finalise technical design specifications for coastal defence structure at West Point.

40. Detailed technical design specifications, based on the designs contained in the Engineering Sub-assessment (Annex 2.C³⁹), will be finalised and an in-depth construction plan developed to ensure that the construction of the West Point revetment and green promenade under the project (Activity 1.2) are implemented appropriately and with the inputs of communities (50% women) in the final design and plan. An Environmental and Social Impact Assessment (ESIA) will be conducted to inform the final design, in accordance with the requirements of Liberian law. The final technical design will be based on the existing conceptual design provided in the Engineering Sub-assessment funded by GCF PPF resources and will consider best practices and lessons learned from other coastal protection interventions in Monrovia. This conceptual design has been informed by detailed geo-physical and social assessments, including an options analysis of nature-based solutions and other hard infrastructure options (Annexes 2.A: Feasibility Study, 2.B: Vulnerability Sub-assessment, 2.C: Engineering Sub-assessment and 2.D: Mangrove Sub-assessment). This approach will be integrated into the GEF-LDCF project which is currently being developed to strengthen ICZM in Sinoe County, Liberia, highlighting that nature-based solution should be used along with infrastructural interventions to reduce the vulnerability of coastal communities. Preventing both heavier water loads in the Mesurado Estuary and saline intrusion into freshwater aquifers were critical considerations in this initial design of this intervention⁴⁰. Concurrent to the development of the technical design plans, the construction plan will be developed. The construction plan will identify all necessary inputs, procurement procedures, contracting guidelines, relevant legislation, ESS processes and gender-responsive stakeholder consultations necessary for the construction of the coastal defence infrastructure⁴¹. The final detailed technical design and construction plan will be developed with input from community and government stakeholders and will be validated prior to implementation. The Ministry of Mines and Energy (MME) will be the Responsible Party for this activity and co-finance will be provided by UNDP.

41. Sub-activities under this activity will include:

Sub-activity 1.1.1. Refine and detail the design and construction plan for the coastal defence structure and green promenade at West Point.

Under this sub-activity, a service provider will be contracted to develop an ESIA, considering the impacts associated with the planned revetment at West Point as well as livelihood activities under Output 3. This will be done in accordance with the requirements of Liberian law for the construction of the revetment, and will include an assessment of the risk of economic displacement as a result of: i) the revetment restricting access to boat launching sites for fisherfolk; and ii) the development of the mangrove co-management agreement under Activity 3.2. If required based on this assessment, a Livelihood Restoration Plan (LRP) will be developed as part of the ESIA process and included in the Environmental and Social Management Plan (ESMP) for the project. A consultant will be contracted to develop the final technical design and construction plan for the coastal defence infrastructure to be developed at West Point, based on the ESIA.

³⁹ Chapter 3 of the Engineering Sub-assessment (Annex 2.C) provides the detailed engineering assessment of the protection measures (infrastructure). It includes the design of the proposed measures. Section 3.5.2 (page 38) of Annex 2.C provides the description and detailing of the design for the revetment at West Point.

⁴⁰ The development of a hard revetment at West Point is very unlikely to affect water loads in the estuary. This is because the revetment will be developed at the ocean front and will not affect the flow field inside the wetland, which is dependent on tidal water level fluctuation. The revetment, like the existing beach at West Point, will not affect this tidal water level fluctuation which is responsible for water levels in the estuary. Inundation of West Point would be a potential concern if there was insufficient drainage through the revetment during heavy rains. However, the revetment structure will be permeable as it will be constructed out of rocks. Additional drainage facilities (such as drainage from promenade and/or culverts) have been accounted for in the costing of the revetment (both capital and operational expenditure) and the drainage capacity and requirements will be assessed during the finalisation of the revetment designs. The revetment will not be proximate to freshwater aquifers and is therefore highly unlikely to cause saltwater intrusion. Further details on how these risks are taken into account in the design of the revetment can be found in Annex 2.C.

⁴¹ Guidelines for the construction plan have been compiled during the feasibility assessment of the project and are available in Annex 2.A: Feasibility Study, Section 10.



This final design will draw on existing, prior work and the completed technical feasibility designs (see Annex IIC: Engineering Sub-assessment) and will be developed in consultation with local communities and government stakeholders, with 50% women representation, to ensure that sufficient access to beach landing sites is retained and that adequate drainage facilities and amenities are incorporated into the promenade.

Sub-activity 1.1.2. Host a validation workshop to present and validate final design and construction plan to government and community stakeholders.

42. Under this activity, an official validation workshop will be held to present the finalised design and construction plan to relevant government and community stakeholders and to explain how stakeholder concerns and input have been incorporated into the design. In addition to government and community stakeholders, other interested parties and civil society groups such as development organisations and NGOs will be invited to attend the validation. All consultative and workshop processes will be gender-responsive⁴² and include 50% women.

Activity 1.2. Construct coastal defence structure to protect West Point against climate change-induced coastal erosion.

43. To protect the community of West Point from the impacts of accelerated coastal erosion and extreme weather events resulting from climate change, an engineering firm will be contracted to construct a rock revetment at West Point. The revetment will be 1,050 m long and will include a green promenade⁴³ as well as associated amenities⁴⁴. The promenade will be utilised as an open community space and will compensate for the loss of beach areas that are used for numerous social, domestic and economic purposes⁴⁵ but are currently dissipating from erosion. The design of the revetment⁴⁶ is such that three areas of beach will be retained and protected to ensure that the ocean is accessible for social and domestic purposes as well as for the launching of fishing boats and the processing of fish. Constraints on capacity for maintaining physical infrastructure were considered in the selection and design of the revetment (see the Engineering Sub-assessment). As a result, the revetment is designed to be a low maintenance intervention⁴⁷ with a minimum lifespan of 30–50 years. To further increase the sustainability of the intervention, labourers from the West Point area engaged in the construction of the revetment will be trained on the best maintenance techniques for the revetment. Women will constitute at least 40% of waged labour on project-related activities, including construction. MME will be the Responsible Party for this activity, which will be financed by GCF, UNDP and GoL.

44. Sub-activities under this activity will include:

Sub-activity 1.2.1. Construct a rock revetment with a green promenade and community amenities at West Point.

45. The construction will be undertaken according to the detailed final design and construction plan developed under Sub-activity 1.1.1. The firm implementing the protective infrastructure at West Point will engage local wage labourers from the West Point area to work on the construction of the infrastructure. While most of the beach is inaccessible by cars because of the dense housing layout at West Point, bollards will be provided for the limited vehicular entry points to eliminate any risk of theft of site materials. The cost of bollards will be minimal and will be absorbed under construction costs. The type and location of access control infrastructure will form part of the detailed design phase during⁴⁸. Equal opportunities and equal pay will be provided to men and women, and wages

⁴² Taking into account appropriate meeting times and places, gender- and cultural-sensitivities, so that women are able to attend and fully participate.

⁴³ Further information on the green promenade, including an artist's impression, are provided in Annex 2.C: Engineering Sub-assessment.

⁴⁴ Associated amenities will include, but not be limited to, waste bins, benches or other seating, boat storage facilities and designated open areas for the drying and smoking of fish

⁴⁵ Domestic purposes include utilisation of the beach for washing, cooking and drying or smoking of fish,

⁴⁶ Validated concept designs for the revetment are included in Annex 2.C: Engineering Sub-assessment

⁴⁷ The GoL has signed an MoU stating their intention to finance any required maintenance. The government entity responsible for undertaking this maintenance will be identified during the development of the ICZMP under Activity 2.1.2. Please see Annex 21: O&M Plan for further information.

⁴⁸ The risk of theft of sand and rock materials at West Point is low. Extraction of materials during and following construction is therefore unlikely. However, security personnel can be hired to reduce the risk of theft of equipment and materials during the construction phase if the contractors deem it necessary. Security has been employed for safeguarding site equipment and materials on other projects and can be made available during the construction of the West Point revetment. After project completion, the risk of materials being stolen is considered minimal. In addition, the project has been designed with the West Point community's ongoing engagement and will continue to play a large role in ensuring the project is effectively implemented.



will comply with Liberian labour laws. Women will constitute at least 40% of waged labourers and the implementing firm will make provision for gender-specific safety protocols and personal protective equipment. The labourers engaged for the construction of the revetment will be trained by the firm on best maintenance techniques for the revetment. To foster sustainability and local ownership, regular monitoring of the structure and its performance will be done in collaboration with the local communities through local leadership. During the construction phase, training will be provided to representatives of local communities and community leaders on basic monitoring systems, data collection and reporting to the lead government institution as per the ICZMP. This will include capacity to check for wear and tear on a regular basis and after minor weather events, maintenance of the promenade, planting local vegetation species under supervision of relevant authority. This training will also be provided to representatives of fisher folk in terms of the maintenance of the fish landing sites. Additionally, during the construction phase, awareness-raising on health and safety with regards to the construction of coastal infrastructure will be facilitated during the daily safety debriefs, which is an important consideration for the construction phase given the close proximity of the densely populated West Point community. In addition to ensuring the representation of women as wage labourers, at least 50% of those providing training will be women.

Output 2. Institutional capacity building and policy support for the implementation of Integrated Coastal Zone Management (ICZM) across Liberia.



46. The project will strengthen the capacity of the national government in Liberia to implement climate risk-informed Integrated Coastal Zone Management (ICZM) and to support cross-sectoral coordination among the 10 government institutions responsible for climate-resilient coastal management (Figure 912)⁴⁹. The ICZM approach considers land-use planning in relation to climate risks, the interconnectivity of coastal systems, stakeholder sectors, as well as the intrinsic dependence of communities on coastal resources for their livelihoods. It is aligned with the GEF project for ICZM in Sinoe County planning. It also promotes evidence-based decision-making using scientifically defensible data. Implementing such an approach in the MMA — and across Liberia — will transform the existing coastal management paradigm and reduce the vulnerability of coastal communities to the impacts of climate change-induced SLR, accelerated coastal erosion and increased incidence of extreme weather events. The adoption of a climate-resilient ICZM approach will be facilitated by the development of a high-resolution, multi-criteria vulnerability map of the Liberian coastline and a national Integrated Coastal Zone Management Plan (ICZMP), as well as by equipping and capacitating relevant stakeholders to effectively implement the plan. Additionally, activities under this output will increase the knowledge of institutions and communities on climate-change related coastal hazards, potential adaptation strategies and the importance of an integrated approach to coastal zone management (Figure 12). Through knowledge sharing and engagement, activities under this Output will support the development of public-private partnerships for coastal management. This will be achieved by developing an awareness-raising campaign targeting four communities in the MMA and upscaling the existing Environmental Knowledge Management System (EKMS) which was established under a previous GEF-funded initiative. The participatory approach to the implementation of ICZM will improve coordination: i) between governmental institutions; and ii) between GoL, communities and the private sector for coastal management. The knowledge management, awareness-raising and vulnerability mapping components of this output will be facilitated through co-financing, while GCF grant funding will be used to develop the climate-responsive ICZMP as well as the procurement of biophysical data collection systems and spatial data.

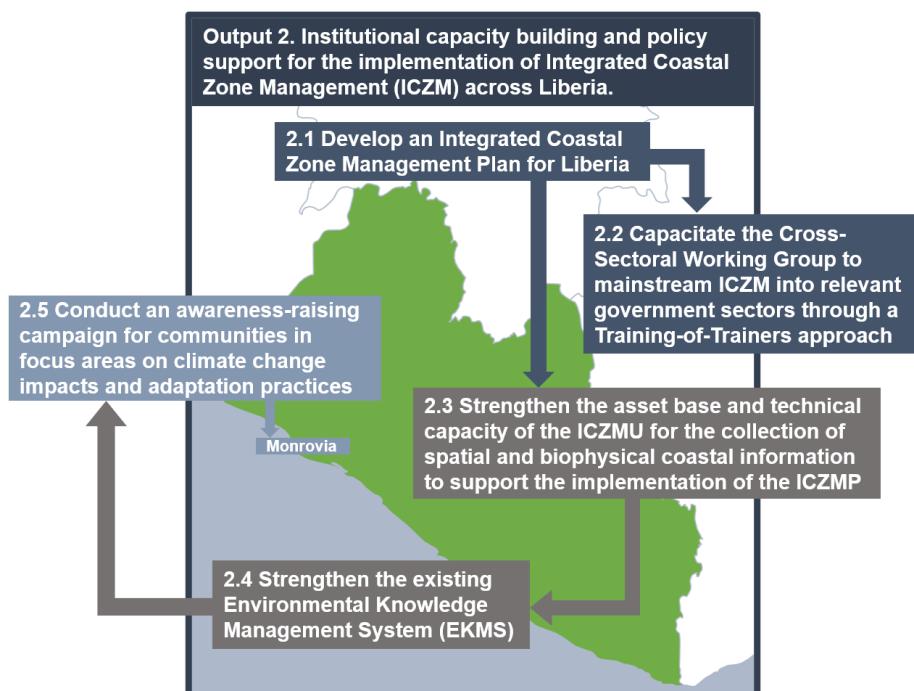


Figure 12. Linkages between activities under Output 2 of the proposed project.

Activity 2.1. Develop an Integrated Coastal Zone Management Plan for Liberia.

⁴⁹ These institutions are: Ministry of Mines and Energy (MME); ii) Environmental Protection Agency (EPA); iii) National Fisheries and Aquaculture Authority (NFAA); iv) Ministry of Public Works (MPW); v) National Disaster Management Agency (NDMA); vi) Liberian Hydrological Service (LHS); vii) Liberian Meteorological Service (LMS); viii) Liberian Maritime Authority (LMA); ix) Ministry of Finance and Development Planning (FNDP) and x) National Port Authority (NPA).



47. Under this activity, the project will work with relevant government institutions⁵⁰ to develop a national Integrated Coastal Zone Management Plan (ICZMP) that addresses climate change risks, through a participatory and consultative process. This ICZMP will use an integrated approach to infrastructure-, community- and ecosystem-based adaptation in the coastal zone of Liberia. This approach will inform and be informed by lessons learned from collaboration between communities, government, private sector and NGOs for: i) strengthening climate-resilient livelihoods and ecosystem-based adaptation under Output 3; and ii) implementing protective coastal infrastructure under Output 1. Development of the plan will be led by a service provider with experience in developing and implementing climate risk-informed ICZM. To ensure the plan is effective and implementable it will be developed through a phased approach, whereby the first phase will entail producing a high-resolution, multi-criteria vulnerability map of the entire Liberian coastline. The second phase will entail the development of a national climate-responsive ICZMP through a collaborative process led by international and national experts. The plan will be developed based on the high-resolution vulnerability map and extensive stakeholder consultations with government institutions and private sector entities in the coastal zone⁵¹. To ensure effective implementation of the ICZMP across the relevant government sectors, an ICZM Committee and Cross-Sectoral Working Group (CSWG) will be established under this phase, with the explicit mandate of ensuring the integration of climate risks and the alignment and conformity of the ICZMP across the relevant government sectors. The CSWG will develop a detailed action plan for the implementation of the ICZMP, identifying: i) sector-specific regulations and by-laws for updating and integrating ICZM principals; ii) opportunities for strengthening public-private partnerships to support ICZM; and iii) strategies for financing coastal management interventions, particularly relating to climate change adaptation. Additionally, during the second phase, the ICZMP will be implemented in Monrovia with support from the GCF grant financing of the project. The final phase of the ICZMP development will entail updating the ICZMP three years after the initial plan has been developed. This will ensure that lessons learned during the implementation process in Monrovia are incorporated into the second iteration of the ICZMP, which will facilitate the upscaling of this activity through ICZMP implementation across Liberia. Furthermore, the ICZMP will draw on data generated from Liberia's multi-hazard impact-based forecasting and early warning systems (MH-IBF-EWS), which will be strengthened under the proposed AfDB/GCF project "Enhancing Climate Information Systems for resilient development in Liberia (Liberia CIS)". The ICZMP developed under this activity will be used as a base from which the GEF project will build on for developing county level ICZMPs.
48. This process will result in a dynamic ICZMP that is continuously adaptive, iterative and a resource for the sustainable and climate-resilient management of the Liberian coastal zone. The ICZMP will: i) provide guidelines for integrating climate change risks into planning and coastal resource use; ii) support integrated development planning; iii) develop linkages between the 10 government institutions, local research bodies, the private sector and civil society groups through the ICZM Committee and CSWG; and iv) facilitate the incorporation of climate change considerations into coastal zone management. This will support a shift in the approach to managing the coastal zone in Liberia. To address the local gap in expertise required to develop and implement this ICZMP, the project will facilitate long-term training for relevant institutional representatives on best practice for ICZM through a Training-of-Trainers (ToT) approach under Activity 2.2. MME will be the Responsible Party for this activity, which will be financed by GCF, UNDP and GoL.
49. Sub-activities under this activity will include:
- Sub-activity 2.1.1. Develop a high-resolution, multi-criteria vulnerability map of the Liberian coastline.
50. To build the knowledge base for climate risk-profiling in Liberia and to support the generation and implementation of an ICZMP, an international firm will be contracted to work alongside local experts to develop a high-resolution, multi-criteria vulnerability map that assesses exposure, sensitivity and hazard parameters within coastal areas. Data collected from vulnerability studies conducted under the NAP Readiness process will be included in the development of the map, as will the high-resolution spatial datasets procured under Sub-activity 2.3.1. The vulnerability map will incorporate socio-economic and gender considerations in addition to biophysical and climate change factors to ensure long-term decision-making beyond the lifespan of the project. The resulting map will

⁵⁰ These institutions are: Ministry of Mines and Energy (MME); ii) Environmental Protection Agency (EPA); iii) National Fisheries and Aquaculture Authority (NFAA); iv) Ministry of Public Works (MPW); v) National Disaster Management Agency (NDMA); vi) Liberian Hydrological Service (LHS); vii) Liberian Meteorological Service (LMS); viii) Liberian Maritime Authority (LMA); ix) Ministry of Finance and Development Planning (FNDP) and x) National Port Authority (NPA).

⁵¹ including hotels, mines and other coastal industries



provide municipalities within the MMA — and across Liberia — with the knowledge base required to incorporate climate change considerations into future urban planning and ICZM. This is an integral step to inform the development of the ICZMP by providing a baseline of scientifically defensible information on coastal vulnerability in Liberia and which will be enhanced by the improved national multi-hazard impact-based forecasting and early warning systems (MH-IBF-EWS).

Sub-activity 2.1.2. Develop the climate-responsive ICZMP in collaboration with stakeholders, incorporating information from the map developed under Sub-activity 2.1.1.

51. Under this activity, the project will develop the ICZMP through a participatory and consultative process. An appropriately qualified service provider will be contracted to engage with relevant stakeholders through a gender-sensitive approach⁵² — including the leaders of vulnerable communities, NGOs, private sector actors located in the coastal zone⁵³, the 10 relevant government institutions involved with coastal management in Liberia as well as the Ministry of Gender, Children and Social Protection (MoGCSP). The inputs generated by these engagements will be considered in relation to the vulnerability map produced under Sub-activity 2.1.1 and will inform the design of the ICZMP. Additional engagements with these stakeholders will be undertaken to inform the revision of the ICZMP three years after the initial development. The ICZMP will be developed at a national scale but will only be implemented in Monrovia under the project. Approaching implementation in a phased manner — whereby the project supports implementation on a limited scale — will provide an opportunity for newly capacitated institutional staff to exercise the skills gained through the long-term training under Activity 2.2, while providing upscaling potential for the ICZMP across Liberia. Additionally, under this activity, the service provider developing the ICZMP will: i) define the mandate of the ICZM Committee and the CSWG based on consultations with all government stakeholders⁵⁴; ii) define the roles and targets for each of the 10 institutions; and iii) work collaboratively with the GoL to mandate responsibility for the maintenance of the revetment — constructed under Activity 1.2 — to a relevant government entity. These mandates will be presented along with the ICZMP under Sub-activity 2.1.3.

Sub-activity 2.1.3. Host validation workshops to present and secure ownership of the ICZMP for representatives from the 10 government institutions responsible for coastal management in Liberia.

52. Under this activity, the two workshops will be held to present the newly developed ICZMP in Year 2 and the updated ICZMP in Year 6 to high-level representatives from the 10 government institutions responsible for coastal management in Liberia as well as the Ministry of Gender and Social Protection. The objective of the workshops will be to secure the endorsement and joint ownership of the plan, including commitment to the roles and targets for each institution. During the workshops, any outstanding points regarding the plan will be addressed and the members of the 10-person ICZM Committee will be elected during the first workshop. The ICZM Committee⁵⁵ will be comprised of high-level government representatives, comprising 50% women, from different government departments. The Committee will be mandated to strengthen cross-sectoral collaboration for ICZM and support the mainstreaming of ICZM into sectoral policies and plans.

53. A further action undertaken during this initial validation workshop will be the nomination of government staff from each department to serve on a Cross-Sectoral Working Group (CSWG). The CSWG will include technical specialists from each of the 10 government institutions responsible for coastal management and will be capacitated under Activity 2.2 to mainstream ICZM into their respective institutions. The members of the CSWG will also be mandated to provide technical information to their counterpart representatives on the ICZM Committee. This structure will contribute to information flow between decision-makers and technical personnel within as well as between different government institutions.

Activity 2.2. Capacitate the Cross-Sectoral Working Group to mainstream ICZM into relevant government sectors through a Training-of-Trainers approach.

⁵² Which will include collecting sex and age disaggregated data, supporting the trainer-of-trainers, and coordinating with relevant ministries on gender focus-points during the ICZMP development.

⁵³ including hotels, mines and other coastal industries

⁵⁴ This will include considerations on drivers and implications of illegal sandmining along beaches and rivers causing erosion and exacerbating the effects of climate change.

⁵⁵ The terms of reference/mandate for this committee, as well as the Cross-Sectoral Working Groups, will be defined as part of the ICZMP under Activity 2.2.



54. Under this activity, the technical capacity of the CSWG established under Sub-activity 2.1.3 will be strengthened to implement the ICZMP through long-term training via a Training-of-Trainers (ToT) approach. To support the effective implementation of the ICZMP developed under Activity 2.1, the project will host workshops on ICZM planning and implementation to build the capacity of the CSWG and additional representatives from all relevant government institutions. As part of this process, a detailed action plan for sector-specific implementation of the ICZMP will be developed by the CSWG to: i) facilitate the integration of ICZM into relevant by-laws and regulations; ii) identify opportunities and develop plans for strengthening public-private partnerships for ICZM; and iii) identify financing strategies for climate change adaptation priorities in the coastal zone. Capacitating technical personnel responsible for overseeing the uptake of implementation of ICZM across all relevant sectors will support the effective execution, management and uptake of ICZM within the MMA as well as facilitating upscaling across the country. The GEF ICZM project will build on the lessons learned and best practices noted under this activity in its CSWG undertakings for mainstreaming ICZM.

55. The use of a ToT approach will support the various government institutions to capacitate their staff beyond the lifespan of the project. In addition, ensuring that representatives from all 10 institutions receive the same training will allow for the requisite technical capacity to be introduced into each institution and will enable the alignment of ICZM across all government sectors. MME will be the Responsible Party for this activity, which will be financed by GCF, UNDP and GoL.

56. Sub-activities under this activity will include:

Sub-activity 2.2.1. Host an inception workshop to present and provide orientation to the CSWG on the finalised ICZMP.

57. An inception workshop will be held under this activity to introduce the ICZMP to the members of the CSWG nominated under Sub-activity 2.1.3. The CSWG will include one representative from each of the 10 government institutions involved in coastal management as well as representatives from the Ministry of Gender, Children & Social Protection (MoGCSP) and the Integrated Coastal Zone Management Unit (ICZMU). This inception workshop will provide an opportunity for the members of the CSWG to engage with each other, become familiarised with the ICZMP and provide initial input for the training to be developed under Sub-activity 2.2.2.

Sub-activity 2.2.2. Host a planning workshop for the CSWG to develop an action plan for implementing the ICZMP, including plans for changes and updates required for sector-specific regulations and by-laws

58. Once the CSWG has undergone initial training, a two-day planning workshop will be hosted to develop an action plan for the implementation of the ICZMP. This action plan will include the identification of regulations and by-laws in each of the relevant sectors⁵⁶ that need to be updated and changed to align with ICZM as well as a stocktake of job descriptions for staff involved in ICZM to assess where formal roles and responsibilities need to be assigned to support ICZM implementation. The institutions responsible for each of these regulations and by-laws will also be identified, along with the processes for updating each of them. A plan for strengthening partnerships between government institutions and private sector stakeholders — including hotels, mines and other industries with an interest in coastal management — will also be developed. In addition, a session in the workshop will be dedicated to the identification of possible financing strategies for coastal climate change adaptation interventions and the development of a financing plan to leverage investment in coastal protection. The effectiveness of the financing plan will be monitored as part of the Impact Assessment conducted under Activity 3.3 and the collation of lessons learned under Activity 2.4. This information will be used to inform the revision of the ICZMP in Year 6 of project implementation. The possible role of private sector investment in coastal adaptation will be considered as part of this plan. Roles, responsibilities and timelines for the required changes, updates and actions will be set out in the action plan. Through engagement between the representatives of the 10 government institutions on the CSWG and those on the ICZM Committee, support for the implementation of the action plan will be developed within each of the relevant institutions.

Sub-activity 2.2.3. Develop a curriculum and training program to capacitate relevant technical personnel on cross-sectoral coordination and the effective implementation of the ICZMP.

⁵⁶ Including, for example, land-use management, forestry and fishing



59. Under this activity, an international expert with experience in coastal management and the ToT approach will be contracted to develop a training curriculum and program to capacitate the CSWG and additional technical staff from each of the 10 government institutions in ICZM. The expert will develop the framework of the training curricula with input from the consultants engaged under Sub-activity 2.1.2 and will finalise the curricula through a participatory process with the ICZM Committee under Sub-activity 2.2.4. The consultant engaged under this activity will use the finalised curricula and program to train the CSWG in best practice for cross-sectoral coordination and the implementation of ICZM as well as capacitate members of the CSWG to conduct the training within each of their respective departments.

Sub-activity 2.2.4. Host a validation workshop with the CSWG to finalise training curricula.

60. To facilitate a participatory approach for defining the training curricula, a three-day co-creation workshop will be held with all members of the CSWG and ICZM Committee to present the framework of the training program and work collaboratively to: i) define the various roles and responsibilities for each of the 10 institutions engaged in coastal management; and ii) finalise the curricula to be included in the training program. The national consultants engaged under Sub-activity 2.1.2 will support this activity by attending the workshops and guiding the development of the curricula to ensure it incorporates the most important considerations of effective ICZM.

Sub-activity 2.2.5. Conduct a training and action programme for members of the CSWG to mainstream ICZM into relevant government entities and support mainstreaming of ICZM into national policies, programmes and plans.

