

Funding Proposal

FP208: Enhanced climate resilience in the Trois-Rivières region of Haiti through Integrated Flood Management

Haiti | United Nations Development Programme (UNDP) | Decision B.36/05

3 August 2023



Contents

Section A	PROJECT / PROGRAMME SUMMARY
Section B	PROJECT / PROGRAMME INFORMATION
Section C	FINANCING INFORMATION
Section D	EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA
Section E	LOGICAL FRAMEWORK
Section F	RISK ASSESSMENT AND MANAGEMENT
Section G	GCF POLICIES AND STANDARDS
Section H	ANNEXES

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]”

PROJECT/PROGRAMME SUMMARY				
A.1. Project or programme	Project	A.2. Public or private sector	Public	
A.3. Request for Proposals (RFP)	<p>If the funding proposal is being submitted in response to a specific GCF Request for Proposals, indicate which RFP it is targeted for. Please note that there is a separate template for the Simplified Approval Process and REDD+.</p> <p><u>Not applicable</u></p>			
A.4. Result area(s)	<p>Check the applicable GCF result area(s) that the <u>overall</u> proposed project/programme targets below. For each checked result area(s), indicate the estimated percentage of GCF and Co-financers' contribution devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.</p>			
		GCF contribution	Co-financers' contribution¹	
	Mitigation total	<u>Enter number</u> %	<u>Enter number</u> %	
	<input type="checkbox"/> Energy generation and access	<u>Enter number</u> %	<u>Enter number</u> %	
	<input type="checkbox"/> Low-emission transport	<u>Enter number</u> %	<u>Enter number</u> %	
	<input type="checkbox"/> Buildings, cities, industries and appliances	<u>Enter number</u> %	<u>Enter number</u> %	
	<input type="checkbox"/> Forestry and land use	<u>Enter number</u> %	<u>Enter number</u> %	
	Adaptation total	<u>Enter number</u> %	<u>Enter number</u> %	
	<input checked="" type="checkbox"/> Most vulnerable people and communities	20 %	50 %	
	<input checked="" type="checkbox"/> Health and well-being, and food and water security	20 %	50 %	
	<input type="checkbox"/> Infrastructure and built environment	<u>Enter number</u> %	<u>Enter number</u> %	
	<input checked="" type="checkbox"/> Ecosystems and ecosystem services	60 %	<u>Enter number</u> %	
A.5. Expected mitigation outcome (Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)		A.6. Expected adaptation outcome (Core indicator 2: direct and indirect beneficiaries reached)	Total beneficiaries: 733,872	
			Direct beneficiaries: 292,600 people	Indirect beneficiaries: 441,272 people
			Approximately 3 % of total population ²	Approximately 4% of the total population
A.7. Total financing (GCF + co-finance³)	31,290,561.48 USD	A.9. Project size	Small (Upto USD 50 million)	
A.8. Total GCF funding requested	<u>22,427,206.48 USD</u> For multi-country proposals, please fill out annex 17.			

¹ Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal. 31,

A.10. Financial instrument(s) requested for the GCF funding	<i>Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.</i>		
	<div> <input checked="" type="checkbox"/> Grant 22,427,206.48 <input type="checkbox"/> Equity <u>Enter number</u> </div> <div> <input type="checkbox"/> Loan <u>Enter number</u> <input type="checkbox"/> Results-based payment <u>Enter number</u> </div> <div> <input type="checkbox"/> Guarantee <u>Enter number</u> </div>		
A.11. Implementation period	8 years	A.12. Total lifespan	25 Years
A.13. Expected date of AE internal approval	<i>This is the date that the Accredited Entity obtained/will obtain its own approval to implement the project/ programme, if available.</i> 7/23/2021	A.14. ESS category	<i>Refer to the AE's safeguard policy and GCF ESS Standards to assess your FP category.</i> B
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 type="checkbox"/> No <input checked="" 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 Executing Entity for the project is Haiti's Ministry of Environment (MoE). The Ministry is also the office designated as the NDA on behalf of the Government of Haiti to the GCF.		
A.21. Executive summary (max. 750 words, approximately 1.5 pages)			
<ol style="list-style-type: none"> As a Small Island Developing State (SIDS) and the only Least Developed Country (LDC) in the Western Hemisphere, Haiti is one of the most vulnerable countries in the world to climate change. This vulnerability is compounded by high levels of poverty and longstanding macroeconomic challenges experienced in the country — with approximately 59% of Haitians living under the national poverty line of US\$2.41 per day and approximately 24% living under the national extreme poverty line of US\$1.23 per day. Haiti is particularly affected by the climate change impacts of increasing frequency and intensity of floods, tropical storms and hurricanes. Between 1975 and 2012, such climate change-related events resulted in 			

² Population estimated at 11,242,856 people per World Bank projections (based upon 2003 Census and taking into account population growth rates). Please note that 2003 is the latest official Census conducted by the Government of Haiti, hence population growth rates have been considered for the project

³ Refer to the Policy of Co-financing of the GCF.

damages and losses equivalent to 2% of the country's GDP on average per year. In 2004, one storm — Hurricane Jeanne — caused severe flooding in northern Haiti. The flooding caused by this storm resulted in approximately US\$41 million in damages, more than 2,800 deaths and the need to remove approximately 592,000 m³ of mud that clogged the drainage networks and infrastructure across the country. Since 2012, the impacts of climate change have continued to negatively affect the population of Haiti. For example, the Category 5 storm — Hurricane Matthew — that struck Haiti in 2016 caused widespread damages and economic losses and negatively affected more than 2 million people (20% of the country's population) primarily located in the poorest regions of the country. Specifically, Hurricane Matthew resulted in the deaths of 546 people, forced more than 175,500 people to seek refuge in shelters, disrupted schooling for more than 450,000 children, and led to more than 1.4 million people requiring immediate humanitarian assistance. The storm also inflicted economic damages and losses estimated at more than 22% of the country's GDP in that year (2016), including the losses of up to 90% of crops and livestock in some areas of the country. In addition, it caused a sharp increase in the number of cholera cases experienced throughout Haiti. The intense rainfall associated with extreme climate events such as Hurricane Matthew also leads to severe flooding, which exacerbates these associated negative impacts. Such high-impact flooding has been a regular occurrence in Haiti in recent decades. During the period 1993–2012, for example, Haiti experienced 31 floods, causing the deaths of approximately 2,870 people and adversely affecting approximately 9 million people through livelihood losses and personal damages. Of these flood events, 10 were directly attributed to hurricanes and a further 16 attributed to extreme rainfall events.