61. Under this activity, the international expert contracted under Sub-activity 2.2.3 will conduct a 16-week, phased training programme for the members of the CSWG and two additional technical personnel from each of the 10 government institutions. This long-term training programme will include instruction on: i) the implementation of the ICZMP; ii) financing strategies for ICZM priorities; iii) important considerations for cross-sectoral collaboration; and iv) training on how to conduct the course for additional members within each institution. This training programme will emphasise knowledge and tools for integrating climate risks, mainstream action plans and will support the different institutions to perform their roles and meet targets as specified in the ICZMP. This will build the capacity of institutional representatives to effectively implement the ICZMP, further capacitate government technical staff and ensure alignment between all relevant institutions, thereby supporting cross-sectoral collaboration and the uptake of ICZM across Liberia. The international expert will also provide support to the different institutions for mainstreaming and implementing the ICZMP.

Activity 2.3. Strengthen the asset base and technical capacity of the ICZMU for the collection of spatial and biophysical coastal information to support the implementation of the ICZMP.

62. A significant knowledge gap in the form of limited spatial, meteorological and oceanographic data was identified during the project feasibility process. This stems from the current reliance by the Liberian Meteorological Services on remotely-sensed data as opposed to *in situ* data collection by means of wave buoys. In addition, access to remote sensing data is limited to low-resolution publicly available satellite data. Under this activity, the project will procure high-resolution satellite imagery for the Mesurado Wetland and coastline of Monrovia. These data will enable detailed mapping and monitoring of coastal ecosystems in the Mesurado Wetland as well as coastal erosion and will be used in the vulnerability mapping under Sub-activity 2.1.1 and project impact monitoring under Sub-activity 3.3.1. An international firm will also be contracted under this activity to develop an integrated solution for the collection, processing and synthesis of meteorological and oceanographic data offshore of Monrovia. This integrated system will be hosted by the ICZMU and will support the implementation of the ICZMP by providing a local knowledge base on ocean dynamics for the 10 relevant government institutions involved with the implementation of the ICZMP. The system will be linked to existing climate information and early warning systems. Furthermore, the system will complement the GCF/AfDB project “Enhancing Climate Information Systems for resilient development in Liberia (Liberia CIS)” currently under development to improve Liberia’s meteorological and hydrological systems. MME will be the Responsible Party for this activity, which will be financed by GCF.

63. Sub-activities under this activity will include:



Sub-activity 2.3.1. Procure high-resolution remote sensing data to monitor coastal erosion and mangrove ecosystem health and degradation in the MMA, to be made publicly accessible and used for the vulnerability map under Sub-activity 2.1.1.

64. Under this activity, high-resolution satellite imagery⁵⁷ will be procured for the MMA. First, five historical datasets — one for every second year for the past ten years — will be procured along with a new dataset in Year 2 of the project. Additional datasets will be acquired in Years 4 and 6 of the project. The historical datasets will be used to inform the development of the vulnerability map under Sub-activity 2.1.1. In addition, all data procured under this activity will be processed and analysed under Sub-activity 3.3.1 to assess the health and degradation of mangrove ecosystems and evaluate the impact of the project in terms of reducing mangrove degradation. Processed satellite imagery and datasets will be made publicly accessible through the Environmental Knowledge Management System (EKMS) under Activity 2.4.

Sub-activity 2.3.2. Contract a specialist firm to provide an integrated, near-shore wave buoy-based data collection and processing system to support the collection of meteorological and oceanographic data for improved generation of information on parameters relevant to ICZM and meteorological decision-making in Liberia.

65. The above-mentioned integrated solution will include: i) four wave buoys that are capable of capturing, recording and transmitting data relating to *inter alia* wind direction, windspeed, wave height, sea-level pressure, sea surface temperature and tides; ii) associated information and technology equipment; iii) the development and installation of a database for collecting, processing and cataloguing data; iv) training courses on the installation, use and maintenance of the system; and iv) on-site and off-site technical support in integrating the system with the existing early warning system and weather forecasting system established under projects funded by the GEF as well as the AfDB/GCF project currently under development. The training courses on the installation, use and maintenance of the system will be delivered to technical staff at relevant government institutions, including the EPA, NDMA, LMS and ICZMU and training materials will be made available to the trained staff to facilitate training of additional staff.

The specialist firm will also be contracted on an annual basis to provide off-site technical support to ensure that the system is fully operational and that technical staff trained in the installation, use and maintenance of the system (including staff of the EPA, NDMA, LMS and ICZMU) benefit from technical assistance for the duration of the project. This will assist technical staff within relevant institutions to continue to maintain the system beyond the project lifespan.

Activity 2.4. Strengthen the existing Environmental Knowledge Management System (EKMS) to act as a platform for awareness-raising and sharing of climate risk-informed ICZM approach.

66. The project will support the newly implemented Environmental Knowledge Management System (EKMS) in Liberia by extending accessibility to the system, incorporating resources on climate-risk informed ICZM and contributing to awareness on the application of the system. The EKMS will be hosted by the EPA to act as a platform linking the 10 institutions responsible for addressing climate change impacts within the coastal zone and to provide information relating to climate risks and ICZM to the private sector. Additionally, the project will help establish a partnership between the EPA and research institutions, including the University of Liberia, to develop case studies, and further the national understanding of coastal protection. Information and communication (ICT) equipment will be procured to link these institutions and provide a platform to access and share climate information to support climate-responsive ICZM. This information will include: i) climate dynamics; ii) best practice for ICZM; iii) the training material for ICZM developed under Sub-activity 2.2.3; iv) the ICZMP developed under Sub-activity 2.1.2; v) the spatial data procured under Sub-activity 2.3.1; vi) the high-resolution multicriteria vulnerability map developed under Sub-activity 2.1.1; and vii) lessons learned for upscaling and replicating project activities, which will be reported on under Activity 3.3. A national service provider will also be contracted under this activity to regularly update the system and to collect reports on the implementation of the ICZMP on an annual basis, which will be collated into a synthesis report and included as lessons learned in the database. Systems established under this activity for knowledge sharing will be used for upscaling through collaborative efforts with the GEF ICZM systems to provide climate information, products and services relating to coastal flood and erosion early-warning and risk management. The cross-project collaboration will contribute to effective coastal protection and adequate climate

⁵⁷ The datasets will have a resolution of 2 m or higher and will include red, green, blue and near-infrared bands of satellite images.



change adaptation planning that will limit the impact of climate change hazards on vulnerable communities and reduce their vulnerability.

67. To further support uptake of the system, the project will support the distribution of knowledge products to government entities and private sector stakeholders to increase awareness on the application of the EKMS. Improved awareness of the system in conjunction with increased ease of access to the EKMS will support improved access to environmental and climate change information for all government institutions responsible for coastal management. The EPA will be the Responsible Party for this activity, which will be financed by GCF and UNDP.

68. Sub-activities under this activity will include:

Sub-activity 2.4.1. Procure ICT equipment for each of the relevant government institutions to access and use climate and environmental information through the platform.

69. Under this activity, the project will procure computer equipment, remote servers and on-site data storage to facilitate access to the EKMS for the 10 government institutions responsible for management of the coastal zone and associated climate change impacts in Liberia. The ICT equipment procured under this activity will also be linked to the near-shore data-collection and monitoring system established under Activity 2.3. This will enable technical staff in the relevant government departments to access a shared resource on ICZM and facilitate access to data on current ocean conditions. As a result, cross-sectoral coordination as well as planning will be improved and early warnings for extreme storm surges or other storm-related disasters will be enhanced.

Sub-activity 2.4.2. Collect lessons learned on ICZM on an annual basis and incorporate this information into the EKMS.

70. A national service provider will be contracted under this activity to collect lessons learned, prepare a report and update the EKMS on an annual basis. The report will provide suggestions on best practice for effectively addressing climate change risks by implementing the newly developed ICZMP in Liberia and by scaling up project activities. This will be informed by project monitoring initiatives under Activity 3.3. Collecting lessons learned on an annual basis will not only support future updating of ICZM frameworks in Liberia in an effective and iterative way but will also ensure that all relevant government institutions benefit from lessons learned within each separate institution, as well as enabling research institutions to develop case studies and increase understanding about coastal protection and management in Liberia.

Sub-activity 2.4.3. Design and disseminate knowledge products on climate-responsive ICZM in government institutions and to the private sector.

71. Under this activity, a national service provider will be contracted to develop an awareness-raising strategy to increase knowledge on the EKMS and facilitate greater uptake of the EKMS within government institutions and among private sector partners⁵⁸. Knowledge products developed under this strategy will include posters and brochures which will provide information on the EKMS as well as on how to access ICZM and climate change information on the system. These knowledge products will be tailored to identified user-groups, which will include staff members of the relevant government institutions and private sector stakeholders in the coastal zone. The knowledge products will be designed in a gender-sensitive manner and will ensure that they are equally accessible for all government employees and private sector stakeholders. Furthermore, the products will depict the benefits of ICZM and the EKMS for different economic activities and social groups practicing different livelihoods strategies.

Activity 2.5. Conduct an awareness-raising campaign for communities in focus areas on climate change impacts and adaptation practices.

72. A specialist media or communication firm will be contracted to design a contextually appropriate campaign using a participatory process. The awareness-raising campaign will include developing visual communication materials and

⁵⁸ Relevant private sector partners will be identified by the service provider in consultation with the 10 government institutions. These private sector partners will be targeted because of their location in the coastal zone and the relevance of coastal climate change adaptation to their businesses.



knowledge products as well as facilitating local radio programmes and community meetings, which will serve as the primary platforms to engage communities. The communication materials — for example, billboards, posters, brochures and stickers — will be distributed within the four communities prioritised by the project⁵⁹ — West Point, Jacob's Town, Fiamah and Topoe Village — and will be erected in public spaces. These four communities have been selected based on their vulnerability to the impacts of climate change, linked to their proximity to the coastline (West Point) and degraded areas of the Mesurado Wetland (Jacob's Town, Fiamah and Topoe Village). The campaign will be designed in a gender-sensitive manner with a specific emphasis on differentiated impacts of climate change on social groups practicing a variety of livelihoods, as well as including information on a range of potential adaptation practices. The development and dissemination of knowledge products under this campaign will be further supported by upscaling the EKMS under Activity 2.4, which will serve as a repository for the knowledge products developed by the contracted firm.

73. To support further awareness-raising on coastal climate change impacts under this activity, knowledge-sharing groups will be established in each of the four communities prioritised for awareness-raising, making use of existing community structures where they exist. These groups will be overseen by the Community Stewardship Committee (CSC) established under Sub-activity 3.1.2 and linked to the knowledge and innovation centre established under Sub-activity 3.1.1. These groups will facilitate on-the-ground awareness-raising events, conduct visits to schools and various community organisations to distribute the knowledge products and raise awareness on climate change impacts and the actions that can be taken by communities to help reduce the pressures placed on local environments, such as the use of energy-efficient cookstoves introduced under Activity 3.4 over traditional wood fuel cookstoves. This activity will be implemented by the EPA and financed by GCF, UNDP and GoL.

74. Sub-activities under this activity will include:

Sub-activity 2.5.1. Design an awareness-raising campaign on climate change impacts and adaptation practices.

75. Under this activity, a media firm with experience in West Africa and expertise in communications, climate change and gender will be contracted to design an awareness-raising campaign on climate change impacts and adaptation practices. The firm will develop the initial campaign material through a participatory approach with relevant institutions and will update the campaign on an annual basis based on lessons learned — collected by the knowledge-sharing groups engaged under Sub-activity 2.5.3. The awareness-raising campaign and knowledge products will prioritise the impacts of climate change on mangroves and on the coastline, gender-specific climate change vulnerabilities and a range of adaptation practices, including activities that reduce pressure on mangrove ecosystems.

Sub-activity 2.5.2. Host radio programmes on climate change impacts, vulnerability and adaptation practices in coastal and wetland areas.

76. Under this activity, radio shows will be hosted every three months on climate change impacts, vulnerability and adaptation practices relating to coastal and wetland areas. The radio shows will each be one hour long and will be facilitated by government or project employees with experience and knowledge on climate change and adaptation practices. Additionally, the shows will include provision for men and women in communities to call-in and present questions and/or input, capitalising on local ecological knowledge as well as ongoing innovative and sustainable adaptation strategies.

Sub-activity 2.5.3. Establish, train and engage community-based knowledge-sharing groups to support on-the-ground awareness-raising and knowledge-sharing.

77. Under this activity, knowledge-sharing groups will be established in each of the four communities selected for awareness raising under the project. The knowledge-sharing groups will consist of four members in each of the four areas — at least half of whom will be women. The members of the knowledge-sharing groups will be nominated by their communities and the selection process will be managed by the Community Stewardship Committee (CSC) established under Sub-activity 3.1.2. The roles and responsibilities of the knowledge sharing groups will be set out in the constitution of the CSC and all members of the knowledge-sharing groups will sign agreements with the CSC

⁵⁹ West Point, Jacob's Town, Fiamah and Topoe Village



when they are selected. As the Executing Entity, the EPA will oversee this process and ensure and verify that the selection of the members of the knowledge-sharing groups is consistent with the needs of the project. The knowledge-sharing groups will be trained through annual five-day workshops and will be paid a monthly stipend for the duration of the project. The stipend will cover the time and transport costs of the group members and will be transferred to each group member using mobile money services. The EPA will also oversee the payments of stipends to the knowledge-sharing groups, which is included in the project budget and co-financed by the GoL. The groups will be mandated to assist the project in raising awareness by facilitating workshops organised under Sub-activity 2.5.5 as well as to collect lessons learned on the awareness-raising campaign and success of the knowledge products under Activity 3.3. The training of the knowledge-sharing groups will include links with the AfDB/GCF project focusing on climate information and early warning systems (EWS). In collaboration with the project management team from that project, synergies will be developed, including supporting last mile coverage of EWS through the knowledge-sharing groups. The community members engaged under this activity will be overseen by the Community Steering Committee (CSC) established under Sub-activity 3.1.2 and will be based at the education and innovation centre established under Sub-activity 3.1.1. In addition to assisting the project with awareness-raising workshops, the groups will conduct community outreach on a monthly basis, including undertaking visits to schools and other community gatherings for the dissemination of information on climate change, adaptation practices and co-management of natural resources.

Sub-activity 2.5.4. Install and distribute awareness-raising knowledge products within the four communities prioritised for awareness-raising interventions.

78. The visual media and other knowledge products designed under Sub-activity 2.5.1 will be produced, installed and disseminated under this activity. These products will include billboards, posters, brochures, stickers, caps and t-shirts. Large visual products, such as billboards and posters will be installed in open public spaces and around communal areas such as schools and community buildings. The smaller products — including stickers, brochures, caps and t-shirts — will be distributed through the education and innovation centre established under Sub-activity 3.1.1 as well as by the knowledge-sharing groups established under Sub-activity 2.5.3. These products will be refined annually by the firm contracted under Sub-activity 2.5.1 taking into account lessons learned by the knowledge-sharing groups and incorporating information from relating to early warning systems from the AfDB/GCF project.

Sub-activity 2.5.5. Organise community meetings to raise awareness around climate change adaptation and the benefits of proposed interventions.

79. Under this activity, gender and socially sensitive community meetings will be held to raise awareness around climate change impacts, adaptation practices and the benefits of the interventions being implemented under the project. A total of three community meetings will be held annually in each of the four areas prioritised for awareness-raising under the project. Two of the three meetings will be accessible to any members of the community and one will be exclusively accessible to women to provide a forum for raising awareness on gender-specific climate change impacts and adaptation practices, as well as to disseminate information on women's rights, women's empowerment and strategies for reducing gender-based violence.

80. These community meetings will be held at venues in the communities to ensure that they are accessible to community members and will be co-facilitated by the knowledge-sharing groups established under Sub-activity 2.5.3. The meetings will also serve as events to distribute the smaller knowledge products designed under Sub-activity 2.5.1 and to implement other awareness-raising actions — including setting up billboards in public spaces and disseminating information posters to schools.

Output 3. Protecting mangroves and strengthening gender- and climate-sensitive livelihoods to build local climate resilience in Monrovia.

81. Under Output 3, the proposed project will put measures in place to reduce the anthropogenic pressure on mangrove ecosystems in the Mesurado Wetland. By reducing this pressure, the health of the ecosystems will be improved and their resilience to sea-level rise (SLR) and the impacts of climate change will increase, so increasing the resilience of the communities in Monrovia that rely on these ecosystems for their livelihoods. In addition, reducing the degradation of mangroves will increase the likelihood of their long-term survival and adaptation to climate



change through migration. These mangroves are likely to be negatively impact by climate change-induced SLR which will decrease the area of the Mesurado Wetland in which they can grow. In addition, urban encroachment into the mangrove forests and the harvesting of mangroves for fuelwood, charcoal production and fish smoking have resulted in degradation of the mangrove ecosystems in Monrovia⁶⁰. In order to develop long-term climate resilience within vulnerable, mangrove-dependent communities there is a need to: i) support community conservation of mangroves in the MMA to secure the provision of critical ecosystem services in the face of observed and expected climate change impacts; and ii) develop local climate-resilient livelihood activities and strengthen market access for small and informal enterprises engaged in these activities. These community level approaches to adaptation will benefit from improved coastal protection measures being implemented under Output 1 and will integrate with the long-term adaptation planning being developed under Output 2, to support transformative change at both institutional and community levels.

82. Activities under this output will target four communities adjacent to degraded areas of the Mesurado Wetland. West Point, Jacob's Town, Fiamah and Topoe Village are particularly vulnerable to the impacts of climate change as a result of their proximity to and reliance on the coast and mangroves for their livelihoods (Figure 13)⁶¹. These communities will also play an important role in ensuring the long-term protection of these mangrove ecosystems as they surround degradation hotspots in the Mesurado Wetlands. These activities will focus on four integrated thematic areas for building climate resilience, namely: i) safeguarding ecosystem services provided by mangroves; ii) improving community knowledge on climate change impacts and adaptation practices; iii) reducing pressure on mangrove forests from fuelwood harvesting by reducing demand for fuelwood; and iv) strengthening climate-sensitive livelihoods and supporting the uptake of climate-resilient livelihoods. To capitalise on the experience of NGOs based in Monrovia, the project will seek to engage NGOs — with experience in the four aforementioned thematic areas — as service providers for relevant activities under this output.



Figure 13. Landcover map of Monrovia, showing the Mesurado Wetland and focus areas (in bold text) for the proposed project — West Point, Topoe Village, Jacob's Town, Plonkor and Fiamah.

83. To ensure the safeguarding of mangrove ecosystem services, a community-centred co-management agreement will be developed based on the principles of Community-Based Natural Resource Management (CBNRM), developed through extensive stakeholder engagement. An awareness-raising campaign will be conducted to inform the focus area communities about the co-management agreement, alternative livelihood opportunities, climate change impacts and the importance of mangrove ecosystems. The impact of these awareness-raising activities will

⁶⁰ Annex 2.D: Mangrove Sub-assessment provides details of how the Mesurado Wetland supports livelihoods of communities in Monrovia as well as an analysis of the threats to these ecosystem both from climate change and anthropogenic pressure.

⁶¹ See Section 3 in Annex 2.D: Mangrove Sub-assessment.



be assessed through annual state-of-knowledge assessments. Finally, to reduce pressure on the mangrove ecosystems from fuelwood harvesting, facilities for the manufacturing of energy-efficient cookstoves will be established at the education and innovation centre and solar-powered cold storage facilities will be established near major fish processing sites to reduce the need for fish smoking. The cold storage facilities will be managed by women in the community and will significantly reduce food wastage, which will contribute to making fisheries more resilient to climate change impacts. In this way, the facilities will support the vulnerable coastal communities to increase their income and improve their adaptive capacity. The incorporation of solar self-sustaining cold storage facilities into fishing communities is a priority within the MMA because of the limited infrastructure and capacity for generating electricity required to prolong the shelf-life of fish prior to transport to the market.

Activity 3.1. Establish a community education and innovation centre to function as a community knowledge generation and learning hub, repository on climate change adaptation practices and to host community activities under Output 3.

84. Under this activity, an education and innovation centre will be established in West Point, through co-financing, to host and coordinate activities under Output 3. Because of its central location, the centre will be accessible to communities across Monrovia and will act as a repository for material on awareness-raising, knowledge-sharing, livelihood development and innovation related to climate change⁶². An existing building on community- or government-owned land will be identified and renovated to make it fit for purpose and accessible to people with disabilities. Multi-purpose facilities, including cooking areas, open training areas and appropriate sanitation facilities will be installed as part of the renovations, thereby ensuring that the centre serves as a multi-purpose space and receives buy-in from the actively engaged local communities. Additionally, the centre will host training on the community-level maintenance of the revetment build under Output 1 (see Annex 21: O&M Plan). All activities and initiatives implemented through the centre will incorporate gender-responsiveness as a primary consideration.
85. Management of the centre will be undertaken by the community knowledge-sharing groups established under Sub-activity 2.5.3 with oversight provided by the project management team and the Community Stewardship Committee (CSC) established under Sub-activity 3.1.2. The centre will be governed by a set of by-laws agreed upon by the community or government entity that owns the centre and the CSC, in consultation with the MPW and MoGCSP. The by-laws will be subject to review and acceptance by the Executing Entity. The CSC will be legally registered as a community-based organisation (CBO). Two bank accounts will be opened by the CSC, in association with the centre to facilitate: i) the management of income from the cookstoves sold under Activity 3.4 and purchase of further materials for manufacturing the cookstoves; and ii) the management of the nominal fees from the usage of the cold storage facilities established under Activity 3.5 and maintenance of these facilities. The income derived from these activities will be managed by the CSC and reported on quarterly to the PMU for the duration of the project. All income will be used to support the sustainability and upscaling of project activities and will not be considered profit. Indicative estimates of the income managed by the CSC are provided in the descriptions of Activity 3.4 and 3.5 below. After project completion, the funds will also be used to continue to pay a monthly stipend to the CSC members⁶³. In addition to facilitating the various community training workshops, the centre will act as the home base for the CSC and for consultants conducting assessments under Activities 3.2; 3.3 and 3.5. The establishment of the centre as a physical location will significantly contribute to the impact of Output 3 in developing alternative livelihoods, increasing community awareness on climate change and shifting the community's perception of the value of mangroves. This activity will be implemented by the EPA and financed by GCF, UNDP and GoL.

86. Sub-activities under this activity will include:

Sub-activity 3.1.1. Locate, renovate and equip existing structure situated on community or municipal-owned land in West Point.

⁶² The project proposes to upgrade existing buildings/structures to establish the innovation centres, which will minimise the cost of this intervention.

⁶³ The expenditure to pay the CSC members is USD500 per month. If the income is insufficient to cover this cost, the EPA will support the CSC to collectively decide whether to reduce the monthly stipend for each member or other options that will enable the CSC to continue functioning effectively. It is expected that the time commitment expected from the CSC will be reduced after the project has been completed.



87. Under this activity, a site will be identified by the PMU in consultation with community and government stakeholders, to serve as the education and innovation centre and an agreement will be reached with the respective community, government department or municipality overseeing it⁶⁴. The site will be selected according to: i) availability and willingness of owners for it to be used by the community; ii) size and suitability for use as an education and innovation centre; and iii) location and accessibility to the community. The centre will be renovated by the Ministry of Public Works, overseen by the EE, to ensure that is a safe environment to host community engagements and accessible to people with disabilities. It will be outfitted with basic cooking, training and sanitation facilities to ensure that it acts as a community gathering area. The newly renovated centre will also be equipped with basic furniture or with other equipment — for example, tables and seating — to facilitate the hosting of workshops and other training activities. Maintenance costs for the centre are expected to be minimal as only basic and durable facilities will be installed. A Memorandum of Understanding (MoU) will be reached with the community or government entity that owns of the renovated centre to undertake any required maintenance for the duration of the project.

Sub-activity 3.1.2. Establish and commission the ten-person Community Stewardship Committee with representatives from each of the four areas.

88. Under this activity, the Community Stewardship Committee (CSC) will be established and registered as a community-based organisation to provide high-level oversight for all community-based activities under Output 3 and 1. The members of the CSC will be selected every 3 years based on community nominations and each member will enter into a contractual agreement with the EPA which will outline their roles and responsibilities and the conditions of their stipends⁶⁵. They will include at least 50% women and be representative of the four focus areas (West Point, Topoe Village, Jacob's Town, and Fiamah and Plonkor) and include the women managing the cold storage facilities under Activity 3.5. The CSC will provide community oversight and support for each of the activities under Output 3 and community-based activities under Output 1 (revetment maintenance). The education and innovation centre will act as a headquarters for the CSC who will host regular meetings with the knowledge-sharing groups to provide input and guidance. The PMU will facilitate the development of a formal constitution for the CSC, which will be finalised and validated during the workshop under Sub-activity 3.1.4. The constitution will set out the roles and responsibilities of the CSC and the knowledge-sharing groups established under Activity 2.5. In addition, two bank accounts will be opened and governed by the CSC to manage the income and expenditure relating to: i) the energy efficient cookstoves developed under Activity 3.4.; and ii) the use and maintenance of the cold storage facilities developed under Sub-activity 3.5.2. These funds will also be used to pay monthly stipends to CSC members after the end of the project lifecycle. The CSC will report to the PMU every quarter on the income and expenditure relating to these two activities for the duration of the project.

Sub-activity 3.1.3. Host an inauguration event to open the centre to the public and present the members of the Community Stewardship Committee.

89. To promote the education and innovation centre and secure community buy-in, an inauguration event will be held at the centre. This event will incorporate awareness-raising activities and during the event community members nominated for the CSC — as well as the by-laws governing the education and innovation centre — will be presented by local officials and community authorities.

Sub-activity 3.1.4. Host a collaboration workshop for government representatives, CSC members and NGOs to meet and define the guiding principles for the education and innovation centre.

90. Under this activity and subsequent to the launch of the education and innovation centre, a two-day collaboration workshop will be organised for all members of the CSC, as well as representatives from relevant government ministries, NGOs, development, conservation and community organisations. This workshop will provide an opportunity for all relevant stakeholders to: i) finalise and validate the constitution of the CSC; ii) define a set of guiding principles for the education and innovation centre; iii) develop linkages between similar ongoing initiatives; and iv) share innovative ideas and lessons learned from past experiences. Additionally, during the workshop, guest speakers on each of the three thematic areas prioritised under Output 3 — CBNRM, local livelihood development

⁶⁴ The buildings will not be purchased under the project – instead existing community-owned structures (structures owned by community groups or local government). There will be no issues with property rights since the project will be utilising community or public land and/or buildings.

⁶⁵ These contractual agreements between the CSC members and the EPA will apply both during and after the project period.



and awareness-raising — will be invited to give presentations as well as experts on climate change, ICZM and gender mainstreaming.

Activity 3.2. Establish community-led co-management agreement to ease anthropogenic pressure on mangroves in the MMA.

91. To safeguard ecosystem services and livelihoods that depend on mangroves, the project will facilitate the development of a community-led co-management agreement for mangroves in the Mesurado Wetland⁶⁶. The agreements will be underpinned by the existing land-use management framework and the improved institutional and regulatory framework for ICZM developed under Output 2. They will also be supported by awareness-raising activities and incentives for alternative livelihood practices developed under Activities 3.4 and 3.5. The development of the co-management agreements will be facilitated by expert negotiators and will be undertaken through a participatory approach — engaging the CSC, relevant government institutions, NGOs and civil society. Participation of these stakeholders in the design process will ensure that community needs and concerns are incorporated into the agreement and that community buy-in and ownership of the agreement are developed. The agreement will prioritise equitable access and will seek to shift the paradigm of community members from considering themselves as users of mangrove ecosystems to participating in the co-management of the ecosystems. These objectives will be supported by the engagement and relationship-building between stakeholders. The co-management agreements will be developed in concert with the development of the ICZMP under Activity 2.1 and, like the ICZMP, will be reviewed and revised during the project period. This will ensure that both processes have opportunity for learning and that the CBNRM co-management model developed under Activity 3.2 can be incorporated into the ICZMP. The development of the co-management agreement will draw on lessons learned from similar initiatives elsewhere in Liberia⁶⁷ and will provide a foundation for future initiatives to conserve mangroves in Monrovia. This activity will be implemented by the EPA and financed by GCF.

Sub-activities under this activity will include:

Sub-activity 3.2.1. Develop the community-led co-management agreement through a participatory, gender-sensitive process.

92. Under this activity, two national consultants with experience in facilitation and natural resource management will be contracted to draft the co-management agreement. The consultants will undertake extensive consultations with conservation organisations, government institutions and community members to develop an understanding of the various pressures currently exerted on mangroves, as well as the various uses of mangroves and mangrove products by communities. These engagements will provide the consultants with the information necessary to draft the co-management agreement in such a manner as to ensure that the concerns of all relevant stakeholders are taken into account and incorporated into the agreement and provide an opportunity for stakeholders to build relationships and share information related to the complexities of managing urban mangrove ecosystems. Building on the institutional and regulatory framework for ICZM (Output 2), and the initiatives targeting alternative livelihood practices in Output 3, the co-management agreement will include the synthesis of positive incentives and for the sustainable use and conservation of the mangrove ecosystems in the Mesurado Wetland. The primary parties to the co-management agreement will be the communities of West Point, Topoe Village, Jacob's Town, Plonkor and Fiamah and the EPA. Through the consultation under this sub-activity, the national consultants will identify and confirm additional parties to the agreements, including, for example, NGOs like Conservation International and government agencies like the Ministry of Gender, Children and Social Protection (MoGCSP). Details of the monitoring of conservation actions (linked to Activity 3.3) and delivery of the agreed benefits will also form part of the co-management agreement.

Sub-activity 3.2.2. Host a three-day co-design and validation workshop for the community-led co-management agreement.

⁶⁶ Local buy-in to proposed co-management agreements is critical to this activity and will be facilitated by an analysis of lessons learned from similar co-management projects undertaken in Liberia. The analysis on mangrove ecosystems in the Mesurado Wetland (Annex 2.D) and engagement with Conservation International in particular will contribute to further inform this activity.

⁶⁷ These include the GEF-funded Conservation International project entitled “Improve sustainability of mangrove forests and coastal lamangrove areas in Liberia through protection, planning and livelihood creation – building blocks towards Liberia’s marine and coastal protected areas”, and the GEF-funded World Bank project entitled “Consolidation of Liberia’s Protected Area Network”



93. Under this activity, a three-day co-design and validation workshop will be hosted for relevant government ministries, NGOs, conservation organisations and CSC members to engage on the draft co-management agreement developed under Sub-activity 3.2.1. Women and vulnerable groups will be represented at the workshop to ensure the inclusion of their specific concerns in this process. The workshop will be facilitated by the national consultants contracted under Sub-activity 3.2.1 and will provide an opportunity for any outstanding concerns or points of contention to be raised by concerned parties. The final day of the workshop will be used as a validation session to ensure that the final version of the co-management agreement incorporates the needs of all relevant stakeholders and secures buy-in from communities, government and NGOs alike.

Sub-activity 3.2.3. Design and implement an awareness-raising campaign on sustainable Community-Based Natural Resource Management (CBNRM) and the co-management agreement.

94. Two national consultants or service providers with experience in community awareness-raising and visual media design will be contracted under this activity to develop an awareness-raising campaign to disseminate information on the benefits of Community-Based Natural Resource Management (CBNRM) and the sustainable management of mangroves. The campaign will also include information on detrimental environmental practices, such as sand mining along beaches and rivers, and information on practices that help reduce the pressure on the environment, such as the use of the energy-efficient cookstoves introduced under Activity 3.4 over traditional wood fuel cookstoves. The service provider will work in collaboration with the national consultants contracted under Sub-activity 3.2.1 to ensure that the knowledge products developed: i) align with the co-management agreement and are gender-sensitive in their design; ii) are informed by local ecological knowledge; iii) depict the uses of mangroves by different social groups and sectors; and iv) provide an appropriate level of information for dissemination within communities. The knowledge products produced under this activity will include posters for each of the four areas, brochures to be distributed through the education and innovation centre and large signboards that will be installed within communities and at commonly-used entry points to access the mangroves, particularly in degradation hotspots. The awareness-raising campaign strategy and materials will be updated annually and informed by the state-of-knowledge assessments conducted under Sub-activity 3.3.2. This intervention will build on links with the AfDB/GCF project to strengthen Last Mile coverage of the early warning systems (EWS) developed under that project. This will be done by including information on EWS in the awareness-raising materials, in collaboration with the project management team of the AfDB/GCF project, and raising awareness about how to access EWS.

Sub-activity 3.2.4. Host a workshop to assess the effectiveness of the co-management agreement (Activity 3.2.1) and re-negotiate it in Year 5 based on findings from Activity 3.3.

95. Under this activity, a two-day workshop will be hosted for the CSC, relevant government institutions, NGOs and civil society in Year 5 of the project implementation period. At this workshop, the impact of the co-management agreement will be assessed based on information collected under Activity 3.3 and the experience of the relevant stakeholders. Drawing on these lessons learned, the co-management agreement will be revised and validated by the stakeholders at the workshop. Outcomes of this process will also inform the revision of the ICZMP in Year 6 under Activity 2.1.

Activity 3.3. Conduct annual assessments to evaluate the project-induced changes in mangrove degradation, community perceptions and awareness of climate change impacts, adaptation options and mangrove ecosystems throughout the project implementation period.

96. To assess the adaptive capacity of the four communities prioritised for awareness-raising and livelihood development, state-of-knowledge assessments will be undertaken periodically under this activity. These assessments — building on preliminary work undertaken during the PPF phase of the project — will consider community awareness on climate change impacts and adaptation options, CBNRM and the role of mangrove ecosystems in the MMA as well as the different types of climate-resilient livelihoods currently being practiced within the MMA. These surveys will be conducted periodically to determine the annual change-in-state, which will help to refine the awareness-raising campaigns and support the uptake of additional climate resilient livelihoods. The state-of-knowledge assessments will be complemented by periodic assessments of mangrove health and degradation in the Mesurado Wetland, conducted using the high-resolution spatial data procured under Sub-Activity 2.3.1. The reports produced from this analysis will assess the impact of the project on mangrove protection in Monrovia. The



primary purpose of this activity is not to inform the development of any interventions, but to act as a method to collect data on what interventions are effective as well as how successful community awareness raising, the co-management agreement and livelihood development activities are on an annual basis. Furthermore, the collection of data will enable research institutions, including, for example the University of Liberia, to strengthen their knowledge and understanding of coastal livelihoods and ICZM in Liberia. This will contribute to the development of national capacity for driving ICZM. In addition to the long-term benefits, ongoing monitoring and assessment will support the adaptive management of the project — including through the revision of the ICZMP and co-management agreement — and contribute to the development of further effective awareness raising activities and livelihood development initiatives beyond the lifespan of the project. To this end, lessons learned collated under this activity will be made available through the EKMS under Activity 2.4. This activity will be implemented by the EPA and financed by GCF, UNDP and GoL.

Sub-activities under this activity will include:

Sub-activity 3.3.1. Using high-resolution remote sensing data procured under Sub-activity 2.3.1, conduct analyses of mangrove extent and degradation in the Mesurado Wetland to assess the impact of project interventions

Under this activity, a report on trends in mangrove health and degradation in the Mesurado Wetland will be produced based on the high-resolution remote sensing data procured under Sub-activity 2.3.1. First, the report will provide an analysis of historical trends in mangrove degradation over the ten years prior to the project implementation period. This report will provide a baseline for measuring project impact on mangrove protection. The baseline report will be updated based on new datasets acquired in Years 4 and 6 of the project period to assess the impact of the project on mangrove degradation trends. These updates will be used in concert with those produced under Sub-activity 3.3.2 to evaluate the effectiveness of the co-management agreement and awareness-raising activities (Activity 3.2) and to collate lessons learned from the project interventions.

Sub-activity 3.3.2. Conduct a baseline state-of-knowledge survey on climate change impacts, adaptation options, CBNRM and mangrove ecosystems and undertake annual surveys to determine the change-in-state over the duration of the project.

97. Under this activity, a service provider will be contracted to conduct community-level assessments in each of the four areas prioritised under the project to develop indicators that determine baseline community perceptions and awareness on climate change, adaptative strategies, as well as the role and importance of mangrove ecosystems. Surveys carried out in the first year will be collated into a report that will act as a baseline on the state of community knowledge on climate change, adaptation and mangroves. Further annual surveys will be conducted throughout the project period to determine the effectiveness of the awareness-raising programme. Reports produced from the annual surveys will act as lessons learned and will be used to by consultants engaged under Sub-activity 2.5.1 to update the awareness-raising campaign on an annual basis, as well as to inform revisions to the co-management agreement under Sub-activity 3.2.4, and by tertiary institutions to further research on coastal protection and management in Liberia. The reports produced under this activity will be made publicly accessible through the EKMS (Activity 2.4) to support the replication and upscaling of successful awareness-raising strategies.

Sub-activity 3.3.3. Undertake periodic assessments of climate-resilient livelihood practices and new opportunities to inform the design of new options and determine their uptake as a result of the project.

98. An important function of the education and innovation centre established under Sub-activity 3.1.1 will be to provide community members — particularly women — with alternative climate-resilient livelihood activities to increase their resilience to climate change. To support livelihood development and the uptake of climate-resilient livelihoods, a national service provider with expertise in the development of alternative, climate-resilient livelihoods will be contracted to assess the baseline of existing livelihood strategies (including income levels) in the four target communities. Building on the preliminary information generated as part of the project PPF phase⁶⁸, the service provider will detail a menu of potential alternative livelihood strategies and/or strategies to increase the climate-resilience of existing livelihood practices. During the project PPF phase, the manufacturing of eco-friendly

⁶⁸ See Annex 2.A: Feasibility Study and Annex 2.D: Mangrove Sub-assessment; Annex 6: Environmental and Social Assessment Report; and Annex 8: Gender Assessment and Action Plan.



cookstoves (Activity 3.4) was identified as a climate-resilient livelihood activity. Under Sub-activity 3.3.3, further alternative climate-resilient livelihoods will be identified by the service provider and incorporated into the training of community members under Activity 3.4, to support the ongoing adoption of climate-resilient livelihood practices beyond the implementation period and geographical scope of the project. An alternative livelihoods option targeted under the LDCF UNDP Liberia project in Sinoe County aims to stimulate the Compressed Stabilised Earth Blocks (CSEB) industry as alternative to beach and river sand mining. This will be assessed for viability in Monrovia, along with the viability of agricultural residue for use as fuel-pellets. The assessment of agricultural residue will identify whether the fuel-pellet industry can foster and promote a circular economy while also reducing pressure on mangroves and forests. The livelihoods being assessed by the service provider will specifically focus on practices that can be taken up by women and other vulnerable people. In addition to the identification of alternative livelihoods, the assessment will identify the viability of improved fish smoking kilns⁶⁹ as complimentary interventions to the demonstration site at the EIC and improved cookstoves under Activity 3.4 and as support to the cold storage units introduced under Activity 3.5.

99. The service provider will additionally undertake annual surveys to determine the uptake of these livelihoods within the four communities — as well as outside of the project focus areas —, monitor the effectiveness of the financing plan developed under Activity 2.2.2 and prepare annual reports. In addition, the annual surveys and reports should be used to provide information on whether the livelihoods promoted by the project are appropriate and are able to secure community buy-in. Further upscaling of climate-resilient livelihoods will be supported by presenting the reports, which will act as a resource on what types of livelihoods are seen as appropriate as well as which of these gain the greatest buy-in by local communities.
100. The dissemination of information from these assessments — which will be collated into a report and associated knowledge products — will make use of the EKMS (Activity 2.4) and will contribute to the uptake of further alternative and diversified livelihood opportunities facilitated by the education and innovation centre. Furthermore, by providing access to these knowledge products the project will enable tertiary institutions to explore and support the replication and upscaling of successful strategies.

Activity 3.4. Establish small-scale manufacturing facilities and develop training material to capacitate community members to manufacture and sell cookstoves to support alternative climate-resilient livelihoods.

101. Under this activity, the project will support the uptake of diversified climate-resilient livelihoods and improved mangrove management by developing training courses, establishing small-scale manufacturing facilities, and providing material inputs for the fabrication of value-added products — specifically energy-efficient cookstoves⁷⁰. The manufacturing facilities will be incorporated into the education and innovation centre in West Point (established under Activity 3.1) and will be accessible to communities from around Monrovia, including the other project focus areas of Topoe Village, Jacob's Town, and Fiamah and Plonkor. The activity will focus on developing alternative climate-resilient livelihood opportunities for women and other vulnerable groups, in collaboration with the CSC established under Activity 3.1. The activity will build on lessons learned from the *African Improved Cooking Stoves Programme of Activities*, and training materials will be made publicly accessible to support the upscaling of the activity to other parts of Monrovia. This activity will be implemented by the EPA and financed by UNDP.
102. Energy-efficient cookstove production was selected as a focus for this activity because there is a market for these stoves in Monrovia and the construction of the stoves requires minimal material input or training. In addition to providing alternative livelihood opportunities, supporting the uptake of energy-efficient stoves across the MMA will support the implementation of the mangrove co-management agreement (Activity 3.2) by reducing existing anthropogenic pressure on the MMA's mangroves, specifically relating to harvesting of mangroves for fuelwood⁷¹. In the awareness-raising campaign under Activity 3.2, alternative livelihood practices such as the use of improved, energy-efficient cookstoves will be promoted and links to Activity 3.4 will be made as a way to support behaviour change within the target communities. Although the large-scale adoption of energy-efficient cookstoves has potential

⁶⁹ An example of an improved kiln is the FAO Thiaroye Processing Technique kiln, details of which are available online at: <http://www.fao.org/3/a-i8301e.pdf>

⁷⁰ See Section 7.2 of Annex 2.D: Mangrove Sub-assessment for further information on the proposed design of these cookstoves.

⁷¹ See Section 2 of Annex 2.D: Mangrove Sub-assessment for details of fuelwood harvesting in the Mesurado Wetland.



benefits in terms of greenhouse gas (GHG) emission reduction⁷², the mitigation co-benefits of this project activity are very small. It is expected that the use of project-supported stoves⁷³ will reduce GHG emissions by ~4,750 tCO₂e^{74, 75} during the project period and by ~1,580 tCO₂e/year (less than 0.0002% of Liberia's annual GHG emissions⁷⁶), for the lifespan of the stoves. Because of the small scale, emission reduction benefits of the activity will not be measured under the project. Training under Sub-activity 3.4.1 and workshops under Sub-activity 3.4.3 will, however, develop skills and capacity for community members to upscale energy-efficient cookstove production beyond the lifetime and geographical scope of the project. Additionally a larger scale fish smoking kiln system (which can be used for larger volumes of fish, for example by collectives of fish mongers) will be installed at the EIC as a demonstration site, allowing communities to test this technology, and training will be provided on the benefits of the technology for potential up-scaling⁷⁷.

Sub-activities under this activity will include:

Sub-activity 3.4.1. Develop a training programme and publicly available training materials and conduct trainings to capacitate community members to manufacture energy-efficient cookstoves.

103. In order to provide communities with immediate benefits — as well as to contribute to increasing energy efficiency and reducing demand for fuelwood — a national service provider will be contracted under this activity to develop a training course and provide training on the construction of energy-efficient stoves through a training-of-trainers approach. The service provider will prepare a training manual for constructing these stoves, which will be accessible at the education and innovation centre (Activity 3.1) and through the EKMS (Activity 2.4). The service provider will also organise trainings at the centre to ensure that interested community members have the requisite information to construct the energy-efficient cookstoves. The service provider will undertake further annual trainings at the education and innovation centre to capacitate community members to undertake a variety of diversified livelihoods or develop a range of value-added products, based on the results of the assessments conducted under Sub-activity 3.3.2. This training, and specifically the training-of-trainers approach, will contribute to the sustainability of the livelihood activities beyond the project lifespan and facilitate the replication of the activities in other communities in Monrovia.

Sub-activity 3.4.2. Establish a small-scale manufacturing workshop and procure equipment and material for the education and innovation centre.

104. Under this activity, basic facilities — including open-air roofed structures — will be constructed and installed in close proximity to the education and innovation centre. These structures will be used during the training conducted under Sub-activity 3.4.1. Additionally, under this activity material inputs will be provided by the project to facilitate the initial construction of the energy-efficient cookstoves⁷⁸. These materials will provide the initial financial input for manufacturing the first batch of stoves, with additional material inputs for the construction of further cookstoves to be entirely provided by income gained from selling the stoves⁷⁹. The sale of the cookstoves will be managed by the CSC. Through the bank account established under Sub-activity 3.1.2, management of this income and

⁷² The African Improved Cooking Stoves Programme of Activities will have a measurable impact on GHG emissions in Liberia and has been registered through the Clean Development Mechanism (CDM). Further information about this project is available at: <https://cdm.unfccc.int/filestorage/7/T/S/7TSH21WOQ6CKNDXAZE48RJPG3FL5I9/PoA%205342%20CPA%2000014%20Liberia%20v4.0.0%2029032019?t=SE18cWwwZHvfdALXuqkkfrkBFTXfpsKD>

⁷³ US\$16,000 is included in the project budget to purchase materials for the cookstoves and will support the manufacture of ~640 stoves (half in Year 2 and half in Year 4).

⁷⁴ Assuming the emissions reductions from the project-supported cookstoves will be equivalent to those of the *African Improved Cooking Stoves Programme of Activities* registered under CDM, each cookstove will reduce GHG emissions by ~2.47 tCO₂e per year.

⁷⁵ It is assumed that cookstoves manufactured in Year 2 will be operational from Year 3 and those manufactured in Year 4 will be operational from Year 5.

⁷⁶ calculated using national GHG emission information from the Intended Nationally Determined Contribution, available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Liberia%20First/INDC%20Final%20Submission%20Sept%2030%202015%20Liberia.pdf>

⁷⁷ Mindjimba, K., Rosenthal, I., Diei-Ouadi, Y., Bomfeh, K. and Randrianantoandro, A. 2019. FAO-Thiaroye processing technique: towards adopting improved fish smoking systems in the context of benefits, trade-offs and policy implications from selected developing countries. FAO Fisheries and Aquaculture Paper no. 634. Rome. FAO. 160 pp. Licence: CC BY-NC-SA 3.0 IGO.

⁷⁸ See Section 7.2 of Annex 2.D: Mangrove Sub-assessment for further information on the proposed design of these cookstoves.

⁷⁹ The income from manufacturing cookstoves is estimated at US\$8,000/year (US\$25/cookstove x 320 cookstoves manufactured per year), where US\$8,000 is budgeted for the initial purchase of material inputs and cookstoves are sold at cost price to incentivize uptake.



purchasing of additional material will be overseen by the CSC, in collaboration with the Project Management Unit and UNDP. Additional limited funds will be provided two years after the inception of this activity to purchase further material inputs based on the assessments undertaken under Sub-activity 3.3.2. Furthermore, the project will install an improved communal fish smoking kiln system, modelled after the FAO-Thiaroye fish processing technique (FTT), for use as a demonstration and education tool⁸⁰. Introducing communal smoking facilities could change the way this informal economy operates. By demonstrating this technology, its potential up-take in the community can be assessed.

Sub-activity 3.4.3. Host an annual workshop at the education and innovation centre to capacitate women's groups on business strategies and connect them with value chain actors to upscale the development of energy efficient value-added products.

105. To support the uptake and upscaling of the livelihoods being supported under the project, annual workshops and consultations will be hosted at the education and innovation centre to act as information sessions and networking events for women's groups, fishmongers, value-chain actors and the domestic private sector, informal finance institutions and agencies. By facilitating relationship-building between community members and value chain actors, these events will provide practical support for the development of small cookstove manufacturing businesses. In addition to creating networking opportunities, the events will: i) enable business skills development; ii) provide training on marketing strategies and links to the awareness-raising campaign under Activity 3.2; and iii) facilitate access to finance for investments into, and upscaling of, the value-added products being developed at the education and innovation centre, including the energy-efficient cookstoves. These workshops will also support access to higher value markets for fishmongers — who will be benefiting from improved access to higher-value fresh fish as a result of the cold storage facilities established under Activity 3.5 — by connecting the fishmongers to hotels, restaurants and other local private sector actors. Informed by the livelihood assessment (Sub-activity 3.3.3), the events under this sub-activity in the later years of project implementation will also create space to explore other potential innovations and alternative livelihood opportunities, including for example, the upscaling of communal fish smoking facilities like those demonstrated at the education and innovation centre (Sub-activity 3.4.2).

Activity 3.5. Purchase and install low-maintenance eco-friendly cold storage facilities near fish processing sites to reduce pressure on mangroves and increase market efficiency.

106. The fishing industry in Monrovia accounts for a significant percentage of the food consumed by the population of the MMA, however limited access to cold storage means that most fish needs to be smoked to increase shelf life. This contributes to the demand for fuelwood from mangrove forests in the Mesurado Wetland⁸¹. Despite smoking, a significant proportion of the fish caught by communities does not make it to market (see Annex 2.D). To reduce waste and the reliance on fuelwood sourced from the mangroves as well as to improve food security for the MMA, cold storage units will be designed and installed in proximity to the major fish processing site in the MMA at West Point⁸². The proposed cold storage facilities under this activity are intended to be accessible to all fisherfolk in the area and to be provided at a relatively small scale, based on a preliminary assessment of the costs of these interventions. The units will be designed to require limited maintenance and any required maintenance will be facilitated by designated women on the CSC — who will be mandated with overseeing the operation and condition of the cold storage units as well as facilitating access for local community members. Funding for required maintenance will be supported by charging those who use the units a small fee, to be paid into a community fund established under Sub-activity 3.1.2. This will ensure the sustainability of the units and the ability to meet their minimum maintenance requirements. This activity will be implemented by the EPA and financed by UNDP.

Sub-activities under this activity will include:

⁸⁰ Mindjimba, K., Rosenthal, I., Diei-Ouadi, Y., Bomfeh, K. and Randrianantoandro, A. 2019. FAO-Thiaroye processing technique: towards adopting improved fish smoking systems in the context of benefits, trade-offs and policy implications from selected developing countries. FAO Fisheries and Aquaculture Paper no. 634. Rome. FAO. 160 pp. Licence: CC BY-NC-SA 3.0 IGO.

⁸¹ See Section 2 of Annex 2.D: Mangrove Sub-assessment for further information on anthropogenic pressures on the Mesurado Wetland.

⁸² See Sections 6.5 and 7.1 of Annex 2.D: Mangrove Sub-assessment for further information on the proposed design of these cold storage facilities.



Sub-activity 3.5.1. Develop site-specific eco-friendly, solar-powered cold storage units for the West Point fish processing site based on the needs of fishers and fishmongers

107. Under this activity, a service provider will be contracted to develop site-specific designs for the cold storage units based on the needs of the community, building on prior community engagements that have established the basic requirements for facilities of this type⁸³. The service provider will also be responsible for developing a management system, in consultation with the CSC, that aligns with the preferred method for community management of the units and focuses on empowering women. Two representatives of the fishing community will be selected for the CSC and will be responsible for overseeing the management of the cold storage units⁸⁴. This information will be generated through stakeholder consultations undertaken with fisherfolk in the area. All stakeholder engagements will be conducted in a gender-sensitive manner and will take into consideration the needs of vulnerable people and women for utilising and accessing the cold storage units⁸⁵. The same service provider will be contracted to undertake annual assessments to evaluate the differentiated use and impact of the cold storage units by fishmongers and to determine the financial feasibility of upscaling this initiative across Monrovia and other regions of Liberia.

Sub-activity 3.5.2. Host a workshop in the targeted community to validate the designs (Sub-activity 3.5.1) and capacitate fisherfolk in the use and management of the cold storage units.

108. The designs developed under Sub-activity 3.5.1 will be validated by community members at a training and validation workshop. The service provider contracted under Sub-activity 3.5.2 will also provide training on the use, management and maintenance of the cold storage facilities as well as making community members aware of the benefits of using these facilities. The workshop will be conducted in a gender-sensitive manner, to ensure that the needs and inputs of both women and men are considered in the finalisation of the design for the cold storage units. This will also ensure that all user groups receive the appropriate training and information.

Sub-activity 3.5.3. Install and operate the low-maintenance eco-friendly solar-powered cold storage units.

109. A firm with experience in developing similar solar-powered cold storage units will be contracted under this activity to construct and install two eco-friendly cold storage units at the West Point fish processing site based on the designs validated in Sub-activity 3.5.2. The cold storage units will be constructed from upcycled shipping containers and will not require regular maintenance. In addition to developing the units, the contracted firm will be responsible for providing technical specifications, designs and training to relevant government representatives and the CSC to support future maintenance of the units and the potential for upscaling this system across other coastal areas of Liberia⁸⁶. These designs will be publicly accessible through the EKMS (Activity 2.4).

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

110. The project will be implemented following UNDP's National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement (SBAA) between UNDP and the GoL, the Country Programme Action Plan (CPAP), and as per the policies and procedures outlined in the [UNDP POPP](#).

111. UNDP provides oversight and quality assurance involving UNDP staff in Country Offices and at regional and headquarters levels. The quality assurance role involves objective and independent project oversight and monitoring functions. This will include overseeing the achievement of project management milestones that are established as per the board-approved project proposal. Project assurance is independent of the Project Management function. As such the National Project Steering Committee cannot delegate any quality assurance responsibilities to the National Project Coordinator and/or anyone paid for by the project resources. The project assurance role is covered by the Accredited Entity fee provided by the GCF. As an Accredited Entity to the GCF, UNDP is required to deliver GCF-specific oversight and quality assurance services including: i) day-to-day oversight and supervision; ii) oversight of project completion; and iii) oversight of project reporting.

⁸³ Refer to Annex 2.D Section 6.1.1 for details on possible service providers

⁸⁴ As the EE, the EPA will approve the management structure, which will be incorporated into the constitution of the CSC and the contractual agreements between the two relevant CSC members and the EPA.

⁸⁵ See Section 5.6.1 of Annex 2.D and Annex 8 for further information on gender sensitivity in the context of this activity.

⁸⁶ The income from the cold storage facilities will come from charging those who use the units a small fee. The income is estimated at 1,500\$/month (10\$/month x 150 users).