3. Projections under the RCP8.5 scenario simulate that climatic conditions contributing to flooding incidence are expected to become more prevalent in Haiti. Such conditions include more concentrated, intense rainfall as well as warming temperatures, which contribute to major storm development and exacerbate flood impacts. Furthermore, it is anticipated that a modest increase in the frequency of hurricanes and tropical storms affecting Haiti will be experienced in the future. A such watershed management actions have been prioritized within Haiti's National Adaptation Plans, prioritizing the Northwest and the Aribonite regions where Haiti's Trois-Rivieres (TR) watershed is located. The (TR) watershed is particularly vulnerable to the impacts of climate change-induced flooding and hence has been identified as the project's target area (see section 10.1 of the FS on its prioritization).
4. Although the TR watershed is not the largest watershed in the country, its population — located in six cities and three departments — is highly vulnerable to the impacts of climate change. TR watershed is prone to frequent flooding in the municipalities it crosses, with adverse effects particularly on poor communities who do not have sufficient resources to adequately respond. The rural areas of Trois-Rivières — such as Marmelade, Plaisance, Pilate, Gros-Morne, Bassin Bleu, Chansolme, and Port-de-Paix — are home to 80% of Haiti's population of extremely poor people. These areas have an extreme poverty rate of 40%, which is almost twice the national average of 23.9%, and much higher than any other area (for comparison, Port-au-Prince has an extreme poverty rate of 4.9%). In addition to the high rate of poverty, which inhibit communities from adapting and responding to climate impacts, the impacts of extreme climate events are being compounded by ecosystem degradation caused by unsustainable agricultural practices such as the increasing area under crop cultivation, and particularly the practice of leaving soil bare and exposed to extreme weather for most of the year.
5. Current agricultural practices, such as the increasing prevalence of annual crop cultivation, leave the soil bare and exposed to extreme weather for most of the year. During intense rainfall and storm events, the limited ground cover leads to increased surface runoff and consequently exacerbates soil erosion in the watershed. This erosion degrades soils, reducing agricultural productivity and necessitating the need for the expansion of agricultural land. The negative feedback loop created is further compounded by extensive deforestation in the mountainous parts of the watershed. This deforestation is primarily linked to charcoal production, with many farmers in the TR watershed resorting to charcoal production as an alternative livelihood in response to low yields, crop failure or unexpected expenses — particularly in extremely wet or dry years. As a result, most of the native forests have been harvested, with minimal effort towards reforestation activities. Given that the demand for charcoal in Haiti is high and is unlikely to decrease in the foreseeable future, charcoal production will likely continue to drive deforestation in the absence of alternative livelihood options.
6. Unsustainable land-use practices have radically changed the TR watershed's natural landscape, where the large-scale removal of tree cover for farming and charcoal production has decreased infiltration capacity of the soil and contributed to increased surface runoff during heavy rainfall events. This, in turn, has considerably increased flood frequency and intensity in the TR watershed, where floods wash away fertile soils, cause sedimentation of riverbeds and block drainage infrastructure. Given the near-complete absence of embankments and levees in the watershed, this cycle intensifies future flooding, leading to further destruction of crops, farmland and agricultural infrastructure, as well as the loss of livestock. Moreover, the erosion of

riverbanks and sedimentation build-up in rivers caused by flooding decreases water quality in the watershed considerably, leading to an increased risk of water- and vector-borne diseases.

7. At present, the Government of Haiti (GoH) has limited technical and financial capacity to fully address the impacts of climate change-induced flooding on the population of the TR watershed through domestic financing. This is highlighted by the fact that more than half of Haiti's national budget is accounted for by foreign aid. The existing high levels of public debt, combined with the urgent need to address poverty in the country, further constrains the GoH's capacity to invest in climate change adaptation. Consequently, the GoH is requesting GCF grant finance to initiate a paradigm shift towards climate-resilient flood management across seven target communes in the TR watershed (Port-de-Paix, Chansolme, Bassin Bleu, Plaisance, Pilate, Marmelade, Gros Morne). GCF finance will be combined with co-financing from Heifer International Haiti to transform the GoH's approach to addressing climate change-induced flood impacts on the watershed and population living nearby. This approach will involve shifting the current uncoordinated decision-making processes on flood management at the national and local levels towards an integrated approach to land and water resources management in the watershed. The proposed transformation of land and water resources management will be achieved by: i) implementing agroforestry systems and reforesting degraded landscapes at priority intervention sites in the TR watershed; ii) enhancing technical and institutional capacity for productive climate-resilient land management at the national and local levels; and iii) establishing the required governance framework for integrated water resources management (IWRM) to support the climate-resilient land management systems and facilitate sustainable use and management of water resources over the long term. This transformative approach the combined transformative effect of project interventions will incentivise sustainable land and water resources management in Haiti, while simultaneously promoting a shift towards the adoption and implementation of a climate-resilient, integrated approach to flood management that can be readily scaled up and replicated nationally, and across the Caribbean region.
8. Overall, the project will confer direct and indirect adaptation benefits to approximately 292,600 and 441,272 vulnerable people in Haiti, respectively. By implementing 17,740 ha of agroforestry systems and rehabilitating 7,700 ha of forests in priority areas in the TR watershed to address the impacts of climate change-induced flooding, the project will result in a more than 50% reduction in the number of households affected by 100-year flood events by restoring the ecosystems' capacity for water infiltration hence reducing land degradation. This reduction will be from 1,342 households at risk of flooding under the baseline scenario down to approximately 640 households with project interventions. Similarly, agroforestry and reforestation interventions under this project are expected to result in a 35% reduction in the number of households at risk to 20-year flood events in the TR watershed while providing the benefit of mitigating an estimated 3,636,750 tCO₂-e during the project's total 25-year lifespan.

PROJECT/PROGRAMME INFORMATION

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

Context

9. Haiti forms part of the Caribbean island Hispaniola, sharing a border with the Dominican Republic to the east. Hispaniola is the second-largest island in the Greater Antilles, and at 27,750 km², Haiti is the third-largest country in the Caribbean. As a Small Island Developing State (SIDS) and the only Least Developed Country (LDC) in the Western Hemisphere⁴, Haiti is exposed to multiple natural hazards, including hurricanes, floods, earthquakes, landslides and droughts⁵. Many of the country's primary economic activities⁶ (including agricultural production and industry), as well as more than 96% of the country's population of 11.1 million people⁷, are situated in areas that are at risk of being impacted by two or more of the hazards mentioned above. The vulnerability of the population is compounded by high levels of poverty and longstanding macroeconomic challenges experienced in the country⁸ — with approximately 59% of Haitians living under the national poverty line of US\$2.41 per day and approximately 24% living under the national extreme poverty line of US\$1.23 per day⁹.
10. The existing exposure and vulnerability to natural hazards are being exacerbated by the impacts of climate change, with Haiti ranking first on the Global Climate Risk Index and third on the Long-Term Climate Risk Index¹⁰. **Moreover, climate change impacts — particularly regarding floods, hurricanes and tropical storms — have considerable implications for health and livelihoods, as well as the local economy.** The Government of Haiti (GoH) has prioritised addressing the baseline socio-economic challenges facing the nation as well as funding disaster recovery, which has resulted in limited financial resources being available for long-term solutions to enhance climate resilience in the country.

Baseline scenario

11. Haiti is very mountainous, with more than 50% of the island at a steep slope of 40%¹¹ or more. While cities are mostly located in the coastal plains, much of the most productive land is located along steep mountainsides. As a result, agricultural production mainly occurs in these mountainous areas. Soil conditions in the country are intrinsically fragile, comprised of newly formed shallow soils that can support forests and grasslands but that are also susceptible to erosion and leaching of water-soluble nutrients. The location of arable land, combined with the fragile soil conditions in the country, increases erosion along the mountainous slopes of Haiti. For example, in 1999, soil erosion in Haiti was estimated at a total of 36 million tonnes, or 1,319 tonnes per km²/year.^{12,13} This erosion, combined with the steep topography of the country, has severe consequences for some of the country's most populous cities which are situated in valleys along the coast. When it rains, the steep hills in the upper reaches of the valleys channel rainwater towards urban areas. Given the widespread degradation of the watersheds and the associated surface runoff and erosion, the resulting floodwaters contain substantial sediment loads which are deposited downstream. These sediments block already limited drainage infrastructure in the urban areas, which, coupled with the intensity of rainfall events, creates an environment conducive to intense flooding.
12. The conditions mentioned above are particularly evident in the Trois-Rivières (TR) watershed — one of the largest and most productive watersheds in the country. The TR watershed, which includes the Aribonite, Nord (hereafter "North") and Nord Ouest (hereafter "Northwest") Departments, is the third-largest in the country, covering 896 km². Originating in the Massif du Nord mountain range and Artibonite Departments, the TR watershed has steep topography, with its highest elevation at 1,167 m above sea level and its lowest elevation at the watershed's discharge site into the Atlantic Ocean. The TR watershed is particularly important to the country in that it provides critical ecosystem goods and services (including aquifer recharge), as well as contributing to food security through

⁴ UN Office of the High Representative for The Least Developed Countries, Landlocked Developing Countries and Small Island Developing States. Available at: <http://unohrrls.org/about-lidcs/about-lidcs/>

⁵ Global Facility for Disaster Reduction and Recovery (GFDRR). Available at: <https://www.gfdr.org/en/haiti>.