Executing Entity

112. The national Executing Entity (EE) for this project is the Government of Liberia represented by the Environmental Protection Agency (EPA)⁸⁷. The EE is accountable to UNDP for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. The Ministry of Mines and Energy (MME), as a Responsible Party will enter into a legally binding Memorandum of Understanding (MoU) with the EE to assist in successfully implementing project activities and are directly accountable to the EPA as outlined in the terms of their agreement. Specifically, the Ministry of Mines and Energy will be responsible for Activities: 1.1 Prepare construction plans and finalise technical design specifications for coastal defence structure at West Point; 1.2 Construct coastal defence structure to protect West Point against climate change-induced coastal erosion; 2.1 Develop an Integrated Coastal Zone Management Plan for Liberia; 2.2 Capacitate the Cross-Sectoral Working Group to mainstream ICZM into relevant government sectors through a Training-of-Trainers approach; and 2.3 Strengthen the asset base and technical capacity of the ICZMU for the collection of spatial and biophysical coastal information to support the implementation of the ICZMP (Table 2). The EE will delegate to the MME as a Responsible Party — government entities with the technical competence in their respective areas — to ensure that the activity is implemented according to national requirements. A Memorandum of Understanding (MoU) will be established between the EE and the MME outlining their respective responsibilities under Activity 1.2. The funds for selected activities, as requested by the GoL, including Activity 1.2 (due to their higher value and high risk nature) will be channeled directly to service providers by UNDP as part of UNDP support services to GoL. Any other funding requests will be channeled through the EPA. The Ministry of Public Works (MPW) will assist the EE and the MME to implement Activity 1.2 and will be represented on the Project Steering Committee and Technical Sub-Committee. No funds will be channeled through the MME. Similarly, the Ministry of Gender, Children and Social Protection (MoGCSP) will be included on the Project Board to support gender sensitivity and oversight during the project implementation period.

113. The Project Board/Steering Committee will be chaired by the Director of the EPA and will be comprised of representatives from the EPA, MFDP, UNDP and MGSP, including at least 30% women. The World Bank and the African Development Bank will also be invited as members of the Steering Committee in order to realize synergies with their similar investments in the country, particularly the AFDB GCF-funded project. The Project Board is responsible for making, by consensus, management decisions when guidance is required by the Project Manager. Project Board decisions will be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency and effective international competition. In cases where a consensus cannot be reached by the Project Board, the final decision shall rest with the UNDP Resident Representative. The Project Board will meet according to established practices.

114. The Project Management Unit (PMU) will implement the project with support from the EPA and UNDP and will report to the Project Board. The Project Manager will be appointed to lead the PMU which will run the project on a day-to-day basis on behalf of the EPA within the constraints laid down by the Project Board. The Project Manager function will end when the final project terminal evaluation report and other project closure activities and documentation required by the GCF and UNDP have been completed and submitted to UNDP. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. Implementation of the project will be further supported by a technical sub-committee constituted of institutional, community and civil society representatives. The members of this committee will be called on to provide input for relevant project activities. The project management arrangements are summarised in the diagram below (Figure 14).

Funds Flow: Donor funding, including the GCF funding, will be received by the administrative agent (UNDP) on behalf of the Executing Entity (GoL represented by the EPA) based on a standard letter of agreement (LOA) signed between the donors and UNDP and an MOU between UNDP and the Executing Entity separately. As per UNDP's National Implementation policy (NIP), the Project Management Unit's (PMU) capacity assessment, determined that funding may be advanced to entities for lower risk activities. UNDP will support the handling and channelling of funds for higher value activities that exceed a budget threshold of US\$250,000 (for example, Activity 1.2) as a support service

⁸⁷ The Environmental Protection Agency of Liberia (EPA) is a semi-autonomous body under the legal personality of the Government of Liberia (GoL). The EE for all activities under this project is the GoL represented by EPA.



provisioned for in the LOA. For these higher value activities, a 'Direct Payments' option will be utilised where UNDP needs to ensure value for money and minimise any risks associated with exceeding the capacity of government agencies to manage procurement and deliver activities timeously. Through this option, transfers will be made directly from UNDP to the goods and service providers upon the request of the EE, and to the PMU for its day-to-day running functions. The Direct Payments modality ensures: i) that the request has come from an authorised official; ii) verification that the requested payment is in accordance with the project workplan; and iii) verification that payment is made to the designated party. For activities where a Direct Payments modality is being used, GCF Proceeds and the Accredited Entity's Co-financing will not flow through the Executing Entity. Instead UNDP (as administrative agent of the Executing Entity) will channel such funding via a Direct Payments option whereby transfer will be made directly to goods and services providers hired by the Accredited Entity and upon request of the Executing Entity. On the other hand, the Co-financing from the Government of the Host Country will flow to the EPA as budget allocations and used directly by such ministry to pay procured parties and/or transfer such funds to the relevant Responsible Party. For lower risk activities, funds will be advanced to the Executing Entity by UNDP and the Executing Entity will procure and transfer funders to the goods and service providers hired to implement those activities.

Project Organisation Structure



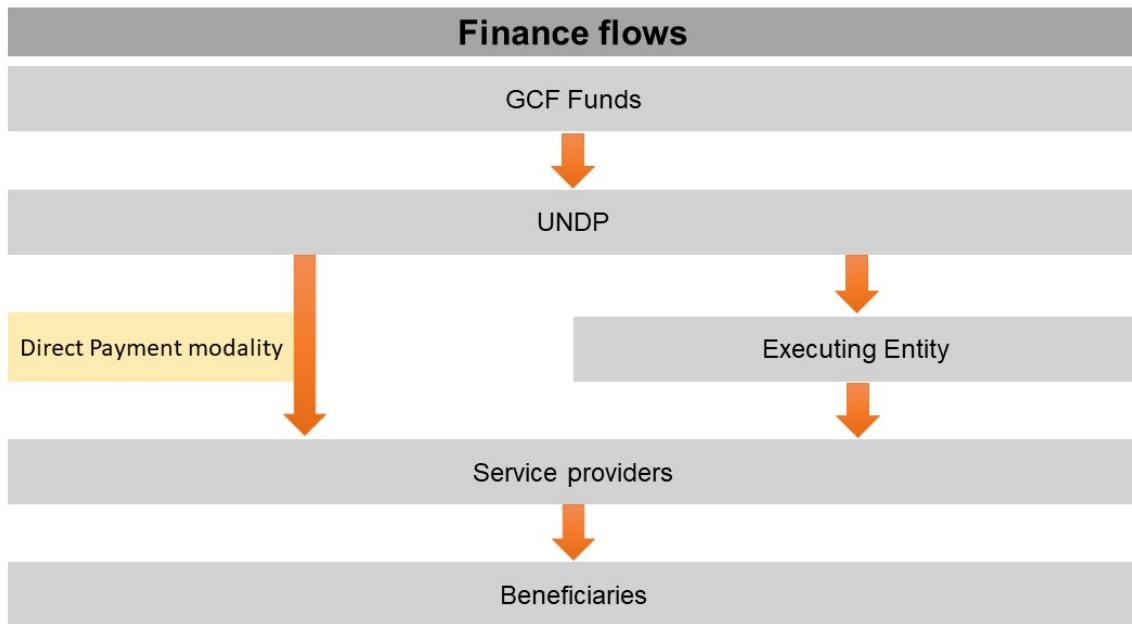


Figure 14. Institutional arrangements and financial flows.

Experience and track record of the Accredited Entity: UNDP

115. In Liberia, UNDP has led environmental protection and climate change responses through the facilitation of policy formulation, strategic planning, law making, coordination and information sharing. Through this role, UNDP has built strong relationships with decision-makers and proven its strengths as an impartial provider of technical advice and support. With its central role in the UN system, UNDP facilitates a multi-sectoral approach to assist the GoL to respond to complex issues such as climate change and green growth and is recognized as an experienced agency in institutional development and capacity building, bringing a long-term institutional and people-centred focus to capacity development.

116. As a multilateral organisation, UNDP can promote the dissemination of international norms and standards, bring technical assistance, experience and good practices to bear in Liberia. UNDP has demonstrated its long-term commitment to the provision of technical assistance to affect and sustain the institutional changes required in realising tangible improvements in institutional capacity. Over the last five years UNDP has implemented a coastal adaptation project, a climate change adaptation project in the agricultural sector, an early warning system project and an extractive industry sustainable development project.

Experience and track record of the Executing Entity: Government of Liberia represented by the Environmental Protection Agency (EPA)

117. Under the National Environmental Policy of Liberia (2003), the GoL set up the Environmental Protection Agency (EPA) as an independent authority for the management of the environment. The EPA is an autonomous body tasked with enforcing the National Environment Protection and Management Law under the Executive Branch of Government and is overseen by a nine-member board of directors from specific government agencies and the private sector. This board of directors is required to establish Technical Committees to advise the EPA on priority issues including climate change and marine and coastal ecosystems.

118. As the National Designated Authority (NDA) for Liberia, the EPA has been involved in the submission of several Concept Notes and Readiness Proposals for the GCF. These projects include: i) the Simplified Approval Process (SAP) Concept Note: *Resilient and Low Carbon Tree Crop Extension Project II*; and ii) *Liberia Adaptation Readiness Proposal*. Similarly, the EPA has a strong track-record of implementing climate adaptation projects for



the Global Environment Facility (GEF). Between 2008 and 2018, the EPA implemented 12 GEF-funded projects with a focus on climate change adaptation in Liberia. The most recent of these projects are:

- *Building and Strengthening Liberia's National Capacity to Implement the Transparency Elements of the Paris Climate Agreement, 2018* (GEF-ID 9923);
- *Conservation and Sustainable use of Liberia's Coastal Natural Capital, 2017* (GEF-ID 9573); and
- *Improve Sustainability of Mangrove Forests and Coastal Mangrove Areas in Liberia through Protection, Planning and Livelihood Creation- as a Building Block Towards Liberia's Marine and Costal Protected Areas, 2016* (GEF-ID 5712).

Table 2. Responsible Party, Legal Agreement, Beneficiaries and Co-finance for each Activity.

Activity	Responsible party	Legal agreement	Beneficiaries	Co-finance
Activity 1.1. Prepare construction plans and finalise technical design specifications for coastal defence structure at West Point.	MME	MoU between EPA and MME Contract with service providers	West Point	UNDP
Activity 1.2. Construct coastal defence structure to protect West Point against climate change-induced coastal erosion.	MME	MoU between EPA and MME Contract with service providers	West Point	UNDP and GoL
Activity 2.1. Develop an Integrated Coastal Zone Management Plan for Liberia.	MME	MoU between EPA, and MME Contract with service providers	MMA	UNDP and GoL
Activity 2.2. Capacitate the Cross-Sectoral Working Group to mainstream ICZM into relevant government sectors through a Training-of-Trainers approach.	MME	MoU between EPA and MME Contract with service providers	MMA	UNDP and GoL
Activity 2.3. Strengthen the asset base and technical capacity of the ICZMU for the collection of spatial and biophysical coastal information to support the implementation of the ICZMP.	MME	MoU between EPA and MME Contract with service providers	MMA	No
Activity 2.4. Strengthen the existing Environmental Knowledge Management System (EKMS) to act as a platform for awareness-raising and sharing of climate risk-informed ICZM approach.	EPA	Contract with service providers	MMA	UNDP
Activity 2.5. Conduct an awareness-raising campaign for communities in focus areas on climate change impacts and adaptation practices.	EPA	Agreement between the Knowledge Sharing Groups and the CSC CSC Constitution and contractual agreements between the EPA and CSC members Contract with service providers	West Point, Jacob's Town, Fiamah and Topoe Villages	UNDP and GoL



Activity 3.1. Establish a community education and innovation centre to function as a community knowledge generation and learning hub, repository on climate change adaptation practices and to host community activities under Output 3.	EPA	CSC Constitution and contractual agreements between the EPA and CSC members MoU between the owners of the center and EPA Contract with service providers	West Point, Jacob's Town, Fiamah and Topoe Villages	UNDP and GoL	
Activity 3.2. Establish community-led co-management agreement to ease anthropogenic pressure on mangroves in the MMA.	EPA	Co-management agreement between target communities and EPA Contract with service providers	West Point, Jacob's Town, Fiamah and Topoe Villages	No	
Activity 3.3. Conduct annual assessments to evaluate the project-induced changes in mangrove degradation, community perceptions and awareness of climate change impacts, adaptation options and mangrove ecosystems throughout the project implementation period.	EPA	Contract with service providers	West Point, Jacob's Town, Fiamah and Topoe Villages	UNDP and GoL	
Activity 3.4. Establish small-scale manufacturing facilities and develop training material to capacitate community members to manufacture and sell cookstoves to support alternative climate-resilient livelihoods.	EPA	Contract with service providers CSC Constitution and contractual agreements between the EPA and CSC members	West Point, Jacob's Town, Fiamah and Topoe Villages	UNDP	
Activity 3.5. Purchase and install low-maintenance eco-friendly cold storage facilities near fish processing sites to reduce pressure on mangroves and increase market efficiency.	EPA	Contract with service providers CSC Constitution and contractual agreements between the EPA and CSC members	West Point, Jacob's Town, Fiamah and Topoe Villages	UNDP	

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

119. GCF grants are critical for this proposed project given the limited economic resources of Liberia and its numerous development priorities. While some government funds have been made available as co-financing, the current economic situation and borrowing profile of the Government of Liberia (GoL) is limited. Liberia has been classified as a Least Developed Country (LDC) with a 2018 GDP per capita of USD 674 — significantly lower than the LDC average GDP per capita of USD 1,042⁸⁸. In addition, Liberia's Human Development Index (HDI) of 0.465 ranks the country 176th out of 189 countries assessed by the UNDP Human Development Report 2018. Economic and social gains made by Liberia in the post-civil war period from 2000–2010 were severely curtailed by the outbreak of the Ebola virus and subsequent epidemic between 2014 and 2015. The current COVID-19 pandemic poses a new threat to the Liberian economy. External demand for Liberian exports is expected to decrease and

⁸⁸ World Bank Data Portal. 2019. Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?cid=GPD_31&locations=LR-XL. Further information on the socio-economic context of Liberia is available in Annex 2.A: Feasibility Study, Section 1.



may disrupt investment in the export-oriented mining, agriculture, and forestry sectors⁸⁹. A recent study by IMF⁹⁰ observed that macroeconomic stability in Liberia was already elusive with a faltering GDP growth and a spike in inflation when the pandemic emerged. The International Monetary Fund had cut down Liberia's 2019 growth outlook with the exchange rate depreciating by 26% over the year, and inflation accelerating to 28% at end-December. Growth in GDP for 2018 was 1.2%, while the projection for 2019 is a 1.4% contraction in the economy. Liberia also does not have an established borrowing programme of its own and its primary financing⁹¹ includes concessional capital from IMF, WB, AfDB and other bilateral agencies. Due to these economic risks that persist and the IMF's cautionary stance on economic growth and inflation, Liberia is not currently able to raise any external financing in the form of concessional loans to replace GCF's grant for this proposed project. In addition, due to the public good nature of the benefits derived from the project, the serviceability of any such loans is uncertain. Without intervention, the estimated cost of accelerated coastal erosion at West Point alone is USD 47 million.

120. This project's proposed structure includes three outputs and twelve activities⁹². However, none of the activities or outputs clearly result in direct and quantifiable earnings or direct and quantifiable savings to the project owners or the project beneficiaries in a predictable time period. All the activities and outputs of this proposed project result only in non-attributable savings that are public goods and will benefit vulnerable communities in Liberia. Hence, a financial modelling-based analysis has not been conducted and a Financial Internal Rate of Return (FIRR) has not been calculated for any of these activities.

121. However, considering the GCF's minimum concession policy, this project's proposed activities have been analysed from a macro-economic and government perspective to assess the need for GCF grant as the only feasible financial instrument to fund the project activities. Hence, taking into consideration the factors such as the: i) climate-resilient sustainable development benefits arising out of the project; ii) identified climate change impacts; iii) fragile economic nature of the target population and Liberia's challenging economic situation; iv) persistent inflationary risks; v) lack of borrowing programmes; and vi) catalytic nature of the GCF grants, we recommend the following –

- The nature of the benefits does not accommodate repayment of capital in whatever form or serviceability of a loan instrument.
- The vulnerability of beneficiaries and the level of essentiality of the service do not accommodate repayment of capital in whatever form or serviceability of a loan instrument.
- There is co-financing from GoL and there is no incremental ability to stretch their contributions owing to budgetary and fiscal consolidation reasons.
- Hence, it is recommended that in order to reduce / close the existing financing and knowledge gaps and barriers to improve resilience of Liberia's population to climate change-induced hazards, GCF grants are essential. GCF's approach to financing only the incremental costs of adaptation have been given full consideration during the development of this proposal. Under Output 1, GCF will be financing only the construction phase of the protective infrastructure at West Point, with additional on-the-ground preparatory work⁹³ receiving co-finance directly from UNDP. Under Output 2, the bulk of GCF funding will be directed towards awareness raising on climate change adaptation as well as the development of an ICZMP, technology transfer and technical support

⁸⁹ World Bank. 2020. The COVID-19 Crisis in Liberia: Projected Impact and Policy Options for a Robust Recovery. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/34271/Liberia-Economic-Update-The-COVID-19-Crisis-in-Liberia-Projected-Impact-and-Policy-Options-for-a-Robust-Recovery.pdf?sequence=4&isAllowed=y>

⁹⁰ International Monetary Fund, 2019 - <https://www.imf.org/en/News/Articles/2019/03/08/pr1971-imf-staff-completes-2019-article-iv-mission-to-liberia>

⁹¹ International Monetary Fund Staff Report, 2018 - <https://www.imf.org/external/pubs/ft/dsa/pdf/2018/dsacr18172.pdf>

⁹² Hard infrastructure as well as EbA measures were considered in the suite of possible interventions for coastal protection along the coastline of the MMA: i) Chapter 6 of the Vulnerability Sub-assessment (Annex 2.B) provides an overview of all the potential options considered; ii) Section 6.1 provides an overview of the objectives and requirements for protection and 6.2 provides overview of ICZM strategies; iii) Section 6.3.3 (page 101) provides an overview of the feasibility of all the protection options that have been considered including below will be incorporated into the revised FS and appropriately referred to in the FP: i) Chapter 6 of the Vulnerability Sub-assessment (Annex 2.B) provides an overview of all the potential options considered; ii) Section 6.1 provides an overview of the objectives and requirements for protection and 6.2 provides overview of ICZM strategies; iii) Section 6.3.3 (page 101) provides an overview of the feasibility of all the protection options that have been considered including NBS (Sections 8.J, 8.K and 8.L provide a complete list of options); iv) Chapter 7 provides a description of which options are proposed and why; v) Section 7.4 (page 118 to 121) gives a full description of the alternative options that are considered for West Point and which options are favoured as well as the respective advantages and disadvantages of each approach.

⁹³ Preparatory work to be financed by UNDP includes the development of a specific and focused ESIA and associated ESMP in accordance with Liberia law.



to capacitate the GoL to implement a proactive, climate-sensitive approach to coastal zone management. Additional activities under Output 2 — which represent a composite of adaptation and development interventions — will be co-financed by UNDP and GoL. Similarly, under Output 3, GCF funds will only be used for awareness raising on adaptation strategies and the provision of technical oversight, with the remainder of Output 3 — which focuses on conserving resources, supporting the development of climate-resilient livelihoods and strengthening food security — exclusively funded by a combination of UNDP and GoL co-finance.

122. The GCF's approach to financing only the incremental costs of adaptation have been given full consideration during the development of this proposal. Under Output 1, GCF will be financing only the construction phase of the protective infrastructure at West Point, with additional on-the-ground preparatory work⁹⁴ receiving co-finance directly from UNDP. Under Output 2, the bulk of GCF funding will be directed towards awareness raising on climate change adaptation as well as the development of an ICZMP, technology transfer and technical support to capacitate the GoL to implement a proactive, climate-sensitive approach to coastal zone management. Additional activities under Output 2 — which represent a composite of adaptation and development interventions — will be co-financed by UNDP and GoL. Similarly, under Output 3, GCF funds will only be used for awareness raising on adaptation strategies and the provision of technical oversight, with the remainder of Output 3 — which focuses on conserving resources, supporting the development of climate-resilient livelihoods and strengthening food security — exclusively funded by a combination of UNDP and GoL co-finance.
123. GCF is being requested to finance the cost of the construction of protective infrastructure at West Point under Output 1, as climate change is clearly contributing to increased rates of coastal erosion⁹⁵. As evidence of its commitment to coastal adaptation and protection, the Government of Liberia (GoL) will contribute rock material⁹⁶ for the construction of the revetment as in-kind co-finance. The request for GCF support is being made to address the limited technical capacity of the GoL to design and implement an intervention of this type while considering the latest climate information and models. Additionally, as indicated in this section, the GoL has extremely limited financial resources and numerous urgent development priorities. GCF financing of this intervention will, however, contribute significantly to the knowledge base in Liberia on developing climate-resilient infrastructure and facilitate the strengthening of partnerships which will support the expansion of robust coastal protection and ICZM elsewhere along Liberia's vulnerable coastline, thereby creating an enabling environment for future country-led initiatives of a similar nature.
124. Financial support from GCF with maximum concessionality is consequently required to capacitate the GoL to protect vulnerable coastal communities against accelerated climate change-induced coastal erosion and safeguard livelihoods that are reliant on climate-sensitive mangrove ecosystems. In the absence of GCF involvement, the coastal community in West Point and across the MMA will become increasingly exposed to the impacts of accelerated coastal erosion, SLR and reduced provision of mangrove ecosystem services that support local livelihoods.

B.6. Exit strategy and sustainability (max. 500 words, approximately 1 page)

125. The proposed project has been designed with specific focus on an effective exit strategy that will ensure the long-term sustainability of the project interventions and their associated benefits. The specific elements of the exit strategy are presented below.

Post-project operations and maintenance

126. Project interventions have been designed to incorporate sustainability considerations from the outset, with minimal to no maintenance required beyond the project period. Through stakeholder consultations, the burden of operations and maintenance was identified as a risk to the sustainability of potential coastal protection interventions⁹⁷. The rock revetment (Activity 1.2), for example, was therefore selected and designed to have low maintenance requirements once installed (detailed in Annex 2.C: Engineering Sub-assessment). For what

⁹⁴ Preparatory work to be financed by UNDP includes the development of a specific and focused ESIA and associated ESMP in accordance with Liberia law.

⁹⁵ Refer to Figure 4 in section B.1 which shows average coastal retreat between 2000 and 2100.

⁹⁶ A joint mission was undertaken by GoL (Ministry of Mines and Energy, EPA) and UNDP, to assess availability of rock at a quarry site originally used by GoL to source rocks for past GoL projects.

⁹⁷ Details of these stakeholder consultations are given in Chapter 6 of Annex 2.B: Vulnerability Sub-assessment and pg. 63 of Annex 6: ESAR.



maintenance is required, the Ministry of Mines and Energy (MME) has committed to financing and undertaking O&M after project completion⁹⁸. The required financial commitments for maintenance of protective infrastructure beyond the project period are outlined in Annex 21: Operations and Maintenance (O&M) Plan. To further increase the sustainability of the intervention, community leaders, construction workers and fisherfolk from West Point will be trained on techniques for monitoring the revetment by the service provider responsible for its construction. A dedicated communication channel between the community and MME to report on revetment maintenance requirements will be established during project implementation. MME will oversee the monitoring of the revetment and perform regular technical inspections (as detailed in the O&M Plan), using the information provided by the community and from these inspections to determine and meet all maintenance requirements. Workers from the West Point area engaged in the construction of the revetment will be trained by the construction firm on the technical skills needed to perform revetment maintenance, to ensure that local labour with the required training is available to MME when they need to perform maintenance activities. Overseen by the MME, the CSC will be responsible for the routine upkeep of the education and innovation centre, and will have access to small amounts of funds for this purpose through the income generated for the centre under Activity 3.4. During the collaboration workshop for government representatives, CSC members and NGOs under Sub-activity 3.1.4, the specific roles and responsibilities of the CSC members in terms of maintaining the education and innovation centre will be allocated among the CSC members. Maintenance for the education and innovation centre is expected to be low-cost as facilities are planned to be basic and durable. The MME will provide support for additional maintenance needs in cases where these costs go beyond the capability of the community, including the replacement of the roofing and window fittings. Similarly, any maintenance required for the cold storage facilities (Activity 3.5) will be funded through the nominal fee paid by community members who use the facilities and managed by the CSC, overseen by the MME. This will ensure the sustainability of the facilities and enable communities to hold the CSC accountable for their maintenance. Public sector investments into O&M will build ownership by relevant stakeholders, maximising the likelihood of effective, sustained maintenance beyond the project's implementation period. Co-management arrangements between relevant stakeholders, will also ensure cooperation and sustainable management of project interventions in the long term.

Integrated Coastal Zone Management (ICZM) approach

127. The sustainability of project interventions will be underpinned by the introduction of an integrated approach to coastal zone management in Liberia that emphasises capacity-building, cross-sectoral coordination and ongoing learning. The development of a vulnerability map and an ICZMP will form the basis of the ICZM approach in Monrovia and across Liberia. This process will be informed by active engagement with local stakeholders — including private sector partners and local communities in the coastal zone, with a focus on women — to ensure relevance to the local context. Training on the implementation of the ICZMP will also be operationalised through a Trainer-of-Trainers approach that will ensure that the skills are retained within relevant institutions and can be shared both nationally and regionally, facilitating the upscaling of ICZM and the sharing of knowledge. The use of a Training-of-Trainers approach in capacity-building activities will also foster buy-in from stakeholders and facilitate continued use of project tools, plans and policies beyond the project's lifespan. By bringing together government institutions across sectors, the project will facilitate the harmonisation of policies (Sub-activity 2.2.2) and planning relating to infrastructure, ecosystems and communities, creating an enabling environment for integrated adaptation and further investment in coastal adaptation. In particular, the harmonisation of policies and improved cooperation across government institutions will enable these institutions to: i) collaborate more effectively to leverage government finance for coastal adaptation; and ii) engage more systematically with the private sector and development partners to leverage additional investments. In addition, updating the ICZMP during the project period to reflect lessons learned from its initial implementation and from the implementation of the mangrove co-management agreements under Activity 3.2 will ensure that ICZM is implemented adaptively and grounded in the experiences of local communities.

128. The ICZM Committee and CSWG will be well-established before the end of the project period and will continue to function in a decentralised manner after the period of project implementation. Similarly, recommendations will be made during development of the ICZMP for: i) the assignment of departmental budget allocations for continued funding of ICZM activities outlined in the plan; and ii) the inclusion of ICZM into the job descriptions of relevant

⁹⁸ The revetment has been designed to have a lifespan of 30–50 years and is only expected to require maintenance if it is damaged by extreme events. The O&M costs are estimated between 0% and 0.5% per year for the rock works. Further information on the O&M requirements and plan are provided in Annex 21.



officials across government institutions. Moreover, strategies for financing coastal climate change adaptation initiatives will be identified by the CSWG, their success monitored over the course of the project and updated to inform the ICZMP. This government buy-in to the ICZM approach will ensure its sustainability beyond the project's lifespan. Additionally, the establishment of a wave buoy-based coastal data processing system and upscaling the existing EKMS will strengthen the information base underpinning the effective implementation of ICZM and will ensure that lessons learned on ICZM are actively collected, collated and disseminated to relevant stakeholders in accessible formats. The continued use of these tools will facilitate the ongoing application of the innovative approach to coastal zone management in Liberia beyond project completion.