⁶ which contribute approximately 56% of the country's GDP

⁷ World Bank data. 2018.

⁸ Further information on the country's financial challenges are presented in Section B.5 of the Funding Proposal, and specific details on these challenges can be found at the following reference: International Monetary Fund. 2019. Haiti. IMF Country Report number 20/121.

⁹ Haiti Overview: World Bank. Available at: <http://www.worldbank.org/en/country/haiti/overview>.

¹⁰ GermanWatch, Global Climate Risk Index 2016. Available at: <https://germanwatch.org/fr/download/13503.pdf>.

¹¹ Slope is expressed as a percentage, whereby the percentage indicates the vertical distance divided by the horizontal distance of a land area.

¹² Kulkarni C: The Implications of Composting Toilets for Nitrogen Flows in Haiti. Final Report. 2009, Providence: Brown University Centre for Environmental Studies.

¹³ Jolly CM, Shannon DA, Bannister M, Flaurentin G, Dale JZ, Binns A, Lindo P: Income efficiency of soil conservation techniques in Haiti. Proceeding of the 26th West Indies Agricultural Economics Conference: July 2007; St. Augustine, Trinidad and Tobago. Edited by: Neela Badrie. 2007, 156-163.: Caribbean Agro-Economic Society.

its high potential for agricultural production and opportunities for economic development^{14,15}. These factors have led to the watershed becoming one of the most densely populated parts of Haiti, with an estimated population of approximately 628,800 people — most of whom depend on agriculture for their livelihoods. While the TR watershed has numerous opportunities for livelihood security and economic growth, the watershed is also among the most vulnerable to the impacts of flooding caused by intense, concentrated rainfall and storms.

Climate Rationale

13. As a Caribbean SIDS and LDC, Haiti is one of the most vulnerable countries in the world to climate change, including increases in the frequency and intensity of flooding, tropical storms and hurricanes. The impact of climate change-induced flooding, in particular, is already adversely affecting Haiti's population that is already highly exposed. These impacts are particularly notable for the agricultural sector, which is highly vulnerable to flooding and which makes a considerable contribution to GDP (approximately 21.5%) and employment (approximately 40% of the country's population is dependent on crops, livestock, and fisheries for income and livelihoods) in the country.
14. Limited data is available on the historical extent and frequency of floods in Haiti. However, given the nature of watersheds in Haiti – including the targeted TR watershed – major hurricane events generally result in extensive flooding. Over the last 30 years (1990-2020), the number of categories 3, 4 and 5 hurricanes have increased significantly compared to the previous 30 years (period 1959-1989)^{16,17}. This illustrates an increase in the frequency of extreme events in the Atlantic basin and therefore the corresponding increasing trend in flooding in Haiti over the last 30 years.
15. Impacts from flooding after storms and hurricanes have already been experienced by much of Haiti's population. In the aftermath of Hurricane Jeanne in September 2004, for example, hillside erosion caused by flooding led to widespread destruction of crops as gravel was deposited onto the farmers' fields. As a result, approximately 80% of the land area in Gonaïves was flooded for three days, along with approximately 30% of land in Port-de-Paix¹⁸. The deposited gravel also made cultivation difficult for all affected areas in the aftermath of the storm. Thousands of people died or went missing during the resulting floods. Under future climate change conditions, it is expected that both small-scale subsistence farming and larger, commercial agricultural operations that contribute considerably to Haiti's overall GDP are likely to be increasingly impacted by climate change-induced flooding^{19,20,21}.
16. Such adverse impacts of climate change on the livelihoods of vulnerable communities are already being experienced frequently in Haiti. During the period 1993–2012, for example, Haiti experienced 31 floods²², 10 of which were directly attributed to hurricanes and a further 16 attributed to extreme rainfall events since 2000²³. Combined, these flood events caused the deaths of approximately 2,870 people and adversely affected approximately 9 million people through livelihood losses and personal damages. In 2004, for example, Hurricane Jeanne caused flooding in the northern part of Haiti that resulted in more than 2,800 deaths, approximately US\$41 million in damages and the need to remove approximately 592,000 m³ of mud that clogged drainage networks and