Participatory approach to managing ecosystems

129. To ensure the sustainability of ecosystem management activities, the development of community-led co-management agreements for mangrove ecosystems will be undertaken with the close involvement of communities bordering the Mesurado Wetland. Their needs and concerns will be carefully considered, facilitating community buy-in and ownership of the agreements. The agreements and incentives for mangrove co-management will be underpinned by: i) the existing land-use management framework; ii) the strengthened institutional and regulatory systems for ICZM developed under Output 2; and iii) activities within the project that will increase awareness of the importance of mangrove ecosystems and how to sustainably manage them (Activities 2.5 and 3.2) and provide opportunities for the adoption of alternative livelihood practices (Activities 3.4 and 3.5). Lessons learned from the implementation of the mangrove co-management agreements will be incorporated into the revision of the ICZMP. Embedding participatory ecosystem management within the broader institutional framework will ensure ongoing support for mangrove conservation and management beyond the project period through the established institutional and regulatory systems. Conversely, incorporating lessons from community-based implementation of ICZM into the planning framework will increase the effectiveness and applicability of the ICZMP going forward. Similarly, the establishment of a Community Stewardship Committees (CSC) will promote community involvement and engagement in ecosystem management. Attention will be paid to the local context within which this committee will operate, in the interests of ensuring that the committee is self-sustaining. beyond the project lifespan Increased knowledge resulting from this involvement in the project will catalyse a shift in the way communities perceive and value mangroves, highlighting the link between mangrove conservation and health, livelihoods and food security. This will encourage continued participation and ongoing commitment to the safeguarding of these ecosystems. In addition, the small income streams developed through the cold storage facilities (Activity 3.5) and eco-friendly livelihood products (Activity 3.4) will enable the community facilities and the CSC to operate beyond the project lifespan.

Climate-resilient, gender-responsive and sustainable community livelihoods

130. A fully participatory approach will be used in the design of activities to build Monrovian communities' resilience to climate change and to generate gender-responsive, sustainable livelihoods. In particular, the long-term benefits of sustainable livelihoods will be promoted as an alternative to timber extraction from mangroves. This will have a sustained impact, as communities are likely to continue to use practices that are beneficial to them after project implementation.

131. Project activities are predominantly targeted at Monrovia's coastal fishing communities, approximately 60% of which are comprised of women. The long-term benefits of project activities will therefore inherently contribute to sustained gender equality. In addition, all committees established during project implementation will prioritise the inclusion of women, ensuring that future decision-making incorporates the interests of all genders. This will contribute to a shift in gender relations, which will additionally reduce inherent gender-based vulnerability in future. It is also anticipated that, because of women's roles as primary caregivers, there will be externalities on future generations that will contribute to the sustainability of project interventions.

Scaling up and continuation of best practice

132. All project activities have been designed to incorporate sustainability considerations from the outset, including the potential for scaling up and continuation of best practice. Information generated through the development of the high-resolution vulnerability map — as well as best practice and lessons learned through the implementation of the ICZMP in Monrovia — will be shared widely and used to scale up project interventions across all coastal counties in Liberia. During the implementation period, collaboration between development partners — which have been initiated during project development — will be consolidated, including between UNDP, CI, the World Bank and JICA. These partnerships and experience will provide a robust platform for the implementation of other projects



in the coastal zone. Extensive engagement with the private sector during the development and implementation of the ICZMP will strengthen public-private partnerships for coastal management, increasing support for future coastal protection and adaptation initiatives. The design of these activities will, in conjunction with the training-of-trainers approach used, ensure that their implementation will continue successfully post project implementation. In addition, activities promoting uptake of climate-resilient livelihood activities — including the manufacturing of energy-efficient cookstoves and demonstrations on the benefits of improved community fish smoking systems — will focus on facilitating the development of small businesses, to enable the upscaling and replication of these alternative livelihood activities beyond the project implementation period and geographical scope. This will be done by: i) facilitating relationship building between potential community entrepreneurs and value chain actors; ii) providing training on business management skills; iii) supporting access to finance for initial investments in business start-ups; iv) supporting market analysis through the livelihood assessment under Activity 3.3 and marketing through the awareness-raising campaigns under Activities 2.5 and 3.2; and v) using the education and innovation as a platform for testing new technologies and innovations in the local community.



C. INFORMATION							
C.1. Total financing							
(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)		Total amount FINANCING		Currency			
		17,255,755		USD (\$)			
GCF financial instrument		Amount	Tenor	Grace period	Pricing		
(i)	Senior loans	Enter amount	Enter years	Enter years	Enter %		
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %		
(iii)	Equity	Enter amount			Enter % equity return		
(iv)	Guarantees	Enter amount	Enter years				
(v)	Reimbursable grants	Enter amount					
(vi)	Grants	17,255,755					
(vii)	Result-based payments	Enter amount					
(b) Co-financing information		Total amount		Currency			
		8,383,150		USD (\$)			
Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority	
UNDP	Grant	1,577,750	USD (\$)	Enter years Enter years	Enter%	Options	
Government of Liberia	Grant	2,540,000	USD (\$)	Enter years Enter years	Enter%	Options	
Government of Liberia	In kind	4,265,400	Options	Enter years Enter years	Enter%	Options	
Click here to enter text.	Options	Enter amount	Options	Enter years Enter years	Enter%	Options	
(c) Total financing (c) = (a)+(b)		Amount		Currency			
		25,638,905		million USD (\$)			
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)		Please explain if any of the financing parties including the AE would benefit from any type of guarantee (e.g. sovereign guarantee, MIGA guarantee).					
		Please also explain other contributions such as in-kind contributions including tax exemptions and contributions of assets.					
		Please also include parallel financing associated with this project or programme.					
C.2. Financing by component							
Output	Activity	Indicative cost USD (\$)	GCF financing		Co-financing		
			Amount USD (\$)	Financial Instrument	Amount USD (\$)	Financial Instrument	Name of Institutions
Output 1. Protection of coastal communities and infrastructure at West Point against erosion caused by sea-level rise	Activity 1.1: Prepare construction plan and finalise technical design specifications for coastal defence structure at West Point.	705,712	333,012	Grants	372,700	Grants	UNDP
	Activity 1.2: Construct coastal defence structure to protect West Point against climate	17,442,309	13,169,909	Grants	7,000 4,265,400	Grants In-kind	UNDP GoL



and increasingly frequent high-intensity storms.	change-induced coastal erosion.						
Output 2: Institutional capacity building and policy support for the implementation of Integrated Coastal Zone Management (ICZM) across Liberia	Activity 2.1: Develop an Integrated Coastal Zone Management Plan for Liberia.	2,426,014	912,014	Grants	1,508,500 5,500	Grants Grants	GoL UNDP
	Activity 2.2: Capacitiate the Cross-Sectoral Working Group to mainstream ICZM into relevant government sectors through a Training-of-Trainers approach.	322,460	128,360	Grants	181,100 13,000	Grants Grants	GoL UNDP
	Activity 2.3: Strengthen the asset base and technical capacity of the ICZMU for the collection of spatial and biophysical coastal information to support the implementation of the ICZMP.	383,250	383,250	Grants	-	-	
	Activity 2.4: Strengthen the existing Environmental Knowledge Management System (EKMS) to act as a platform for awareness-raising and sharing of climate risk-informed ICZM approach.	186,500	40,250	Grants	146,250	Grants	UNDP
	Activity 2.5: Conduct an awareness-raising campaign for communities in focus areas on climate change impacts and adaptation practices.	787,400	185,000	Grants	320,400 282,000	Grants Grants	GoL UNDP
Output 3. Protecting mangroves and strengthening gender and climate-sensitive livelihoods to build local climate resilience in Monrovia	Activity 3.1: Establish a community education and innovation centre to function as a community knowledge generation and learning hub, a repository on climate change adaptation practices and host community activities under Output 3.	689,982	323,482	Grants	330,000 36,500	Grants Grants	GoL UNDP
	Activity 3.2: Establish community-led	185,750	185,750	Grants	-	-	



	co-management agreement to ease anthropogenic pressure on mangroves in the MMA.						
	Activity 3.3: Conduct annual assessments to evaluate the project-induced changes in mangrove degradation, community perceptions and awareness of climate change impacts, adaptation options and mangrove ecosystems throughout the project implementation period.	1,010,000	780,000	Grants	200,000 30,000	Grants Grants	GoL UNDP
	Activity 3.4: Establish small-scale manufacturing facilities and develop training material to capacitate community members to manufacture and sell cookstoves to support alternative climate-resilient livelihoods.	134,550			134,550	Grants	UNDP
	Activity 3.5: Purchase and install low-maintenance eco-friendly cold storage facilities near fish processing sites to reduce pressure on mangroves and increase market efficiency	148,250	-	Grants	148,250	Grants	UNDP
Project Management Cost		1,216,728	814,728	Grants	402,000	Grants	UNDP
Indicative total cost USD (\$)		25,638,905	17,255,755		8,383,150		

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities? Yes No

C.3.2. Does GCF funding finance technology development/transfer? Yes No

133. One of the major barriers to increasing the uptake of climate-resilient planning for coastal zones in Liberia is limited technical capacity to implement ICZM as well as a lack of access to real-time oceanographic monitoring systems. GCF financing will be used to address this barrier by developing an ICZMP (Activity 2.1) and capacitating relevant technical staff across 10 government institutions to implement ICZM (Activity 2.2). To further support the GoL to implement ICZM across the country and better understand climate change impacts in real-time, an integrated real-time oceanographic monitoring system will be procured under the project (Activity 2.3), and relevant institutional representatives will be capacitated to use the system. The benefits of transferring technology of this type into the Liberian context are numerous as the system will: i) increase the capability of the GoL to implement the ICZMP; ii) provide real-time data on ocean conditions, which will contribute to improved meteorology and EWS; and iii) provide



a means to measure and quantify climate-change impacts in the coastal zone, thereby supporting the country to develop a long-term data-set on the coastal impacts of climate change in Liberia.



D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's [Initial Investment Framework](#).

D.1. Impact potential (max. 500 words, approximately 1 page)

134. The proposed project will contribute to the achievement of the GCF's Paradigm Shift objective of increased climate-resilient sustainable development. This will be achieved by actively protecting infrastructure against climate change impacts, improving climate-responsive coastal planning, strengthening local livelihood practices and promoting the sustainable use of mangrove ecosystems to reduce the climate vulnerability of coastal communities in Monrovia. In so doing, the project will contribute to several indicative assessment factors in the GCF Performance Measurement Framework, including Fund-level Impacts:
- A1.0 Increased resilience of most vulnerable people, communities and regions; and
 - A3.0 Increased resilience of infrastructure and the built environment to climate change.

Project Outcomes

135. Activities under the project will contribute to the achievement of two GCF Fund-level Outcomes (as per the Performance Measurement Framework) that will be used to assess the contribution of this project to climate-resilient sustainable development, as detailed below.

- *A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development.* Training on mainstreaming climate adaptation and improved management of coastal systems delivered through the project (Activities 2.1 - 2.2) will enhance the technical capacity of the GoL to plan for and respond to the impacts of climate change. Specifically, a Cross-Sectoral Working Group CSWG) will be established and trained to facilitate this mainstreaming process. An ICZM approach will also be integrated into national institutional processes to facilitate climate-responsive planning.
- *A7.0 Strengthened adaptive capacity and reduced exposure to climate risks.* The coastal protection measures implemented through this project will reduce Monrovian communities' vulnerability to climate risks. Specifically, the risk of accelerated coastal erosion and associated damage to infrastructure and houses in the West Point community will be substantially reduced.

Adaptation impact

136. The project is expected to directly benefit 250,000 people⁹⁹ (49% women) in the target communities of: i) West Point (through coastal defence and enhanced livelihoods); ii) Topoe Village; iii) Plonkor and Fiamah; and iv) Nipay Town and Jacob's Town (through enhanced livelihoods and improved protection of mangrove ecosystems). It is also expected to indirectly benefit approximately 1 million¹⁰⁰ people in Monrovia (49% women). This will be achieved by: i) reducing the impacts of climate change-induced coastal erosion; ii) improving the resilience of climate-sensitive livelihoods; and iii) developing a national-scale ICZMP and improving the capacity for ICZM in Liberia.

137. Through the construction of coastal protection measures, approximately 1,050 m of coastline at West Point will be defended against coastal erosion (Output 1), preventing 150 m of shoreline retreat by 2050 and 360 m by 2100¹⁰¹ (RCP8.5). These interventions will directly benefit the coastal population of West Point (approximately 10,800 people, 49% women) whose homes, lives and livelihoods would otherwise be lost to coastal erosion. This will reduce damages to exposed and vulnerable infrastructure by USD 47 million¹⁰². The project will also improve the adaptive capacity of Monrovia's citizens who reside within and alongside the Mesurado Wetlands by strengthening the climate resilience of fishery-based livelihoods through the protection of mangrove ecosystems and supporting the uptake of diversified climate-resilient livelihoods (Output 3). When counted with the West Point beneficiaries described above, these interventions will directly benefit approximately 250,000 people living in the areas prioritised for interventions, many of whom are involved in fishing and fish processing¹⁰³. The entire population of Monrovia (approx. 1 million people, 49% women) will benefit indirectly from the project through the establishment of climate-responsive ICZM practices and related capacity development (Output 2) in the MMA.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

⁹⁹ See Annex 2.B (Vulnerability Sub-assessment), calculation based on number of houses counted using Open Street Map data

¹⁰⁰ Calculated based on 2008 census data, with a population growth rate based on national population growth from 2008–2018

¹⁰¹ See Annex 2.B (Vulnerability Sub-assessment)

¹⁰² Present value of predicted damages up to 2100, RCP8.5; see Annex 2.A: Feasibility Study, Section 3

¹⁰³ 46% of whom are women: see Annex 2.B (Vulnerability Sub-assessment)



138. The project will catalyse a paradigm shift in the approach to coastal management in Liberia, shifting from a focus on immediate needs and short-term planning to incorporating medium- and long-term climate change considerations into coastal and development planning. This shift will be realised through the construction of robust coastal defence measures protect one of Liberia's most vulnerable communities (Output 1), the development of a climate-responsive ICZMP and the establishment of cross-sectoral coordination mechanisms (Output 2), as well as novel approaches to address the impacts of climate change on livelihoods in the Monrovia Metropolitan Area (Output 3). The use of quantitative data and scientific information in the development of the technical sub-assessments for the proposed project will strengthen the case for adopting the ICZM approach in Liberia and the strengthening of data collection and management under the project (Activities 2.1, 2.3, 2.4, and 3.3) will improve the evidence-base to support future ICZM decision-making. The project itself will serve as a model for integrated investment in coastal adaptation, as it incorporates infrastructure-, planning-, ecosystem- and community-based approaches to addressing complex adaptation challenges in the coastal zone, informed by robust analyses. The proposed project has the further potential to leverage alternative sources of finance (such as the local private sector and other development partners) to support similar coastal protection infrastructure and broader adaptation initiatives, as it will create a robust enabling environment for investment in the coastal zone. This potential will be explored as part of the implementation of the ICZMP and development of a financing plan to leverage additional investment in coastal adaptation (Activities 2.1 and 2.2).

Potential for scaling up and replication

139. The three project outputs will contribute to replicable and scalable climate-resilient development pathways in Monrovia, and elsewhere in Liberia, including building on institutional capacity development under the Liberia NAP readiness process — where assessments are being conducted on the economic impacts of climate change on vulnerable people and sectors — and lessons learned from previously implemented GEF-funded coastal defence projects¹⁰⁴. Stabilisation of the shoreline at West Point under Output 1 lends itself to replication because other parts of Monrovia's coast (and indeed other coastal counties of Liberia) face similar risks in similar contexts. In particular, lessons learned (collected under Activity 2.4) and technical and project management capacity developed through the successful stabilisation of the shoreline at West Point will form the basis for replicating this process in other priority areas in Monrovia (assessed by the Feasibility Study) and elsewhere in Liberia. Similarly, under Output 2, the framework for implementing effective ICZM and coastal adaptation will be strengthened through: i) the development and revision after 3 years of a national ICZMP; ii) improved coordination and relationship-building between relevant government institutions (Activity 2.2); iii) harmonisation of policies and regulations across sectors to support coordinated ICZM; and iv) extensive (16-week) training of technical officials within the 10 government institutions involved in coastal zone management through a ToT approach. This strengthened framework and experience from the implementation of the ICZM in Monrovia will facilitate the expansion of this planning framework to the eight remaining coastal municipal areas in Liberia as well as the ongoing improvement of the national ICZM strategy, thereby realising the shift to including long-term climate change considerations into in coastal planning at municipal level across the country. Output 3, which focuses on strengthening livelihoods for vulnerable coastal communities in Monrovia will yield valuable lessons that can inform and be replicated through projects/interventions in similar contexts — i.e. vulnerable urban settlements and fishing communities — in Monrovia and across Liberia, as well as contributing a to stronger, more implementable ICZMP. This will include supporting community members to develop small businesses based on the construction of improved cookstoves, enabling the upscaling of more energy efficient cookstoves across Monrovia. The demonstration of an improved communal fish smoking system, at the education and innovation centre, will provide a further opportunity, along with the livelihood assessment (Activity 3.3.), for community members to test a new technology with potential to upscale that technology and realise substantial economic and environmental benefits in fishing communities. In the short-term, lessons learned from all three outputs will be used to inform the implementation of a GEF-funded coastal resilience project in Sinoe County¹⁰⁵. Like the proposed project, this project in Sinoe County includes improving coastal protection, strengthening cross-sectoral coordination and developing alternative, climate-resilient livelihoods.

Potential for knowledge management and learning

¹⁰⁴ Specifically, the GEF-funded Enhancing Resilience of Vulnerable Coastal Areas to Climate Change Risks in Liberia, which was originally implemented in the city of Buchanan and recently replicated in the vulnerable New Kru Town community in Monrovia.

¹⁰⁵ Further information on this project is provided in Section 6.1 of Annex 2A: Feasibility Study.



140. A number of activities under the project will contribute to knowledge management and learning. First, Activity 2.2 will contribute strongly to learning and knowledge management through the development of ICZM capacity and expertise. To this end, technical officials from 10 government institutions will be capacitated through a ToT approach to adopt and implement climate-responsive ICZM for sustainability of coastal settlements and growth under climate change conditions. Technical skills will be imparted to government officials, including but not limited to: i) the synthesis and analysis of beach profile data; ii) coastal protection feasibility assessments; and iii) maintenance of coastal protection infrastructure. Second, Activity 2.3 will establish a system for data collection, analysis and management relating to coastal dynamics and ecosystems. This will help to increase the evidence base to support ICZM decisions-making, Third, Activity 2.4 will contribute to the improved knowledge management by upscaling the existing Environmental Knowledge Management System (EKMS) established under a GEF-funded initiative. This will include facilitating greater access to the system across 10 government institutions and private sector partners, as well as incorporating information on climate change adaptation and ICZM, which will be particularly important in promoting the sharing of project lessons and knowledge. Based on the EKMS, targeted knowledge products will be developed and disseminated to government institutions and the private sector to maximise the benefit of the information gathered under the project. Effective knowledge management will ensure that long-term adaptation planning incorporates context-specific lessons learned and best practices and that knowledge is shared across sectors and between partners to strengthen coastal management. The involvement of research institutions in the knowledge management and learning process will also ensure that the project supports the development of a growing evidence base for ICZM. Fourth, the establishment of an education and innovation centre under Activity 3.1 will contribute to increased community knowledge on alternative climate-resilient livelihoods and adaptation practices, particularly for the manufacturing of eco-friendly, energy-efficient products. Similarly, members of the communities of West Point, New Kru Town, Hotel Africa and the Atlantic Seaboard will be engaged to inform the development of a co-management agreement for the sustainable use of mangroves under Activity 3.2. Fifth, the annual alternative livelihood assessment undertaken under Activity 3.3 will increase the knowledge base to support the development of climate-resilient livelihood opportunities. Using the education and innovation centre as a platform to share the information collected and test new technologies, the project will foster community innovation. Finally, the project will support sharing of lessons learned and best practice through continuous monitoring and evaluation under Activities 2.4, 2.5 and 3.3. The generation of lessons learned and best practice under these activities on an annual basis will not only support adaptive project management, but also inform learning and best practice across community, sub-national and national levels as well as regional initiatives such as WABICC.

Contribution to the creation of an enabling environment

141. The project will create an enabling environment for climate-resilient coastal planning, the sustainable management of mangrove ecosystems and the uptake of climate-resilient livelihoods beyond the project lifespan. Output 2 has been specifically designed to create enabling conditions for the integrated approach to coastal management and governance that are necessary to undertake long-term, climate-resilient planning in vulnerable coastal areas such as Monrovia. This enabling environment will be created by improving coordination and policy harmonisation among government institutions and building capacity for the implementation of ICZM. The introduction of ICZM as an iterative and cyclical management approach will ensure that institutional arrangements and strategies established by the project will endure beyond its duration. A focus on strengthening public-private partnerships for ICZM under the project will also contribute to enabling further private sector involvement and support for coastal adaptation in Liberia in future. Similarly, embedding the mangrove co-management activities under Activity 3.2 in the institutional and regulatory framework strengthened under Output 2 will create an enabling environment to systematically improve mangrove conservation efforts throughout and beyond the project implementation period. The involvement of community, government, private sector and NGO stakeholder in this process will ensure that feedbacks between top-down and bottom-up approaches strengthen both and that initiatives incorporate the expertise and experience of a broad range of stakeholders. This and other activities under Output 3 have been designed as iterative activities that result in the ongoing development of diversified and climate-resilient livelihoods, as well as contributing to the sustainable use of mangrove ecosystems.

Contribution to regulatory frameworks and policies

142. The project will make a strong contribution to the development of ICZM policy in Liberia and assist the country to meet its legislative requirement of developing an ICZMP and updating this plan every three years. This will be achieved through the development of two iterations of an ICZMP during the project lifespan. ICZM is by definition an integrative framework and will consequently: i) take existing legislation and policy into account both strategically



and operationally; ii) contribute new knowledge and best practice to the policy landscape in Monrovia, and Liberia; and iii) influence changes in plans and policies at a county and district level. The regulatory landscape in Liberia will be further strengthened by ICZM capacity development within all relevant government institutions and through the harmonisation of policies and regulations related to ICZM across government institutions.

Overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans

143. The proposed activities have been designed to remove specific barriers that impede the achievement of fund-level impacts and project outcomes as per the GCF Performance Measurement Framework (refer to Section D1). Project outputs lead to longer-term outcomes that include reduced vulnerability to future impacts of climate change, reduced loss from potential natural disasters, and enhanced livelihoods. The project will ultimately result in increased capacity of the GoL to undertake ICZM both locally, and at the national level. Through this capacity development process, climate change adaptation planning will be mainstreamed to increase resilience of coastal ecosystems and communities to climate change. Output 2, which will establish the ICZMP for Liberia, will be well-aligned with, and contribute to, the operationalisation of the GoL's key legislation, strategies and policies. Additionally, through Output 3, the project is in line with, and contributes to, the: i) Pro-poor Agenda for Prosperity and Development; ii) Republic of Liberia Agenda for Transformation: Steps Towards Liberia Rising 2030; and iii) Liberia Climate Change Policy, which all guide the country's efforts in both adaptation and mitigation. Furthermore, through instilling climate-resilient planning and protecting climate-sensitive livelihoods, the project will contribute to the achievement of the objectives of the Liberia National Adaptation Program of Action (NAPA) and the National Strategic Action Plan for Climate Change and Disaster Risk Management (NSAP).

D.3. Sustainable development (max. 500 words, approximately 1 page)

144. The proposed project will contribute to the achievement of seven Sustainable Development Goals (SDGs), namely: i) SDG 1 – No poverty; ii) SDG 2 – Zero Hunger; iii) SDG 3 – Good health and well-being; iv) SDG 11 – Sustainable cities and communities; v) SDG 13 – Climate action; vi) SDG 14 – Life below water. Apart from its contribution to the SDGs, the project will yield several environmental, economic, social, and gender co-benefits. These are described below.

Environmental co-benefits

145. The project will contribute to the protection of ecosystems and biodiversity in Monrovia through strengthening and promoting climate-resilient livelihoods (Outcome 3). This will yield the environmental co-benefits listed below:

- Reducing pressure on natural resources, including mangrove ecosystems, by promoting the manufacture and sale of energy-efficient livelihood products.
- Conserving Monrovia's mangrove ecosystems by engaging communities in an effective co-management system, thereby supporting the provision of ecosystem services including: i) stabilising sediments; ii) providing breeding habitats for a range of marine and terrestrial species; iii) improving and maintaining water quality; and iv) acting as carbon sinks.
- Reducing greenhouse gas emissions from burning fuels for cooking, by facilitating the production of energy-efficient cookstoves. The emissions reductions during the project are expected to be negligible¹⁰⁶. However, project activities will promote the upscaling of cookstove production beyond the project implementation period and geographical scope, which will lead to more substantial emission reductions.

Economic co-benefits

146. Through the coastal protection defence interventions implemented at West Point (Outcome 1), the project will reduce replacement costs of economic and social assets damaged by erosion and storm surges. In addition to this direct benefit, several economic co-benefits are expected through the implementation of ICZM (Outcome 2) and the promotion of climate-resilient livelihoods (Outcome 3). These co-benefits are described below:

- Reducing economic losses in key sectors on the coast of Monrovia and West Point in particular — including industry, transport and housing — will benefit the city through *inter alia* circumventing loss and replacement costs.

¹⁰⁶ Assuming equivalent emission reductions to the *African Improved Cooking Stoves Programme of Activities*, registered under the Clean Development Mechanism, the use of project-supported cookstoves will reduce GHG emissions by ~4,750 tCO₂e during the project implementation period.



- Improving management of mangroves in the Mesurado estuary will benefit the fishing sector as these ecosystems act as critical breeding habitats for economically important fish species. The economic value of mangroves to fisheries has been estimated at USD 12,800/ha/year on the Atlantic coast of Central Africa¹⁰⁷.
- Improving community co-management of mangroves will contribute to the sustainable use of these ecosystems for diversified livelihood activities.
- Generating short- and long-term work opportunities for the construction, operations and maintenance of coastal defence infrastructure established by the project, as well as through the Community Stewardship Committee (CSC), will benefit the population of Monrovia. The use of local communities for casual labour, with specific provisions for the employment of women, has been incorporated into the design of the project.
- Installing cold storage facilities in fishing communities will reduce spoilage of fish, thereby increasing the income/earning-potential of fishery-based livelihoods without increasing demand on fish stocks.
- Establishing facilities for the manufacture and sale of energy-efficient livelihood products will provide income-generation opportunities for community members.

Social co-benefits

147. The project will contribute to social development and cohesion by building the resilience of vulnerable coastal communities and their livelihoods to the impacts of climate change. This will yield multiple social co-benefits, including those described below:

- Enhancing coastal defence infrastructure (Outcome 1) will protect coastal communities, reduce mortality and reduce damage to the dense concentrations of economic assets and critical social infrastructure associated with coastal zones — including homes, schools, clinics and roads, as well as livelihood assets such as boats and fish processing equipment — from SLR and storm surges in the low-income area of West Point. The defence infrastructure will also protect hundreds of households from being displaced, thereby avoiding significant social disruption that would occur without the project.
- Improving the climate resilience of fishery-based livelihoods by working with communities to improve the management of mangrove ecosystems will contribute to the nutritional health, well-being, resilience and social cohesion of these communities.