¹⁴ through investment in agroforestry systems, such as planting fruit trees, which have proven long-term economic benefits in the country

¹⁵ Priority watersheds: Trois-Rivières (code 3); Bassin du Limbé (5); Cap Haïtien (6); Trou du Nord (8a); Jassa (8c); La Quinte (9); Saint Marc (12a); Montrouis (12b); Cabaret (12c); Cul de Sac (13); Fond Verrettes (14); Rivière Froide (15a); Momance (15b); Belle Anse (16b); Marigot (16c); Gde. Rivière de Jacmel (17); Cavaillon (20); Les Cayes (21); Grande Anse (24); Gde. Rivière de Nippes (27); Petit Goave (28b). Smith Scot E. and Hersey Daniel. 2008. Analysis of Watershed Vulnerability to Flooding in Haiti.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.388.1772&rep=rep1&type=pdf>.

¹⁶ By analyzing the data from coast.NOAA.gov/hurricanes and www.wunderground.com/hurricane/archive for category 3 to 5 hurricanes originating in the Atlantic basin.

¹⁷ Over the period 1959–1989, the following numbers of hurricanes occurred:

Category 5: 10

Category 4: 24

Category 3: 26

For the period 1990–2020, the following occurred:

Category 5: 17

Category 4: 44

Category 3: 36

¹⁸ Dartmouth Flood Observatory. 2005. 2004 global register of major flood events. Available at: http://www.dartmouth.edu/approximately_floods/Archives/2004sum.htm

¹⁹ World Bank. 2011. Vulnerability, Risk Reduction, and Adaptation to Climate Change: Haiti. Available at: http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb_gfdr climate change country profile for HTI.pdf

²⁰ USAID. 2017. Climate Risk Profile: Haiti. Available at: https://www.climate-links.org/sites/default/files/asset/document/2017_Cadmus_Climate-Risk-Profile_Haiti.pdf

²¹ Centro Internacional de Agricultura Tropical. 2013. Prediction of the impact of climate change on coffee and mango growing areas in Haiti. Available at: http://dapa.ciat.cgiar.org/wp-content/uploads/2014/03/CC_impact_coffee-mango_Haiti_CRS-CIAT_final.pdf

²² The World Bank. 2018. Resilient Productive Landscapes in Haiti (P162908).

²³ which are directly attributed to hurricanes and tropical storms.

infrastructure across the country²⁴. The impacts of Hurricane Jeanne exacerbated the effects of torrential rains experienced earlier in May of the same year, which caused the death or disappearance of more than 4,000 people in Haiti.

17. In 2008, four tropical storms – including two hurricane level storms – hit Haiti in a period of less than 30 days, with significant impacts on the TR watershed. These storms included: i) Tropical Storm Fay, August 15-16; ii) Hurricane Gustav, August 25-28; iii) Tropical Storm Hanna, September 1 to 4; and iv) Hurricane Ike, September 5 to 8). The combined impact of these four successive storms was immense, with 7.8% of the population, or nearly 800,000 people directly affected including 40,000 people living in temporary shelters 2 months after the last storm. Approximately 159,950 hectares of agricultural land was impacted, of which ~104,310 ha was considered damaged, with the department of Artibonite most affected. These damages were exacerbated by the lasting impacts of the 2007 hurricane season, which resulted in breaches of waterways that facilitated the entry of water into the cities of the departments of Artibonite, Centre and South. The cost damages from the storms, combined with the resultant loss of agricultural production, has been estimated at UD\$125,600,000. In 2016, Matthew, Category 5 storm caused intense flooding across the country and resulted in economic damages and losses estimated at more than 22% of the country's GDP in that year, including the losses of up to 90% of crops and livestock in some areas of the country, and caused a sharp increase in the number of cholera cases²⁵. There have been more than 820,000 cases of cholera²⁶ recorded in Haiti since 2010. Given that approximately 35% of the population lack access to safe drinking water, and approximately 65% have limited to no access to sanitation services²⁷, the population of Haiti is extremely vulnerable to these diseases and their spread which is aggravated by intense rainfall and ensuing flooding conditions²⁸.
18. The impacts of intense rainfall, both from tropical storms and torrential rainfall, have had numerous knock-on effects on the country's ecosystems by compounding the already high rate of soil erosion and degradation, and contributing to a general decline in soil health. At least 90% of Haiti's soils are considered severely degraded due to deforestation and inappropriate cultivation, causing an increase in run-off, a decline in soil water infiltration, and therefore the surface and groundwater needed to support agriculture. The declining soil quality caused by intense rainfall and the loss of forest systems — in combination with increasing average temperatures — are consequently contributing to a reduction in soil moisture, thereby exacerbating the impacts of climate change on food security by increasing desertification potential. In the absence of soil conservation structures or protective vegetative cover on cropped land and grazed fallow land, the impacts of increasingly intense rainfall will continue to decrease soil health and increase the rate of desertification. Given that over 60% of the country has hillsides, of which more than 20% of slopes are degraded, the conservation of soils on these slopes are directly linked to the food security of Haiti's population.
19. While most of Haiti is at risk to the impacts of climate change-induced flooding, the country's TR watershed has been identified as particularly high-risk²⁹. This area has seen an increased occurrence in extreme rainfall events since 1981. Further details on the projected changes in storm frequency and intensity are contained in Section 3 of Annex 2: Feasibility Study, with summaries of the projected changes in temperature and rainfall patterns under the RCP4.5 and 8.5 scenarios, presented below.

Climate change risks

20. Flooding in Haiti is closely linked with intense, concentrated seasonal rainfall (April–June and August–October), storm events and warm temperatures. The high intensity of rainfall during an extreme storm event results in a particularly notable flood risk. Projections under the RCP8.5 scenario simulate that these climatic conditions that contribute to flooding, and hurricane development are expected to become more prevalent in Haiti (FS pg 40 and Section 3.3). Furthermore, it is anticipated that a modest increase in the frequency of hurricanes and tropical storms affecting Haiti will be experienced in the future³⁰. While detailed data on historical flood impacts and trends is not

²⁴ Gaspard G. 2013. Flood Loss Estimate Model: Recasting Flood Disaster Assessment and Mitigation for Haiti; The Case of Gonaives. Available at: <https://pdfs.semanticscholar.org/b32b/d0ccdcce15f58b07a70f5b1bd5d570baf7f79.pdf>.

²⁵ World Bank. 2017. Rapidly Assessing the Impact of Hurricane Matthew in Haiti. Available at: <https://www.worldbank.org/en/results/2017/10/20/rapidly-assessing-the-impact-of-hurricane-matthew-in-haiti#:~:text=The%20hurricane%20resulted%20in%20flooding,and%20bridges%20were%20washed%20away>.

²⁶ Cholera is a diarrheal disease, and the spread thereof is directly related to limited access to adequate water, sanitation, hygiene and health (WASH) facilities.

²⁷ Etienne CF. 2019. Cholera in Haiti: Gone but not forgotten. Available at: <https://reliefweb.int/report/haiti/cholera-haiti-gone-not-forgotten>. Accessed 15/06/2020.