Gender-sensitive development

148. The project will contribute to the implementation of both Liberia's Gender Policy (2009), which aims to reduce gender inequality, and the Climate Change Gender Action Plan for Liberia (2012), which promotes gender-responsive interventions to address climate change-related coastal erosion. This contribution will be achieved through the implementation of gender-sensitive activities, including: i) gender-responsive training for the management of mangroves; ii) assessing gender-specific climate vulnerabilities; iii) developing gender-specific adaptation options and alternative livelihood opportunities; and iv) increasing the resilience of Monrovia's fishing community which includes 9,000 fishmongers, most of whom are women.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

Vulnerability of the country and beneficiary groups

149. Liberia's population is extremely vulnerable to the impacts of climate change, ranking 4th in the 2017 Climate Change Vulnerability Index¹⁰⁸. This vulnerability is largely linked to the country's exposure to SLR and extreme weather events on its 560 km coastline. Increases in the frequency and intensity of extreme weather events are expected under future climate conditions, and the socio-economic impacts of such events, coupled with SLR and the resulting coastal retreat, are likely to be severe. The extent of these impacts is exacerbated by the high population density and associated concentrations of economic and social assets in the country's coastal zone as well as the dependence of this population on climate-sensitive livelihoods. Indeed, Liberia ranks 8th in the world for the percentage of the population living in low elevation coastal zones — mostly concentrated in the capital city of Monrovia. The target site for Output 1 — West Point — is located on a large sand spit on the western fringe of the Mesurado Wetland, making it one of the most vulnerable communities to SLR and extreme weather events in Liberia, with approximately 10,800 people — 49% women — projected to be directly at risk from coastal retreat by 2050¹⁰⁹.

¹⁰⁷ Ajonina GJ, Kairo G, Grimsditch G, Sembres T, Chuyong G, Mibog DE, Nyambane A and FitzGerald C. 2014. Carbon pools and multiple benefits of mangroves in Central Africa: Assessment for REDD+.

¹⁰⁸ Verisk Maplecroft. 2017. Climate Change Vulnerability Index.

¹⁰⁹ Annex 2.B: Vulnerability Sub-assessment (page 9)



150. The growth of Monrovia's population — at 3% per year — coupled with the ongoing shoreline loss, is leading to an increase in the density of the city's population, putting considerable pressure on the environment and ecosystems on which many livelihoods depend. The fisheries sector contributes approximately 10% of the national GDP and employs at least 37,000 people in Monrovia alone. The vulnerability of these livelihoods is being exacerbated by the impacts of SLR and the increasing frequency of intense storms. The low-income areas along the coast of Monrovia, including West Point, are home to the traditional artisanal fisherfolk of the Kru and Fanti communities who derive livelihoods from coastal waters and fish stocks. The mangroves in the Mesurado Wetland serve as critical habitat and nursery grounds for these fish stocks, strongly linking the livelihoods of fisherfolk to the health of mangrove ecosystems. In addition, these mangroves are an important source of fuelwood and other resources for the surrounding communities¹¹⁰. However, the loss of land and mangroves associated with SLR and extreme weather events is threatening the supply of these resources, including nutrient-rich fish which serve as the major protein source for much of the MMA's population. In turn, the decreasing supply of fish negatively affects: i) the food security of these communities; and ii) revenues from fisheries — especially for women, as 60% of persons active in the fishing sector are women¹¹¹.

151. The proposed project addresses these vulnerabilities by: i) building a coastal revetment on 1,050 m of coastline at West Point — ensuring landings for fishing boats (Output 1); ii) improving the management of Liberia's coastal zone by developing capacity for ICZM (Output 2); and iii) supporting the development of gender- climate-resilient livelihoods and improving the resilience of climate-sensitive livelihoods in Monrovia (Output 3).

Domestic finance, social and economic status quo

152. Since 1990, Liberia has been classified as a Least Developed Country (LDC) with a 2018 GDP per capita of USD 674 — significantly lower than the LDC average GDP per capita of USD 1,042¹¹². In addition, Liberia's Human Development Index (HDI) of 0.465 ranks the country 176th out of 189 countries assessed by the UNDP Human Development Report 2018. Economic and social gains made by Liberia in the post-civil war period from 2000–2010 were severely curtailed by the outbreak of the Ebola virus and subsequent epidemic between 2014 and 2015. The Department of Economic and Social Affairs of the United Nations Secretariat (UN/DESA) compiles a snapshot report of all LDCs every three years based on three composite indices¹¹³, namely the Economic Vulnerability Index (EVI, where lower is better), the Human Assets Index (HAI, where higher is better) and the Gross National Income (GNI, where higher is better). Figure 15 shows that in 2018, Liberia: i) was more economically vulnerable than the average of all LDCs in terms of the EVI; ii) had a GNI index equivalent to only 30% of the LDC average; and iii) had a lower HAI than the average figure for LDCs.

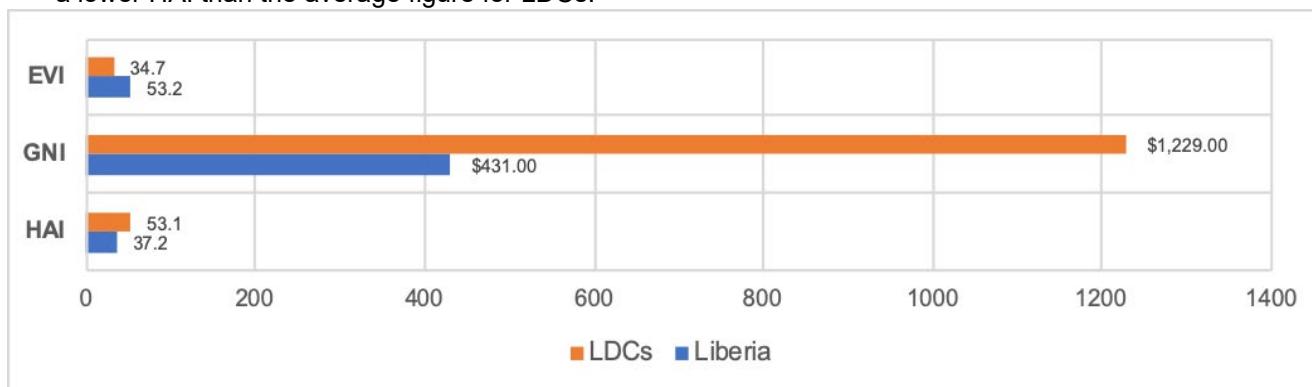


Figure 15. Comparison between Liberia and averages of all Least Developed Countries (LDCs) in 2018 in terms of the Economic Vulnerability Index (EVI), Human Assets Index (HAI) and Gross National Income (GNI) index¹¹⁴.

¹¹⁰ A detailed assessment of the role of these mangrove ecosystems in supporting livelihoods and the threats to the ecosystems is given in Annex 2D: Mangrove Sub-assessment, Section 3.

¹¹¹ Annex 2.B: Vulnerability Sub-assessment

¹¹² World Bank Data Portal. 2019. Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?cid=GPD_31&locations=LR-XL.

¹¹³ UN/DESA. 2018. The Least Developed Country Category: 2018 Country Snapshots. Available at: <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/Snapshots2018.pdf>.

¹¹⁴ UN/DESA. 2018. The Least Developed Country Category: 2018 Country Snapshots. Available at: <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/Snapshots2018.pdf>.



153. Liberia is disproportionately reliant on its primary production sectors for economic growth and development, with the agriculture, forestry and fishing sectors accounting for approximately 70% of GDP in 2018¹¹⁵. Reliance on the export of primary commodities — with little to no value-addition — results in the Liberian economy being extremely vulnerable to global commodity price fluctuations and market shocks. This economic vulnerability in turn compromises the ability of the GoL to deliver basic services such as water, housing, transport and energy to its citizens in a sustainable manner. The necessary emphasis by the GoL on basic development needs — including poverty reduction and health — means that funding climate change adaptation interventions to protect vulnerable communities is not considered as a priority, despite the urgent need for such interventions. Consequently, the GoL does not have the financial capacity to adequately fund adaptation initiatives at the scale required to significantly reduce climate change impacts on vulnerable communities.

Institutional capacity needs

154. To date, the GoL has established several laws, policies, strategies and institutions to address the increasing impact of climate change on the lives and livelihoods of people in Liberia (Section D.5). However, limited technical and financial capacity within most government departments is a significant barrier to the implementation of climate change adaptation, and ICZM in particular. The structural economic problems faced by the country — described above — as well as financial resources being directed towards the provision of social services, such as education and health, result in limited national sources of financing being available for adaptation interventions. In addition, limited understanding of the economic benefits of coastal adaptation interventions restricts the opportunities and entry points for private sector investment. Financial limitations constrain the implementation of adaptation interventions resulting in insufficient: i) work facilities; ii) access to technical equipment; iii) training to use and maintain technical equipment; and iv) data collection, analysis and management. Furthermore, there is limited technical capacity within government institutions and NGOs at both the national and local level to effectively use and enhance knowledge management systems as well as to disseminate information products to coastal communities for reducing their vulnerability to climate change.

D.5. Country ownership (max. 500 words, approximately 1 page)

155. The GoL considers the management of coastal erosion and the impacts of extreme climate events to be a high priority, as evident from the development of several national policies and plans and the commitment of the GoL to providing rock material as in-kind co-finance for Output 1 of the proposed project, as well as the commitment of the Ministry of Mines and Energy to ensuring the effective operation and maintenance of the project assets beyond the project implementation period. The proposed project's alignment with these plans and policies is described below.

156. The **Pro-poor Agenda for Prosperity and Development** (PAPD, 2018-2023) is Liberia's five-year National Development Plan which underpins strategies and plans across multiple sectors of government. The project contributes to three of the four pillars of the PAPD, namely: i) 'Power to the People' by contributing to lifelong environmental education and reducing gender inequalities; ii) 'Economy and Jobs' by enhancing the resilience of climate-sensitive livelihoods; and iii) 'Governance and Transparency' by building the capacity of the GoL for effective ICZM.

157. The **National Policy and Response Strategy on Climate Change** (2018) is the central policy underpinning Liberia's response to climate change and serves as the basis for all future adaptation and mitigation planning. It identifies the sectors most vulnerable to climate change impacts and names five enabling pillars to support the safeguarding of these sectors. The project will contribute to four of these pillars, specifically cross-sectoral coordination, capacity-building, integrated planning and the development of infrastructure.

158. The **National Adaptation Plan of Action** (NAPA; 2006) emphasises addressing coastal erosion as a critical national adaption priority. Along with addressing coastal erosion in vulnerable areas of the MMA, the project further aligns with Liberia's NAPA by supporting: i) improved urban planning capacity in government institutions for incorporating climate change considerations; and ii) the dissemination of information to improve climate change knowledge at local and national levels.

159. Liberia's **Climate Change Gender Action Plan** (ccGAP; 2012) prioritises the mainstreaming of gender equality into national climate change policies, programmes and interventions. The project contributes to one of the ccGAP's six priority areas for gender mainstreaming, namely the improvement of gender mainstreaming within coastal areas. This will be achieved by: i) protecting vulnerable homes through establishing hard infrastructure; ii) incorporating

¹¹⁵ *Ibid.*



gender considerations into the ICZMP; and iii) increasing participation of women in decision-making at community and institutional levels, including involvement in CBNRM.

160. The **Initial National Communication** (INC) to the UNFCCC (2013), provides a broad overview on the projected climate impacts on Liberia and an indication of the country's current GHG inventory. The adaptation priorities in the INC focus on the need to adapt to the impacts of projected SLR and increasingly frequent extreme climate events. The project is aligned with the approach recommended by the INC for reducing coastal impacts of climate change, including through the construction of protective infrastructure within the MMA.

161. Liberia's statement of its **Intended Nationally Determined Contribution** (INDC; 2015) identifies adaptation actions focusing on reducing the impacts of climate change on seven critical sectors, including agriculture, energy, health, forestry, coastal zones, fisheries and infrastructure — conditional on the provision of international financial assistance and aid. The project will align with one of the three adaptation priorities identified under the INDC, namely the construction of coastal defences to reduce the vulnerability of urban coastal areas.

162. In addition, the project will contribute to the implementation of and creating an enabling environment for land-use planning and management in Liberia, through the strengthening of policies and coordination among government institutions for ICZM. This will support the implementation of the **Land Use and Management Framework** developed by the Liberian Land Authority, as well as existing zoning ordinances in Monrovia and elsewhere.

Capacity of Accredited and Executing Entities to deliver:

163. UNDP, as the Accredited Entity of the project, provides a qualified team of national and international experts that are equipped to assist the GoL to respond to complex issues such as climate change and green growth. Through their support, UNDP will ensure that the project adopts a comprehensive, multi-sectoral approach that is centred around results-based activities. This support will include equipping Executing Entities with the knowledge and skills required to achieve expected project outputs. The strong relationships that exist between UNDP and local decision-makers, as well as UNDP's proven track record as an impartial provider of technical advice and support, will facilitate the strengthening and expansion of analytical work in key sectors and the advancement of disaster risk management within the broader context of sustainable development.

164. The EPA¹¹⁶ – an autonomous body tasked with enforcing the National Environment Protection and Management Law under the Executive Branch of Government – is the National Designated Authority (NDA) for Liberia and is responsible for the overall management of GCF engagement in Liberia. Under the supervision of UNDP and a multi-sectoral Board of Directors – represented by public and private sector stakeholders – the GoL represented by the EPA will serve as Executing Entity (EE) for the project. To date, the EPA has implemented projects with a focus on climate change in Liberia, demonstrating their capacity to successfully implement the project. The Board of Directors has also established sector-specific Technical Committees to advise the EPA on priority issues, including climate change as well as marine and coastal ecosystems. These committees will provide strategic oversight during the implementation of the project.

Stakeholder Engagement¹¹⁷

165. The project was developed following an extensive stakeholder engagement process, beginning with initial institutional and community engagements during the first phase of project design in 2016, prior to the initiation of the PPF-financed Feasibility Study. The majority of the first phase engagements focussed on identifying broad needs and vulnerabilities within the MMA, which were incorporated into early project design. Numerous engagements were also organised with relevant government departments to validate the design of the project and ensure alignment with national priorities.

166. Further stakeholder engagements focused on beneficiary communities were conducted in 2019 as part of the second phase of development. In total, over 40 community stakeholder engagements were conducted from February to May 2019 to ensure local ownership of the project and to capture the needs of communities more clearly. In this context, stakeholder engagement was primarily intended to:

¹¹⁶ The EPA was established under the National Environmental Policy of Liberia (2003) as an independent authority for the management of the environment

¹¹⁷ Further details on the stakeholder engagement process are presented in Annex 7.



- ensure that expectations and concerns of local stakeholders were incorporated into project design and implementation;
- establish rapport with beneficiary communities to encourage local buy-in for the project;
- identify a range of desired gender-related development impacts of climate change projects in the target sites and to make sure that such impacts are incorporated into the design framework;
- support executing entity in preparing gender assessments and action plans; and
- ensure that all stakeholders, especially women, are effectively involved and equally represented throughout the project design and implementation process.

167. Final institutional stakeholder engagements and validation were held during the concluding phases of project development, between July and September 2019. These engagements included a three-day workshop in Monrovia that was attended by institutional representatives from relevant government institutions¹¹⁸, UNDP and the prioritised communities, as well as several consultants and technical experts involved with the development of the project. These engagements were organised primarily for government institutions and communities to voice concerns and provide input. The final project design was validated at a workshop held in Monrovia on the 5th of September 2019 and attended by government and representatives from the West Point, New Kru Town, Hotel Africa and Atlantic Seaboard communities.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

168. The proposed project is requesting grant finance from the GCF to address the climate change impacts of SLR, accelerated coastal erosion, and increasingly frequent and intense storms on vulnerable coastal communities. The grant funds requested from GCF will be reinforced by additional co-finance from UNDP and the GoL.

Incorporation of best practice

169. The project incorporates best practice and lessons learned from relevant ongoing interventions and initiatives¹¹⁹ that focus on the protection of vulnerable communities and ecosystems in the coastal zone — particularly two GEF-funded projects in Monrovia (refer to Section B.1. for further detail). Best practice and lessons learned from these initiatives have guided the development of the project's methodologies, tools and techniques for: i) the construction of coastal protection measures — including labour practices appropriate for the Monrovian context —; ii) the management of mangrove ecosystems, particularly through liaising with communities that rely directly or indirectly on mangroves for their livelihoods and/or for raw materials; and iii) the development of a contextually-relevant ICZMP for Monrovia. Specific aspects of best practice that have been incorporated into the design of the project are summarised below.

- Designing the coastal protection measures to have minimal maintenance requirements to ensure their sustainability;
- Incorporating updated technical information such as beach profile data, bathymetry and sediment dynamics into local planning and management of coastal activities;
- Adopting an integrated approach to coastal zone management by applying a systemic and coordinated approach to local planning in risk-prone coastal areas;
- Improving governance in ICZM planning through establishment and management of the cross-sectoral working group (CSWG) alliances (institutional connectivity);
- Capitalising on the wealth of local ecological knowledge held by civil society by establishing and sustaining community-based participation in improved co-management and monitoring of natural resources;
- Collaborating with development partners¹²⁰ working in Liberia, throughout the design and implementation of the project.

170. The project also incorporates the principles of adaptive management by making provision for iterative design and revision under several activities. For example, the ICZMP (Activity 2.1) will be revised three years after it is initially developed to incorporate lessons learned from its initial implementation. In addition, the awareness-raising campaign (Activity 2.5) and state-of-knowledge assessments (Activity 3.3) will be updated annually for the duration of the project. These iterative processes will maximise the effectiveness of the project interventions by ensuring that they are specific and responsive within the Liberian context.

¹¹⁸ Government representatives included assistant ministers and technical personnel from the Environmental Protection Agency (EPA), Ministry of Mines and Energy (MME), Ministry of Public Works (MPW), Ministry of Finance and Development Planning (MDFP).

¹¹⁹ These investments include both public expenditure and donor-funded initiatives

¹²⁰ During project development, UNDP engaged with Conservation International, the World Bank and JICA to validate project design and explore opportunities for synergy. Engagement with these and other development partners will continue throughout project implementation.

**Cost-effectiveness**

171. A conservative estimate of the expected net present value (ENPV) of the project is USD17.73 million using a 10% discount rate, with an economic internal rate of return of 21%. In addition to the above damages estimated, benefits also include an increase in income growth and the social benefit of the project through improved infrastructure.
172. Of the USD25 million of project costing, 34% of the necessary budget resources or USD8.4 million is contributed in the form of Co-financing with majority funded by GoL in spite of its economic and budget constraints mentioned above, bringing in co-finance resources — in the form of grants and in-kind contributions — to the project demonstrates its commitment to the project and more strongly its moral responsibility to invest in building climate resilience of its population.
173. This project proposes the construction of coastal protection measures along approximately 1,050 m of exposed and vulnerable coastline as well as measures to protect and enhance the climate-resilience of the livelihoods of ~25% of Monrovia's population. The cost of these measures is USD104 / beneficiary. This is a reasonable cost, especially given, the fact that the indirect beneficiaries are excluded.



E. LOGICAL FRAMEWORK

This section refers to the project/programme's logical framework in accordance with the GCF's [Performance Measurement Frameworks](#) under the [Results Management Framework](#) to which the project/programme contributes as a whole, including in respect of any co-financing.

E.1. Paradigm shift objectives

Please select the appropriated expected result. For cross-cutting proposals, tick both.

- Shift to low-emission sustainable development pathways
- Increased climate resilient sustainable development

E.2. Core indicator targets

Provide specific numerical values for the GCF core indicators to be achieved by the project/programme.

Methodologies for the calculations should be provided. This should be consistent with the information provided in section A.

E.2.1. Expected tonnes of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	Click here to enter text. t CO ₂ eq	
	Lifetime	Click here to enter text. t CO ₂ eq	
E.2.2. Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total project financing (b) Requested GCF amount (c) Expected lifetime emission reductions (d) Estimated cost per t CO₂eq (d = a / c) (e) Estimated GCF cost per t CO₂eq removed (e = b / c)		Choose an item. Choose an item. t CO ₂ eq Choose an item. / t CO ₂ eq Choose an item. / t CO ₂ eq
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	(f) Total finance leveraged (g) Public source co-financed (h) Private source finance leveraged (i) Total Leverage ratio (i = f / b) (j) Public source co-financing ratio (j = g / b) (k) Private source leverage ratio (k = h / b)		Choose an item. Choose an item. Choose an item. Choose an item. / t CO ₂ eq
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)	Direct Indirect	250,000 ¹²¹ 122,500 female 127,500 male 1 million ¹²² (total population of Monrovia) 490,000 female 510,000 male	
<i>For a multi-country proposal, indicate the aggregate amount here and provide the data per country in annex 17.</i>			
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct Indirect	6% (~3% of the total population of women and ~3% of the total population of men) 21% (~10% of the total population of women and ~11% of the total population of men)	
<i>For a multi-country proposal, leave blank and provide the data per country in annex 17.</i>			

¹²¹ Direct benefits will accrue at the site-specific scale. Project interventions will directly benefit West Point's communities through coastal defence and enhanced livelihoods; and through enhanced livelihoods and improved protection of mangrove ecosystems in the communities of Topoe Village; Plonkor and Fiama; and Nipay Town and Jacobs Town.

¹²² Indirect benefits will be realised through the adoption of a climate risk informed ICZM at the municipal scale within the project area. Therefore, indirect beneficiaries have been calculated as the total population of Monrovia Metropolitan Area (MMA) in Liberia.



E.3. Fund-level impacts

Select the appropriate impact(s) to be reported for the project/programme. Select key result areas and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected impact result. The result areas indicated in this section should match those selected in section A.4 above. Add rows as needed.

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.1 Change in expected losses of lives and economic assets (US\$) due to the impact of extreme climate-related disasters	Impact assessment report completed by ICZM Unit, including: i) on the ground longitudinal survey augmented with transect walks assessing damages and wave/storm ingress; and ii) GIS assessment of change over time of coastline	Damage to infrastructure at West Point in the 2008-2018 period totals USD5.23 million 0 lives reported as lost as a result of coastal erosion in West Point in the 2008-2018 period ¹²³ .	Damage to infrastructure and assets vulnerable to climate change impacts at West Point expected to be reduced by USD0 by 2024 ¹²⁴ , compared to a scenario with no intervention ¹²⁵ .	Damage to infrastructure and assets vulnerable to climate change impacts at West Point expected to be reduced by USD1.23 million by 2027 ¹²⁶ , compared to a scenario with no intervention ¹²⁷ .	Rock revetment will protect infrastructure, assets and communities against ongoing coastal erosion as well as extreme climate related disasters. No new settlements in exposed areas that are not protected by revetment during project period. Direct tangible damage without the project was estimated for 2030 in the Economic Analysis (Annex 3A) ¹²⁸ . Damage from coastal retreat and storms will only be reduced by the

¹²³ The AE will not report on losses of lives due to the fact that no loss of life has been reported in West Point as a result of coastal erosion to date and no loss of life is expected. Coastal erosion in this area is primarily a result of wave action and is therefore incremental rather than sudden. It is, therefore, mostly possible to avoid loss of life.

¹²⁴ At mid-term, the construction of the revetment will be underway, and it will not yet be an effective coastal protection measure. The change in expected loss from coastal retreat and storms is therefore USD0.

¹²⁵ In a scenario with no intervention, loss and damage of USD7.84 million is expected by 2024. This is calculated as 40% of the expected loss and damage of USD19.6 million by 2030 presented in Annex 3A: Economic Analysis.

¹²⁶ The construction of the West Point revetment will be completed in Year 5 of the project period. It is therefore expected that the revetment will reduce the expected loss and damage from coastal retreat and storms over one year during the project period. The target given is the sum of the reduced loss and damage from coastal retreat (~USD920,000) and storms (~USD310,000) in the first year after the construction of the revetment is complete. Further detail is provided in Annex 3B: Economic Analysis Spreadsheet.

¹²⁷ In a scenario with no intervention, loss and damage of USD13.72 million is expected by 2027. This is calculated as 70% of the expected loss and damage of USD19.6 million by 2030 presented in Annex 3A: Economic Analysis.

¹²⁸ Details of these estimates are provided in Annex 3A: Economic Analysis. Avoided losses as a result of the completed West Point revetment have been projected to 2030 (USD19.6 million), 2050 (USD85.1 million) and 2100 (USD154.9 million).



					revetment after construction is completed.
<i>A1.2 Number of males and females benefitting from the adoption of diversified, climate-resilient livelihood options (including fisheries, agriculture, tourism, etc.)</i>	Household and affected stakeholder surveys compiled by ICZM Unit Remote sensing surveys compiled by ICZM Unit to monitor the extent of the mangrove forest degradation from human activity	0 beneficiaries with improved climate-resilient livelihoods Mangrove conservation Adoption of solar-powered cold storage facilities Adoption of energy efficient cookstove	Total beneficiaries with improved, climate-resilient livelihoods: Males = 1,625 Females = 2,425 Males= 1,600 Females= 2,400 Males= 0 Females= 0 Adoption of energy efficient cookstove	Total beneficiaries with improved, climate-resilient livelihoods: Males = 4,867 Females = 7,267 Males= 4,800 Females= 7,200 Males= 720 Females= 1,080 Adoption of energy efficient cookstove	Mangrove protection and conservation efforts will have a positive impact on fish stocks, improving the climate resilience of fishery-dependent livelihoods in Monrovia. All fisherfolk and fishmongers in Monrovia will benefit from this. At least 25% of West Point fisherfolk and fishmongers will use the cold storage facilities. These beneficiaries will also benefit from mangrove conservation. 100% of West Point fisherfolk will benefit from more climate-resilient boat launching sites. These beneficiaries will also benefit from

¹²⁹ Annex 3: Financial and Economic Assessment, Appendix J – Damage and CBA model Monrovia base case



				manufacturing Males= 50 Females= 50 Decreased exposure of boat-launching sites to dangerous conditions induced by climate change Males= 0 Females= 0	manufacturing Males= 125 Females= 125 ¹³⁰ Decreased exposure of boat launching sites to dangerous conditions induced by climate change Males= 1,800 Females= 0	mangrove conservation. Annual training workshops will be held for 150 participants from Year 2 to Year 5. It is assumed that there will be 33% uptake of training on cookstove manufacturing, and at least 50% of the uptake will be among people who are not fisherfolk or fishmongers and therefore are not included in the beneficiaries of mangrove conservation initiatives.
A3.0 Increased resilience of infrastructure and the built environment to climate change	A3.1 Number and value of physical assets made more resilient to climate variability and change, considering human benefits	Impact assessment report compiled by ICZM Unit ¹³¹	No protected boat launching sites, and zero metres of resilient public amenity space at West Point ¹³² .	No boat launching sites and 400 m of public amenity space resilient to coastal erosion and wave action, with a value of USD6.03 million	2 boat launching sites and 1050 m of public amenity space resilient to coastal erosion and wave action, with a value of USD17.22 million	Boat launching sites will be considered resilient if fisherfolk are able to continue to launch boats at the same sites despite increased wave action and storm surges. Public amenity space will be considered resilient if the space is still accessible and suitable for community use despite increased wave action and storm surges.

¹³⁰ There are a total of ~12,000 fisherfolk and fishmongers in Monrovia, ~60% of whom are female. See Section B.1 for further details.

¹³¹ Sources of data for the impact assessment will include: i) household and affected stakeholder surveys augmented with remote sensing surveys; ii) an on the ground longitudinal survey augmented with transect walks assessing damages and wave/storm ingress; and iii) GIS assessment of change over time of coastline

¹³² Fishing boats are currently launched from informal beach sites exposed to coastal erosion and extreme wave action. The beach is also currently used as public amenity space and is exposed to coastal erosion and dangerous waves.



						Resilience of infrastructure, boat launching sites and public amenity space will be increased from reduced exposure to damage-causing waves, SLR and coastal retreat.
						<p>Value of resilient boat launching sites and public amenity space calculated from the cost of construction of the revetment and green promenade, including boat launching sites¹³³.</p> <p>Mid-term target is ~35% of the total target for the length of the revetment.</p>

E.4. Fund-level outcomes

Select the appropriate outcome(s) to be reported for the project/programme. Select key expected outcomes and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected outcome. Add rows as needed.

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term)	Final	
A5.0 Strengthened institutional and regulatory systems for climate-responsive	A5.2 Number and level of effective coordination mechanisms	Coordination report produced by the project M&E Specialist ^{134,135}	One coordination mechanism (ICZM Unit) at Level 1	3 coordination mechanisms for ICZM (ICZM Unit, ICZM Committee	3 coordination mechanisms for ICZM (ICZM Unit, ICZM Committee	Political and institutional stability enable establishment and functioning of

¹³³ As represented in Annex 4: Detailed budget plan.

¹³⁴ It is necessary for this Coordination Report to be project generated to avoid bias in performance measurement which may result from one of the entities being assessed also being responsible for its own assessment.

¹³⁵ The report will be informed by a scorecard incorporating effectiveness level indicators: Level 0 = coordination mechanism for ICZM has yet to be established. Level 1 = coordination mechanism for ICZM is established, but not operational. Level 2 = Coordination mechanism for ICZM is partially operational, engaging effectively across government institutions, but implementation of the ICZMP is not fully effective. Level 3 = coordination mechanism for ICZM working effectively to implement the ICZMP in Monrovia.



planning and development			Two coordination mechanisms (ICZM Committee and CSWG) at Level 0	Committee and CSWG) at Level 2	and CSWG) at Level 3	ICZM coordination mechanisms
A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	<i>A7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools instruments, strategies and activities to respond to climate change and variability</i>	Coastal management assessment conducted by ICZM Unit ¹³⁶	No government departments or agencies using ICZMP (Level 0)	10 target government institutions at Level 2	10 target government institutions at Level 4	<p>Capacity building activities will lead to behaviour change and uptake of climate-resilient practices</p> <p>Political will and staff retention</p> <p>CSWG and the ICZM Committee will have the authority to plan updates to regulations and by-laws</p> <p>ICZMP will be used to change management practices</p>

¹³⁶ This assessment will use indicator levels for the integration of ICZM: Level 0 = No government institution or agencies implementing ICZM; Level 1= Institutions engaged in developing an ICZMP; Level 2 = ICZMP developed using a participatory approach; Level 3 = Institution-specific action plan for the implementation of ICZMP developed; Level 4 = A portion of each target government institution's budget allocated to implementing the ICZMP.



		<p>Annual state-of knowledge surveys compiled by contracted service provider (Activity 3.3)</p> <p>Household surveys conducted by the ICZM Unit</p>	<p>Targeted communities have limited understanding of climate change and its likely impacts on livelihoods in Monrovia¹³⁷.</p> <p>0% of targeted communities have made changes to livelihood practices and have adopted alternative livelihood opportunities to increase their climate resilience¹³⁸</p>	<p>10% of targeted communities have an improved understanding of climate change and its likely impacts on livelihoods in Monrovia</p> <p>0% of targeted communities have made changes to livelihood practices and have adopted alternative livelihood opportunities to increase their climate resilience</p>	<p>25% of targeted communities have an improved understanding of climate change and its likely impacts on livelihoods in Monrovia</p> <p>15% of targeted communities have made changes to livelihood practices and have adopted alternative livelihood opportunities to increase their climate resilience</p>	<p>Knowledge and resources accessed via the education and innovation centre will improve climate-resilient practices amongst targeted communities and diversify livelihood options</p>
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¹³⁷ The baseline understanding of climate change and its impacts will be defined from the baseline state-of-knowledge survey

¹³⁸ These opportunities include use of cold storage facilities, and the manufacture and use of efficient cookstoves developed under the project



E.5. Project/programme performance indicators

The performance indicators for progress reporting during implementation should seek to measure pre-existing conditions, progress and results at the most relevant level for ease of GCF monitoring and AE reporting. Add rows as needed.

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
Output 1. Protection of coastal communities and infrastructure at West Point against erosion caused by sea-level rise and increasingly frequent high-intensity storms.	Length of formal coastal protection revetment at West Point constructed during project lifespan	Implementation report from contractor on construction of coastal defence infrastructure Site survey of coastal protection infrastructure conducted by the ICZM Unit	No formal coastal defence structure at West Point	400 m of revetment constructed at West Point	1050 m of revetment constructed, and green promenade established at West Point	No extreme natural or social economic events delaying construction.
	Number of dwellings and non-residential buildings and assets in West Point behind coastal protection revetment infrastructure constructed during project lifespan	Spatial survey of damages to buildings/signs of ocean ingress. GIS assessment of coastal erosion rate compiled by ICZM Unit Household surveys assessing community perceptions of coastal erosion and risk compiled by ICZM Unit	0 dwellings in West Point protected from coastal erosion 0 non-residential buildings and assets in West Point protected from coastal erosion	500 West Point dwellings protected from coastal erosion by revetment 65 non-residential buildings and assets ¹³⁹ in West Point protected from coastal erosion by	1,812 West Point dwellings protected from coastal erosion by revetment 217 non-residential assets and buildings in West Point protected by revetment	Number of dwellings and non-residential buildings in area to be protected remains constant or increases. Dwellings will be 'protected' as rock revetment will prevent damage or destruction from coastal erosion and storm surges. No new settlements in exposed areas that are not protected by revetment during project period.

¹³⁹ Non-residential buildings and assets in West Point include community buildings, small shops, markets, religious and cultural centres, and schools and government buildings. A list of all assets to be protected under Output 1 is provided in Annex 3: Economic Analysis.



				revetmen t		
Output 2: Institutional capacity building and policy support for the implementation of Integrated Coastal Zone Management (ICZM) across Liberia.	Change in how ICZM is integrated into roles and responsibilities of government staff involved in coastal zone management	Annual performance reviews for staff of government institutions Stocktake of job descriptions conducted by the CSWG	Responsibility for ICZM implementation not formally assigned However, at least 10 staff members contributing to ICZM implementation	ICZM implementation not formally integrated into the roles and responsibilities of all relevant staff At least 40 staff members contributing to ICZM implementation	ICZM implementation is formally integrated into the job descriptions of relevant staff The details of how ICZM will be implemented will differ substantially between government entities.	No government restructuring, or major political changes occur that impede adoption of ICZMP. The availability of staff time and assignment of roles and responsibilities will result in improved implementation of ICZM.
Output 3: Protecting mangroves and strengthening gender- and climate-sensitive livelihoods to build local	Change in income levels for community members using the education and innovation centre from the adoption of	Baseline survey Participant surveys compiled by CSC	TBD ¹⁴⁰	No change in income levels	30% increase from the baseline in income	Interventions for improving climate-resilient livelihoods from the target communities will be taken up and

¹⁴⁰ The baseline will be determined under Activity 3.3 as part of the baseline data collection on climate-resilient livelihoods.



climate resilience in Monrovia.	climate-resilient livelihoods	Annual state-of-knowledge assessments compiled by CSC		compared to the baseline for at least 50% of community members engaged in livelihood enhancement activities	will result in a measurable increase in income.
Consideration of mangrove conservation in decisions about livelihood activities for members of the four targeted communities	Impact assessment reports compiled by ICZM Unit Annual state-of-knowledge assessments compiled by CSC	Mangrove conservation not explicitly considered in decisions about livelihood activities for members of four targeted communities	25% of surveyed community members understand mangrove conservation and its benefits and are aware of the links between mangrove conservation and livelihood security	25% of surveyed community members are able to give at least one example of where consideration of mangrove conservation has changed their decisions about livelihood activities	No social or political developments that will lead co-management parties to not honour their commitments in the agreements. Consideration of mangrove conservation in livelihood-related decisions will reduce anthropogenic pressure on mangroves. Behavioural change will occur after an understanding of mangrove conservation is evident.
Rate of degradation of mangrove ecosystems	Impact assessment reports compiled by ICZM Unit	TBD ¹⁴²	Degradation of mangrove ecosystems	Degradation of mangrove ecosystems	Implementation of co-management agreements will result in a measurable decrease in

¹⁴² The baseline will be determined under Activity 3.3 as part of the baseline mangrove spatial analysis.



		Remote sensing and GIS assessment of mangrove extent compiled by ICZM Unit. Baseline established at start of project ¹⁴¹		reduced by 10% compared to the baseline in area covered by mangrove co-management agreement	reduced by 30% compared to the baseline in areas covered by mangrove co-management agreement	mangrove degradation.
	Percentage of fisherfolk and fishmongers in West Point using cold storage facilities	CSC report on use of the cold storage facilities Impact Assessment Report for the project produced by the ICZM Unit	0% of fisherfolk and fishmongers at West Point using project-developed cold storage facilities	0% of fisherfolk and fishmongers at West Point using project-developed cold storage facilities	25% of fisherfolk and fishmongers at West Point making use of cold storage facilities	Cold storage facilities will open access to refrigerated fish markets for fisherfolk and reduce spoilage by preserving fish for longer

E.6. Activities

All project activities should be listed here with a description and sub-activities. Significant deliverables should be reflected in the implementation timetable. Add rows as needed.

Activity	Description	Sub-activities	Deliverables
1.1. Prepare construction plan and finalise technical design specifications for coastal defence structure at West Point.	A construction plan will be developed and detailed design finalised for a revetment and green promenade at West Point, based on the existing conceptual design in the	1.1.1. Refine and detail the design and construction plan for the coastal defence infrastructure and green promenade at West Point.	<ul style="list-style-type: none"> Detailed engineering designs and construction plan produced by engineering firm ESIA conducted for the coastal defence revetment to inform

¹⁴¹ The extent of mangrove coverage in the Mesurado Wetland of Monrovia is ~2320 ha.



	<p>Engineering Sub-assessment (Annex 2.C). This detailed design and construction plan will identify all required inputs and guidelines for procurement procedures, contracting, ESS processes and gender-sensitive consultations. The design and construction plan will be validated by the community and government stakeholders prior to implementation.</p>	<p>1.1.2. Host a validation workshop to present and validate final design and construction plan to government and community stakeholders.</p>	<p>design and construction plans at West Point.</p> <ul style="list-style-type: none">• 1 workshop report based on validation workshop occurring in year 2 for 100 participants
1.2. Construct coastal defence structure to protect West Point against climate change-induced coastal erosion.	<p>An engineering firm will be contracted to build the revetment and green promenade according to the design and construction plan developed under Activity 1.1. The revetment will protect the West Point community from accelerated coastal erosion and provide an open community space as well as preserving launching sites for fishing boats.</p>	<p>1.2.1. Construct a rock revetment with green promenade and community amenities at West Point.</p>	<ul style="list-style-type: none">• Revetment (coastal defence measures) of approximately 1,050 m at West Point with green promenade constructed• Report on training for monitoring and maintenance of the revetment
2.1. Develop an Integrated Coastal Zone Management Plan for Liberia.	<p>A national Integrated Coastal Zone Management Plan (ICZMP) will be developed in consultation with relevant government institutions and stakeholders. This will be done in phases by: i) producing a multi-criteria vulnerability map of the Liberian coastline; ii) collaboratively developing an ICZMP; iii) establishing an ICZM Committee and Cross-Sectoral Working Group (CSWG) to implement the plan; and iv) revising and updating the ICZMP after three years to incorporate lessons learned.</p>	<p>2.1.1. Develop a high-resolution, multi-criteria vulnerability map of the Liberian coastline.</p> <p>2.1.2. Develop the climate-responsive ICZMP in collaboration with stakeholders, incorporating information from the map developed under Sub-activity 2.1.1.</p> <p>2.1.3. Host validation workshops to present and secure ownership of the ICZMP for representatives from the 10 government institutions responsible for coastal management in Liberia.</p>	<ul style="list-style-type: none">• High-resolution multi-criteria vulnerability map of Liberian coastline produced• ICZMP developed and adopted by year 3 and updated in year 6• Workshop reports for 2 validation workshops with 50 participants including the ICZM Committee and the CSWG, one conducted in year 2 and one in year 6 for the development and updating of the ICZMP respectively• 10-member CSWG established• 10-member ICZM Committee established
2.2. Capacitate the Cross-Sectoral Working Group to mainstream ICZM into relevant government sectors through a Training-of-Trainers approach.	<p>The Cross-Sectoral Working Group (CSWG) will be trained through a Training-of-Trainers (ToT) approach to increase their capacity to implement the ICZMP. This will include hosting an extensive series of training workshops for members of the CSWG and representatives of relevant</p>	<p>2.2.1. Host an inception workshop to present and provide orientation to the CSWG on the finalised ICZMP.</p> <p>2.2.2. Host a planning workshop for the CSWG to</p>	<ul style="list-style-type: none">• Action plan developed during two-day meeting for integrating ICZM into by-laws and regulations for the 10 relevant institutions• Workshop reports based on two inception workshops organised,



	<p>government institutions. The ToT approach will enable the 10 government institutions responsible for ICZM to further capacitate their staff. To support the implementation of the ICZMP, the CSWG will also develop an action plan for integrating ICZM into sector-specific regulations and by-laws.</p>	<p>develop an action plan for implementing the ICZMP, including plans for changes/updates required for sector-specific regulations and by-laws.</p> <p>2.2.3. Develop a curriculum and training program to capacitate relevant technical personnel on cross-sectoral coordination and the effective implementation of the ICZMP.</p> <p>2.2.4. Host a validation workshop with the CSWG to finalise training curricula.</p> <p>2.2.5. Conduct a training and action programme for members of the CSWG to mainstream ICZM into relevant government entities and support mainstreaming of ICZM into national policies, programmes and plans.</p>	<ul style="list-style-type: none">one in year 2 and one in year 6, for 25 participants2 co-design workshops for 39 members of the CSWG and the ICZM Unit (one in year 2 and one in year 5) to introduce the ICZMP and collaboratively define curriculaTraining curricula for capacitating relevant technical personnel on ICZM developedLong-term (16-week) training programme conducted to capacitate 36 technical staff from relevant government institutions (3 members from each of the 10 relevant institutions and 6 members of the ICZMU)Stocktake of job descriptions assessing integration of ICZM into roles and responsibilities of government staff involved in coastal zone management
2.3 Strengthen the asset base and technical capacity of the ICZMU for the collection of spatial and biophysical coastal information to support the implementation of the ICZMP.	The capacity of the ICZM Unit (ICZMU) for the collection, processing and synthesis of spatial, meteorological and oceanographic data will be developed. This will include: i) the procurement of high-resolution spatial data for Monrovia; ii) the acquisition of wave buoys and other relevant equipment; iii) the installation of a database for collecting and processing the data; and iv) training and support for technical staff to use and maintain the system.	<p>2.3.1. Procure high-resolution remote sensing data to monitor coastal erosion and mangrove ecosystem health and degradation in the MMA to be made publicly accessible and used for the vulnerability map under Sub-activity 2.1.1.</p> <p>2.3.2. Contract a specialist firm to provide an integrated, near-shore wave buoy-based data collection and processing system to support the collection of meteorological and oceanographic data for improved generation of information on parameters relevant to ICZM and meteorological decision-making in Liberia.</p>	<ul style="list-style-type: none">High-resolution spatial datasets for eight years (five historical and three during the project)Integrated, near-shore wave buoy-based data collection and processing system operationalised throughthe installation of 4 wave buoys and associated ICT equipment;development of database, data collection and processing systems; andtraining courses on use and O&M
2.4. Strengthen the existing Environmental Knowledge Management System (EKMS) to act as a platform for awareness-raising and	The newly implemented EKMS will be upscaled by improving its accessibility and incorporating information on ICZM into the system. ICT equipment will be procured for the 10 government institutions	<p>2.4.1. Procure ICT equipment for each of the relevant government institutions to access and use climate and environmental information through the platform.</p>	<ul style="list-style-type: none">ICT equipment for the EKMS procured, including:<ul style="list-style-type: none">20 laptops for 10 ministriesStorage capacity installed and



sharing of climate risk-informed ICZM approach.	responsible for coastal management to enable them to access and operate the knowledge management platform. In addition, knowledge products on ICZM and the EKMS will be developed and disseminated to government institutions.	2.4.2. Collect lessons learned on ICZM on an annual basis and incorporate this information into the EKMS. 2.4.3. Design and disseminate knowledge products on climate-responsive ICZM in government institutions and to the private sector.	bandwidth capacity improved <ul style="list-style-type: none">• Annual reports on lessons learned for ICZM produced• Knowledge products on ICZM and the EKMS produced and disseminated over 5 years, including:<ul style="list-style-type: none">• 500 posters per year• 1,000 brochures per year
2.5. Conduct an awareness-raising campaign for communities in focus areas on climate change impacts and adaptation practices.	An awareness-raising campaign on climate change impacts and adaptation practices will be designed and conducted among four priority communities in Monrovia — West Point, Jacob Town, Fiamah and Topoe Village. The campaign will include community meetings, radio programmes and visual communication materials. The campaign will be supported by knowledge-sharing groups in each of the four target communities and will be developed to take gender-differentiated vulnerabilities to climate change into consideration. The campaign will be reviewed and updated annually for the project duration.	2.5.1. Design an awareness-raising campaign on climate change impacts and adaptation practices. 2.5.2. Host radio programmes on climate change impacts, vulnerability and adaptation practices in coastal and wetland areas. 2.5.3. Establish, train and engage community-based knowledge-sharing groups to support on-the-ground awareness raising and knowledge-sharing. 2.5.4. Install and distribute awareness-raising knowledge products within the four communities for awareness-raising interventions. 2.5.5. Organise community meetings to raise awareness around climate change adaptation and the benefits of proposed interventions.	<ul style="list-style-type: none">• Awareness-raising strategy developed and updated annually• 4 radio programmes per year for 5 years• 20 5-day workshops organised (one for each of the 4 areas annually for 5 years)• Knowledge-sharing groups consisting consist of 4 members for each of the 4 areas established and trained• 12 Billboards (3 for each of the 4 targeted areas) in public spaces for 5 years• Awareness raising products distributed per year for 5 years (400 posters, 400 brochures, 800 stickers, 400 caps and 400 t-shirts)• Minutes from 3 community meetings for 100 participants organized per year in each of the 4 areas for awareness raising
3.1. Establish a community education and innovation centre to function as a community knowledge generation and learning hub, a repository on climate change adaptation practices and to host community activities under Output 3.	An education and innovation centre will be established in an existing community or government-owned building to host and coordinate community-based activities (Activities 3.2 and 3.4) and all community-level awareness-raising being implemented under Output 3. The centre will be managed by a Community Stewardship	3.1.1. Locate, renovate and equip existing structure situated on community or municipal-owned land in West Point. 3.1.2. Establish and commission the ten-person Community Stewardship Committee (CSC) with	<ul style="list-style-type: none">• Existing building identified and renovated to be established as an education and innovation centre• Detailed operation and maintenance plan for education and innovation centre• 10-person Community Stewardship Council (CSC) with at least 50%



	<p>Committee (CSC) and will serve as the focal point for all community events and capacity building activities.</p>	<p>representatives from each of the four areas.</p> <p>3.1.3. Host an inauguration event to open the centre to the public and present the members of the CSC.</p> <p>3.1.4. Host a collaboration workshop for government representatives, CSC members and NGOs to meet and define the guiding principles for the education and innovation centre.</p>	<p>women representatives commissioned</p> <ul style="list-style-type: none">• Inaugural event (1,500 participants) to launch the education and innovation centre organised• Workshop report based on one 2-day collaboration workshop organised for CSC members as well as for representatives from relevant government ministries, NGOs, and development, conservation and community organisations• CSC Constitution
3.2. Establish community-led co-management agreement to ease anthropogenic pressure on mangroves in the MMA.	<p>A co-management agreement will be developed through a participatory process to facilitate the sustainable use of — and reduce anthropogenic pressures on — mangroves in the Mesurado Wetlands. This agreement will be developed taking into consideration: i) uses of mangroves by different social groups; ii) gender considerations; and iii) guidance provided by government stakeholders and NGOs involved in the conservation of mangrove areas. Roles and responsibilities, including for the CSC and community members will be clearly outlined. The agreement will be revised after three years to incorporate lessons learned during the project.</p>	<p>3.2.1. Develop the community-led co-management agreement through a participatory gender-sensitive process.</p> <p>3.2.2. Host a three-day co-design and validation workshop for the community-led co-management agreement.</p> <p>3.2.3. Design and implement an awareness-raising campaign on sustainable Community-Based Natural Resource Management (CBNRM) and the co-management agreement.</p> <p>3.2.4. Host a workshop to assess the effectiveness of the co-management agreement (Activity 3.2.1) and re-negotiate it in Year 5 based on findings from Activity 3.3.</p>	<ul style="list-style-type: none">• Co-management agreement for reducing anthropogenic pressure on mangroves finalised• Workshop report from one 3-day co-design and validation workshop organised for relevant government ministries, NGOs, conservation organisations and CSC members• Awareness-raising campaign on CBNRM designed and implemented (100 posters and 400 brochures distributed per year for 5 years and 20 signboards erected)• Workshop report from one 2-day workshop organised for the assessment and re-negotiation of the co-management agreement, for relevant government ministries, NGOs, conservation organisations and CSC members
3.3. Conduct annual assessments to evaluate the project-induced changes in mangrove degradation, community perceptions and awareness of climate change impacts, adaptation options and mangrove ecosystems throughout the project implementation period.	<p>Spatial analyses of the health and degradation of mangrove ecosystems in the Mesurado Wetland will be undertaken using the high-resolution data acquired under Activity 2.3. An initial assessment will be conducted and updated twice during the project period to assess the impact of the</p>	<p>3.3.1. Using high-resolution remote sensing data procured under Sub-activity 2.3.1, conduct analyses of mangrove extent and degradation in the Mesurado Wetland to assess the impact of project interventions</p>	<ul style="list-style-type: none">• 3 reports on mangrove extent and degradation in the Mesurado Wetland incorporating spatial analysis to assess the impact of project interventions. Reports to be delivered in years 2, 4 and 6.• Baseline report with annual updates on state-



	<p>project. In addition, a baseline state-of-knowledge assessment will be undertaken on community awareness on: i) climate change impacts and adaptation options; ii) CBNRM and the role of mangrove ecosystems in the MMA; and iii) different types of climate-resilient livelihoods currently being practiced within the MMA. The baseline surveys will be collated into a report and annual follow-up surveys will be conducted to determine the annual change-in-state, which will help to refine the awareness-raising campaigns and support the uptake of additional climate-resilient livelihoods.</p>	<p>3.3.2. Conduct a baseline state-of-knowledge survey on climate change impacts, adaptation options, CBNRM and mangrove ecosystems and undertake annual surveys to determine the change-in-state over the duration of the project.</p> <p>3.3.3. Undertake periodic assessments of climate-resilient livelihood practices and new opportunities to inform the design of new options and determine their uptake as a result of the project.</p>	<p>of-knowledge developed based on four community-level assessments conducted in each of the four focus areas targeted under the project to develop indicators that determine baseline</p> <ul style="list-style-type: none">• Baseline reports and annual updates on current and potential climate-resilient livelihoods practices produced based on alternative, climate-resilient livelihoods strategies developed for the four target communities• Baseline and final project impact assessment conducted
3.4. Establish small-scale manufacturing facilities and develop training material to capacitate community members to manufacture and sell cookstoves to support alternative climate-resilient livelihoods.	<p>The uptake of diversified climate-resilient livelihoods will be supported by developing training courses, facilities and providing material inputs for the fabrication of value-added products, specifically for energy-efficient cookstoves. The facilities will be incorporated into the education and innovation centre and will focus on producing energy-efficient products with a specific emphasis on activities suitable for women and vulnerable social groups. Different livelihood activities will be supported throughout the project lifespan depending on the results of the assessment conducted under Activity 3.3 and all training materials will be publicly available to support the upscaling of activities.</p>	<p>3.4.1. Develop a training programme and publicly available training materials, and conduct trainings to capacitate community members to manufacture energy-efficient cookstoves.</p> <p>3.4.2. Establish a small-scale manufacturing workshop and procure equipment and material for the education and innovation centre.</p> <p>3.4.3. Host an annual workshop at the education and innovation centre to capacitate women's groups on business strategies and connect them with value chain actors to upscale the development of energy efficient value-added products.</p>	<ul style="list-style-type: none">• Specification for energy-efficient cookstoves publicly available• 5 annual workshops at the innovation centre designed and organised for implementing the community-based training program• 1 vocational training centre (simple workshop area) established with equipment and material inputs procured for production of energy efficient cookstoves• Workshop reports from 5 workshops (1 per year for 5 years) organised for 100 participants to capacitate women on business practices
3.5. Purchase and install low-maintenance eco-friendly cold storage facilities near fish processing sites to reduce pressure on mangroves and increase market efficiency.	<p>Cold storage facilities will be designed and installed in proximity to the West Point fish processing site. These cold storage facilities will be designed according the community requirements as determined by a needs assessment. They will be powered by solar energy and</p>	<p>3.5.1. Develop for site-specific eco-friendly, solar-powered cold storage units for the West Point fish processing site, based on the needs of fishers and fishmongers.</p>	<ul style="list-style-type: none">• Detailed report on community needs for cold storage produced based on needs assessment conducted.• Validation workshop conducted to endorse the final cold-storage designs



	<p>will be managed by women in the community in collaboration with the CSC established under Activity 3.1.2. The facilities will be designed be accessible to all fisherfolk in the area and to require limited maintenance and any required maintenance will be provided by the service provider contracted to develop the storages, with support from UNDP.</p>	<p>3.5.2. Host a workshop in the targeted community to validate the designs (Sub-activity 3.5.1) and capacitate fisherfolk in the use and management of the cold storage units</p> <p>3.5.3. Install and operate the low-maintenance eco-friendly solar-powered cold storage facilities.</p>	<ul style="list-style-type: none">• 2 eco-friendly, solar-powered cold storage units installed• Report on trainings provided to the members of the facility managers, CSC and representatives of fishmongers to operate, maintain and manage the solar-powered cold facilities.
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**E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)**

174. Project-level monitoring and evaluation will be undertaken in compliance with the [UNDP POPP](#) and the [UNDP Evaluation Policy](#).
175. The primary responsibility for day-to-day project monitoring and implementation rests with the Project Manager. The Project Manager will develop annual work plans to ensure the efficient implementation of the project. The Project Manager will inform the Project Board and the UNDP Country Office of any delays or difficulties during implementation, including the implementation of the M&E plan, so that the appropriate support and corrective measures can be adopted. The Project Manager will also ensure that all project staff maintain a high level of transparency, responsibility and accountability in monitoring and reporting project results.
176. The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The UNDP Country Office is responsible for complying with UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP Regional Technical Advisor as needed. The project target groups and stakeholders including the NDA Focal Point will be involved as much as possible in project-level M&E.
177. A project inception workshop will be held after the UNDP project document has been signed by all relevant parties to: i) re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation; ii) discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms; iii) review the results framework and discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E plan; iv) review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and v) plan and schedule Project Board meetings and finalize the first year annual work plan. The final inception report will be cleared by the UNDP Country Office and the UNDP Regional Technical Adviser and approved by the Project Board and submitted to the GCF within 6 months after the Funded Activity Agreements effectiveness date.
178. A project implementation report will be prepared for each year of project implementation. The Project Manager, the UNDP Country Office, and the UNDP Regional Technical Advisor will provide objective input to the annual GCF APR. The Project Manager will ensure that the indicators included in the project results framework are monitored annually well in advance of the GCF APR submission deadline. Progress against the gender action plan, stakeholder engagement, social and environmental safeguards updates, challenges and delays must also be monitored by the Project Manager and reported in the GCF APR. The GCF APR will be shared with the Project Board and other stakeholders.
179. An independent interim revaluation will be undertaken, and the findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the final evaluation report will follow the standard templates and guidance available on the [UNDP Evaluation Resource Centre](#). The final evaluation report will be cleared by the UNDP Country Office and the UNDP Regional Technical Adviser and will be approved by the Project Board. The final evaluation report will be available in English.
180. An independent final evaluation will take place when project activities have concluded. The terms of reference, the evaluation process and the final evaluation report will follow the standard templates and guidance available on the [UNDP Evaluation Resource Centre](#). The final evaluation report will be cleared by the UNDP Country Office and the UNDP Regional Technical Adviser and will be approved by the Project Board. The TE report will be available in English.



181. A key tool for MRV for the project is an independent impact assessment which will be commissioned to a third party. While the detailed scope of the assessment will be further developed, it is expected that the assessment will involve data collection, at least twice in the course of the project at the baseline and end-line of a representative sample of households in the four prioritized communities in Monrovia. These surveyed households will include both the project target and non-target beneficiaries with controlled comparison of project impact at various levels. Adoption rate will also be measured with test of options to improve the rate of adoption of some of the interventions. Importantly, the outcome of interest in this assessment includes the changes in productivity; access to alternative livelihoods, fishing activities; importance of cold storages and the extent to which climate information influences households such as use of mangroves and settlement planning. The execution of activities such as livelihood options, co-management of mangroves, climate advisory services that are disseminated to a larger population could possibly permit investigation of impacts of these three interventions independently as well as in combination (the feasibility to be confirmed). With a higher number of vulnerable households than the project can serve, there will be potential to objectively select who will receive the program and who will not. This will be based on vulnerability and need at the beginning of the project with a phase-in design because the program may not be rolled out within one year. Moreover, this assessment will make use of satellite data to assess the changes in settlement patterns, the efficacy of the revetment and reduced rate of mangrove degradation etc. before and after interventions.
182. The UNDP Country Office will include the planned project evaluations in the UNDP Country Office evaluation plan, and will upload the evaluation report in English and the management response to the public UNDP Evaluation Resource Centre (ERC) (www.erc.undp.org).
183. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations.
184. A detailed M&E budget, monitoring plan and evaluation plan will be included in the UNDP project document.
185. Monitoring, reporting and evaluation arrangements will comply with the relevant GCF policies and Accreditation Master Agreement signed between GCF and UNDP.



F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

186. A summary of the identified risks to the proposed project's implementation and sustainability, associated impacts and mitigation measures are presented in the risk tables below. Overall, the risk assessment concludes that the proposed project's overall risk rating is low. However, this is predicated on successful mitigation, particularly with regards to amending governmental practices to ensure project effectiveness.

Table 3. Risk matrix¹⁴³.

		Impact			Risk	
		Low	Medium	High	Very Low Risk	Low Risk
Likelihood	Low	1	1	2	3	Medium Risk
	Medium	2	2	4	6	High Risk
	High	3	3	6	9	Extreme Risk

187. Selected Risk Factors were assessed according to the risk matrix (Table 3), initially without and then with mitigation measures being undertaken to express the baseline risk and mitigated risk. These results are shown in Table 4 below.

Table 4. Project risk factors and mitigated risks.

Factor #	Likelihood	Impact	Risk	Mitigation Potential	Mitigated Risk
1	Medium	Low	Low Risk	High	Very Low Risk
2	Low	Medium	Low Risk	High	Very Low Risk
3	Medium	Medium	Medium Risk	Medium	Low Risk
4	High	High	Extreme Risk	Medium	High Risk
5	Low	Medium	Low Risk	Medium	Very Low Risk
6	Medium	High	High Risk	High	Low Risk
7	Medium	High	High Risk	High	Low Risk
8	Low	Medium	Low Risk	High	Very Low Risk
9	High	Low	Medium Risk	High	Very Low Risk
10	Medium	Low	Low Risk	High	Very Low Risk
11	Medium	High	High Risk	High	Low Risk
12	Medium	Medium	Medium Risk	High	Low Risk
13	Low	Low	Low Risk	High	Very Low Risk
14	High	High	Extreme Risk	Medium	Medium Risk

188. Factor 4 (governance) is essential to the overall success of the project but presents the highest risk (Table 4). Commitment to effective land use planning by the GoL is therefore critical to ensure that this risk is mitigated. Factor 14 — Land Tenure infringement — is also noted as an Extreme Risk. Government structures will need to support the project in addressing these concerns and mitigate the risk to medium.

Selected Risk Factor 1

Category	Probability	Impact
Technical and operational	Medium	Low
Description		

Inadequate engagement with local-level stakeholders and project partners. This may occur as a result of insufficient coordination between implementing agencies during project implementation and/or limited integration of local knowledge into project activities.

Mitigation Measure(s)

- The project design has involved extensive engagement with local stakeholders to ensure support for project activities.
- Extensive engagements with project partners, other agencies operating in the area and stakeholders will continue during project implementation.
- Project implementation activities will build on and/or draw from existing local committees, groups, systems and procedures to ensure local stakeholder participation.

Selected Risk Factor 2

¹⁴³ United Nations Office for Disaster Risk Reduction. 2017. National Disaster Risk Assessment, Governance System, Methodologies, and Use of Results.



Category	Probability	Impact
Technical and operational	Low	Medium

Description

Inadequate incorporation of gender sensitivity as well as social safeguards considerations and livelihoods into the implementation of the project activities. The management structures and systems may have adverse impacts on gender equality and may reproduce discrimination based on gender.

Mitigation Measure(s)

- A Gender Assessment and Action Plan (Annex 8) has been developed and will be implemented to ensure that gender equality is central to all interventions.
- Activity design will include the full participation of women in consultations and capacity development and be sensitive to gender vulnerability disparities in all decision-making. The project design will consider the livelihood capacity development of women in the fishing industry and in the local communities.
- A Social Management Plan as part of the ESMP has been designed based on a detailed screening process. The ESMP provides a framework for ensuring that project activities do not have a negative impact on the environment or local communities (Annex 6).

Selected Risk Factor 3

Category	Probability	Impact
Governance	Medium	Medium

Description

The failure to commit and provide the co-financing commitment from "new money" or sustainable "payment-in-kind" for project development resulting in funds from other fundamental services/development being compromised.

Mitigation Measure(s)

UNDP has committed to providing co-financing for the project and has worked with the GoL to identify further sources of co-financing and in-kind activities. The availability of in-kind co-finance for Activity 1.2 in the form of rock materials has been verified by the GoL and UNDP.

Selected Risk Factor 4

Category	Probability	Impact
Governance	High	High

Description

The long-term project success requires a commitment to coastal and land-use planning policies and actions to safeguard communities/infrastructure. It is also necessary to ensure that there is no overlap and/or misalignment between project activities and other actions in the MMA.

Mitigation Measure(s)

- The project has been designed with extensive stakeholder engagement at all levels of government and affected parties to ensure that there is synergy between project activities and any past and ongoing initiatives in the MMA.
- Regular meetings will be held between the GoL and relevant individuals/organisations responsible for the management of the project. This will ensure that future projects or initiatives are aligned with the project's interventions.
- Government commitment to address land tenure arrangements during project implementation in coastal and tidal areas agreed as a condition of the project. This will include a commitment to new legal instruments and enforcement where necessary.

Selected Risk Factor 5

Category	Probability	Impact
Governance	Low	Medium

Description



Changes in political leadership or focus could result in delays in project implementation or even abandonment of some activities. Additionally, turnover of government staff may impede capacity building, the retention of skills and knowledge, and knowledge management across the relevant institutions to ensure coastal and land use policy and actions are aligned with sustainable practices.

Mitigation Measure(s)

- Regular engagement with non-political actors – such as government agency officials, staff and local community members – will be prioritised during project implementation. In so doing, knowledge regarding the project planning and implementation processes will be shared amongst a number of individuals who can hold the implementing agencies accountable for delivery in the case of key individuals leaving their respective organisations.
- The formulation of local ordinances, mainstreaming of project interventions into local planning and budgeting systems and establishment of accountable centres/offices will ensure that political changes will have negligible impact on the sustainability of project interventions.

Selected Risk Factor 6

Category	Probability	Impact
Governance	Medium	High

Description

Corruption (at any level) hampers activities and the delivery of outputs and risks project cost escalation or delivery overrun.

Mitigation Measure(s)

- The UNDP Country Office will support implementation and provide oversight to minimise the risk of corruption. The overall risk level assessed for this project using UNDP's Partner Capacity Assessment Tool (PCAT) is "low." The PCAT is used in conjunction with the Harmonized Approach to Cash Transfers (HACT), undertaken by an independent third party for every UNDP Programme Cycle (every 4 years), accompanied by regular spot checks and specific project audits (annual in the case of this GCF project). UNDP has undertaken a HACT micro-assessment of the Environmental Protection Agency (EPA) to assess the risks associated with the entity as an Executing Entity (EE) in Liberia. The micro-assessment provides an overall assessment of the EE's programme, financial and operations management policies, procedures, systems and internal controls. In addition to the HACT micro assessment, and as part of this project, UNDP Country Office will undertake the following actions to detect and address any issue related to the risks identified in the project: i) Spot checks will be carried out once every year by an external independent party and by UNDP; ii) NIM Audit – A project audit will be undertaken annually as budgeted for under this project; and iii) Review of annual work-plans to ensure that the planned expenditures are in line with the budgeted project activities.

Selected Risk Factor 7

Category	Probability	Impact
Governance	Medium	High

Description

Government officials and local communities do not take ownership of the project's community-based interventions. This could lead to limited commitment by communities to achieve the project outcomes and objectives, as well as limited sustainability of project interventions after the project.

Mitigation Measure(s)

- Stakeholder engagement is essential to community ownership and will enable communities to be involved in the planning of the project and the ongoing positive benefits.
- Target communities will be active participants in the design and implementation of interventions focusing on improving the resilience of climate-sensitive livelihoods and supporting CBNRM. Social marketing and awareness-raising campaigns will be developed to promote community support of the project activities. These strategies will be developed to ensure all community members understand and benefit from the establishment of the community education and innovation centre and the activities associated with them.

Selected Risk Factor 8

Category	Probability	Impact



Technical and operational	Low	Medium
Description		
<i>International experts/consultants/developers do not perform according to expectations.</i>		
Mitigation Measure(s)		
• The services of consultants and contractors will be procured as per the guidelines in the UNDP manual. This will ensure that only suitably qualified applicants are contracted for project activities.		
• The UNDP Country Office will have an active role in project oversight ensuring that standards are not compromised in any aspect of the project.		
Selected Risk Factor 9		
Category	Probability	Impact
Technical and operational	High	Low
Description		
<i>Limited long-term operations and maintenance of hard interventions to effectively combat coastal erosion.</i>		
Mitigation Measure(s)		
• Initial local consultations concluded that maintenance of hard structure interventions was unlikely to be undertaken regularly or appropriately given budget and capacity constraints of local authorities. The designs of the revetments and groyne were done with this limitation in mind and are intended to function as designed for a minimum of 50 years.		
• Operations and Maintenance costs are estimated to average ~USD50,000 per year (Annex 21: Operations and Maintenance Plan). The ICZMP process is intended to address the institutional responsibilities and budgets for its implementation, including the maintenance of the coastal defence structures. The ICZMP itself and the institutional responsibilities associated will be endorsed at the highest level of government as part of the government policy processes.		
Selected Risk Factor 10		
Category	Probability	Impact
Technical and operational	Medium	Low
Description		
<i>Extreme ocean weather events/hazards could negatively affect or delay project on-the-ground project interventions.</i>		
Mitigation Measure(s)		
• The revetment and groyne material will be resilient to most weather and ocean conditions.		
• The final construction plan will incorporate careful planning of activities informed by ocean conditions, weather and climate briefs. Interventions will be scheduled in conjunction with this forecasting information to reduce the potential for extreme weather events to negatively affect the implementation project interventions.		
Selected Risk Factor 11		
Category	Probability	Impact
Technical and operational	Medium	High
Description		
<i>The potential unintended environmental and dynamic changes to shore and nearshore sediment erosion and deposition as a result of physical coastal interventions.</i>		
Mitigation Measure(s)		
• An Environmental and Social Assessment Report (Annex 6) has been developed to specifically mitigate the potential changes that may result from the implementation of coastal physical interventions.		
Selected Risk Factor 12		



Category	Probability	Impact
Technical and operational	Medium	Medium
Description		
<i>Inadequate incorporation of environmental safeguard considerations into the implementation of the project activities as well as its management structures and systems. The scale of pollution in the creeks, estuaries and mangrove swamps around Monrovia proves too extensive for control by existing agencies.</i>		
Mitigation Measure(s)		
<ul style="list-style-type: none"> An Environmental Management Plan has been designed based on a detailed screening process. This will provide a framework for ensuring that project activities do not have a negative impact on the environment. Project design will include surveys of drainage and pollution sources, focussed on identifying curable problems to be addressed by the project, with others raised for longer-term action by the authorities. 		
Selected Risk Factor 13		
Category	Probability	Impact
Reputational	Low	Low
Description		
<i>Project might involve temporary or permanent and full or partial physical displacement.</i>		
Mitigation Measure(s)		
<ul style="list-style-type: none"> The project has been designed to avoid physical displacement. Should it prove to be necessary for a small number of people, then a full UNDP- (and IFC-) compliant resettlement approach will be used. 		
Selected Risk Factor 14		
Category	Probability	Impact
Governance	High	High
Description		
<i>Project development may infringe on land tenure arrangements in marginal coastal areas.</i>		
Mitigation Measure(s)		
<ul style="list-style-type: none"> The GoL has committed to address land tenure arrangements in coastal and tidal areas. This will include a commitment to new legal instruments and enforcement where necessary. Adopting the ICZM approach and developing the ICZMP with a specific section dedicated to coastal land tenure regulation in high-risk areas will serve to mitigate this risk. The above-mentioned component of the ICZMP will be fully aligned with the World Bank-funded land use masterplan for Monrovia currently under development¹⁴⁴. Project design will support government actions by including messages on land tenure in its community awareness raising programmes. Project design will also include support to government agencies through its capacity strengthening programme. 		
Selected Risk Factor 15		
Category	Probability	Impact
Technical and Operational	Low	High
Description		

¹⁴⁴ The enforcement of the ICZMP will not be specifically dependent on the wider adaptation policy development processes supported by the World Bank project. Alignment and collaboration will rather ensure that there is no duplication of efforts, and that stakeholders, especially communities, are clear on the two processes.



Construction of coastal protection measures has the unintended consequence of exacerbating existing flood risk in West Point

Mitigation Measure(s)

- The revetment at West Point has been designed to armour the vulnerable shoreline and fix it in place. The revetment will use porous materials, a permeable design and include a drainage system to enable water to drain through the structure into the sea, rather than creating a levee which would contain flood water.
- During the development of the detailed design and construction plan, a site-specific hydrological model of West Point will also be used to assess the impact of the revetment on existing localised flooding and mitigate this risk by enabling the design of adequate drainage capacity.

Other Potential Risks in the Horizon

- Currency fluctuations (both nationally and internationally) could negatively influence the project's budget, including the implementation costs. This may result in: i) suboptimal and incomplete implementation; and ii) a reduction in sustainability and upscaling potential.
- Project development might be delayed by the COVID-19 pandemic as national and regional responses to the pandemic may involve restrictions including lockdowns. The project and its personnel will abide by all rules and regulation mandated by the Government of Liberia in response to COVID-19. Project staff will take additional precautions to ensure that stakeholders and beneficiaries are not exposed to and that project activities do not in any way, allow spreading of the virus. Awareness among project staff and stakeholders, including communities will be embedded in all interactions. Project staff will distribute awareness materials and personal protective gear that is made available by parallel efforts in the region. If and when possible, project staff and consultants who require movement between regions and internationally will immunise themselves.



G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

189. The environmental and social risk associated with the project was evaluated in accordance with GCF's Environmental and Social Safeguards (ESS) as well as UNDP's Social and Environmental Standards (SES). The project is considered to be Category B or Medium Risk (GCF ESS) and Moderate Risk (UNDP risk category). This initial categorisation was determined during the PPF-financed Feasibility Study conducted from 2018–2019. UNDP's Social and Environmental Screening Procedure (SESP) and the Environmental and Social Assessment Report (ESAR) developed for the project substantiate this categorisation. The ESAR complies with the broad ESS requirements of the GCF and includes an Environmental and Social Management Plan (ESMP). It is, however, important to note that the ESAR is an interim report and in order to comply with national legislation, an Environmental and Social Impact Assessment (ESIA)¹⁴⁵ will need to be conducted and approved by the EPA — as the environmental authority in Liberia — prior to the implementation of Activity 1.2. The primary environmental and social risks that may be associated with the project — as identified by the ESAR — are presented below.

Environmental impacts

190. Overall the project is likely to result in some negative environmental impacts. These impacts are, however, expected to be temporary and mitigated effectively through appropriate management measures. During the construction phase of Output 1, substantial earthworks will need to take place along the West Point beachfront. Potential negative impacts that are associated with the establishment of coastal infrastructure include local changes in water quality in the short-term as well as a shift in sediment transport patterns in the long-term. Additionally, there are inherent pollution risks¹⁴⁶ associated with the use of earth-moving equipment in coastal environments. These risks have, however, been accounted for in the ESAR and ESMP, and appropriate risk mitigation procedures will be included in the Terms of Reference for contractors. In addition, any long-term shifts in sediment transport patterns are expected to exhibit minor impacts on a local scale as a result of an existing perpendicular breakwater associated with the port of Monrovia.

Social impacts

191. Two main social risks were identified during the Feasibility Study as a result of the construction of a revetment at WestPoint — and an associated loss of beach areas — both of which have been mitigated through an adaptive design process. These include impacts on: i) social cohesion, that will occur because of reduced access to community land used for domestic purposes, bathing and socialising; and ii) fishing livelihoods, which will occur because of a reduction of available locations for the launching fishing boats and the processing of fish. The current design for the revetment includes a green promenade with associated amenities that will be available to be used as community space and for the processing of fish. Additionally, the design will incorporate at least two protected beach areas to act as boat launching and landing sites and associated boat storage space, which will allow fishermen and community members to continue access the bay.

192. No further potential negative social impacts have been identified as a result of the other activities under the project, which are expected to yield a range of social benefits, including strengthened livelihoods, food security and mangrove areas as well as the protection of homes and infrastructure. It should be further noted here that resettlement, land acquisition and any potential impacts on Indigenous People have been investigated and will not occur under the project.

Grievance Redress Mechanism

193. A Grievance Redress Mechanism (GRM) and Complaints Register (CR) have been developed for this project and are described in detail in the ESMP. These two mechanisms are compatible with Liberian legislation and compliant with UNDP and GCF standards and will allow any project stakeholders who have a complaint or feel aggrieved by the project to communicate their concerns and/or grievances through an appropriate process. The GRM and CR will be used at all stages of the project and will provide an accessible, rapid, fair and effective response to concerned stakeholders, especially any vulnerable groups who may lack access to formal legal systems or support.

¹⁴⁵ The Ministry of Mines and Energy will be responsible for obtaining the permit, as the Responsible Party for Activities 1.1 and 1.2.

¹⁴⁶ A number of pollution risks are associated with the use of earth moving vehicles and construction of large-scale infrastructure, including synthetic pollutants, organic waste and construction debris. Further details on potential pollutants are provided in the ESAR (Annex 6).

**G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)**

194. A gender assessment and action plan — in line with the objectives of the GCF's Gender Policy and gender guidelines — has been developed by UNDP to inform the design of the proposed project (Annex 8). The document was based on 24 field consultations, as well as available data from studies conducted by the GoL, UN agencies, civil society organisations (CSOs), donor agencies and multilateral development banks.
195. The gender assessment shows that gender inequality persists in Liberia, largely due to patriarchal norms that maintain women's low status and the legacy of violence against women during the civil wars¹⁴⁷. The country has a low Gender Development Index (GDI), ranking 177 out of 188 countries in 2018. Gender gaps in human development between men and women are evident in *inter alia*: i) mean years of education — 3.5 years for women and 6.1 years for men; ii) mean income — USD 577 for women and USD 755 for men; and iii) levels of adult HIV — 2.4% for women and 1.8% for men¹⁴⁸. The burden of family care imposed upon women through the socio-cultural allocation of gender roles restricts their livelihood options, which suggests why approximately 90% of women are employed in the informal sector¹⁴⁹. This high participation of women in the informal sector limits their social safety nets to adapt to the impacts of climate change.
196. As a result of these gender roles and inequalities, women in Liberia are more vulnerable than men to coastal erosion which causes the destruction of infrastructure, loss of property, displacement, decreases in income, as well as rises in insecurity and gender-based violence. Additionally, coastal erosion contributes to increased gender inequalities by exacerbating the challenges women already face such as family care and food insecurity. For example, stakeholder meetings held in Monrovia from March to April 2019 revealed that women play a central role in the informal fishing sector. Representing 60% of the fishing community, women are mostly involved in drying and selling fish while men are predominantly involved in fishing. Since women sell the fish, they carry the weight of economic fluctuations related to fish stock and quality — both impacted by climate change.
197. From the findings of the gender assessment, a gender action plan (GAP) for the project was developed to ensure gender is mainstreamed in project design and implementation. In particular, the GAP recommends that a women's empowerment approach is employed in the design and implementation of the project, increasing women's skills and economic opportunities. By increasing the climate-resilience of Monrovia's fishing community, the project intentionally targets and benefits women — and by extension, their families and communities. All activities, training and stakeholder consultations under the project will be conducted in a gender-sensitive manner and encourage women's active participation. Activities will contribute to women's empowerment through upskilling of women's groups to pursue climate-resilient and sustainable livelihoods in the Mesurado mangroves, as well as through women's active participation in the mangroves' management. This empowering approach, combined with gender-sensitive activities and stakeholder consultations, will contribute to reducing the gender gap of social, economic and environmental vulnerabilities to climate change in Monrovia.
198. In project-level implementation arrangements, a Gender Specialist will be posted to the Project Management Unit to provide advice and quality assurance oversight, conduct capacity building and to monitor the implementation of gender-related activities and gender-sensitisation. The collaborative relationship between this specialist, UNDP, the Environmental Protection Agency, the Center for all Disasters Management, the Ministry of Gender, Children and Social Protection, and local NGOs will create the cross-sectoral technical perspectives required to ensure the success of this gender-sensitive approach in the project.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

199. The financial management and procurement of this project will be guided by UNDP financial rules and regulations available [here](#).
200. UNDP has comprehensive procurement policies in place as outlined in the 'Contracts and Procurement' section of UNDP's Programme and Operations Policies and Procedures (POPP). The policies outline formal procurement standards and guidelines across each phase of the procurement process, and they apply to all procurements in

¹⁴⁷ Republique of Liberia. 2018. Programme Against Sexual and Gender Based Violence and Harmful Traditional Practices.

¹⁴⁸ UNDP. 2018. Human Development Report.

¹⁴⁹ According to the 2008 report issued to the Committee on the Convention on the Elimination of All forms of Discrimination against Women (CEDAW).



UNDP. The project will be implemented following the National Implementation Modality (NIM) following NIM guidelines available [here](#).

201. The UNDP Enterprise Risk Management (ERM) Policy identifies 'Capacities of the Partners' as a key Strategic Risk to be managed for the success of UNDP's work. The Partner Capacity Assessment Tool ([PCAT](#)) was designed to assess the level of risk that is present when UNDP works with Partners to implement programmes and projects. The level of risk is identified by analysing partner capacity and matching project management and oversight with the level of risk assessed. By identifying areas for capacity improvement, the PCAT should also help to reduce future Partner risk levels if the capacity building actions are implemented and sustained. The Partner Capacity Assessment is conducted for all projects and covers executing entities, responsible partners, grant recipients and other partners to ensure that the proposed project partners are not a prohibited organization and do not engage in practices that are inconsistent with UNDP's social & environmental standards and code of ethics.
202. UNDP will ascertain the national capacities of the executing entities by undertaking an evaluation of capacity following the Framework for Cash Transfers to Executing Entities (part of the Harmonized Approach to Cash Transfers - [HACT](#)). All projects will be audited following the UNDP financial rules and regulations noted above and applicable audit guidelines and policies.

G.4. Disclosure of funding proposal

No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.



H. ANNEXES

H.1. Mandatory annexes

- Annex 1 NDA No-objection letter(s)
- Annex 2 Feasibility study - and a market study, if applicable
- Annex 3 Economic and/or financial analyses in spreadsheet format
- Annex 4 Detailed budget plan
- Annex 5 Implementation timetable including key project/programme milestones
- Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
 - Environmental and Social Impact Assessment (ESIA) or
 - Environmental and Social Management Plan (ESMP) or
 - Environmental and Social Management System (ESMS)
 - Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.)
- Annex 7 Summary of consultations and stakeholder engagement plan
- Annex 8 Gender assessment and project/programme-level action plan

- Annex 9 Legal due diligence (regulation, taxation and insurance)
- Annex 10 Procurement plan
- Annex 11 Monitoring and evaluation plans
- Annex 12 AE fee request
- Annex 13 Co-financing commitment letter, if applicable
- Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

- Annex 15 Evidence of internal approval
- Annex 16 Map(s) indicating the location of proposed interventions
- Annex 17 Multi-country project/programme information
- Annex 18 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- Annex 19 Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
- Annex 20 First level AML/CFT (KYC) assessment
- Annex 21 Operations manual (Operations and maintenance)
- Annex x Other references

* Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.