²⁸ Eisenberg, M. 2013: Examining rainfall and cholera dynamics in Haiti using statistical and dynamic modeling approaches. *Epidemics*. Vol 5 Issue 4. p 197- 204. Available at <https://www.sciencedirect.com/science/article/pii/S1755436513000431>

²⁹ according to four different studies and assessments (including Oxfam's).

³⁰ Further details on the projected changes in storm intensity and frequency are presented in Section 3 of Annex 2: Feasibility Study.

available for the TR watershed alone, and no formal record and quantification of damages could be found for this watershed, flooding is known, anecdotally, to have considerable impacts on communities. The best proxy that is available, given the sparse historic data available for Haiti, is to consider historical satellite data observations as well the modelled impacts for different flooding return periods under the baseline scenario (without climate change). Under a 100-year flooding scenario, 1,342 households in the target watershed are at risk of flooding. Under 20-year flooding scenario, 463 households in the target watershed are at risk of flooding.

Temperature

21. The annual mean daytime temperatures for the Caribbean region show an increase of 0.19°C per decade during the period 1961–2010³¹. This is smaller than the increase in mean night-time temperatures of 0.28°C per decade during the same period, with the resultant change being a decrease in the mean annual daily temperature range. Under the RCP4.5 scenario, maximum increases in temperature of 1.02°C and 1.87°C are expected for 2025 and 2055, respectively, and maximum increases of 1.18°C for 2025 and 2.57°C are expected for 2055 under the RCP8.5 scenario³². Additionally, an analysis of temperature trends for Haiti for the period 1901–2013 reveals that minimum temperatures increased at a slightly higher rate (approximately 0.12°C per decade) than maximum temperatures (approximately 0.10°C per decade), which is consistent with the decrease in daily temperature range observed in the Caribbean region. Under the RCP8.5 scenario for the middle and end of century time periods, daily maximum temperatures are projected to increase by 1.5°C and 3.3°C, respectively. Furthermore, under this scenario, the temperature profile will shift towards warmer temperatures, and the extreme warm events will become more extreme, with current extreme temperatures likely to become the new normal (See FS Section 3.1).
22. Reliable satellite observations (Reynolds et al. 2002) also demonstrate a trend towards increased sea surface temperature (SST) with the ocean surrounding Haiti warming significantly. The observed trend in SST averaged over 75°W–72°W, 17°N–21°N was 0.17°C per decade, for a total warming of 0.70°C over the period 1982–2021.

Rainfall

23. Haiti's First National Communication to the United Nations Convention on Climate Change (UNFCCC) also reports that, under the RCP8.5 scenario, the period 2030–2040 is expected to be up to 6% drier in Haiti, the period 2050–2060 up to 17% drier, and the end-of-century time period expected to be 20% drier. Under the RCP4.5 and 6.0 scenarios, Haiti is expected to be between 9 and 12% drier, respectively, for the end-of-century time period.³³
24. Historical satellite observations from 1981 to the present have demonstrated an increase in annual rainfall in the TR region by 152mm (15%), a trend that is statistically significant at the 90% confidence level which is at odds with these future projections. A projected shift in the precipitation character is also observed, with a projected decrease in frequency of lowrainfall amounts (approximately 10–20 mm per day), and a noted increase in the occurrence of more extreme rainfall events (+30 mm per day) of approximately 10–17% indicating that daily rainfall extremes are becoming more extreme (See FS Section 2.4.2).

Hydrological changes

25. Compared with baseline (1991–2010) flood flow simulations, future projections using four climate models (CCSM4, CMCC, CNRM, HadGEM4) indicate a decrease in mid-century (2041–2060) daily maximum flood flow followed by a significant increase in daily maximum flood flow in the late-century (2081–2100). These projections were analysed under the RCP8.5 scenario. The future projections of 100-year flow events and 20-year flow events³⁴ mimic the projected changes for daily maximum flow, also exhibiting a mid-century decrease and late-century increase. Similar changes in flood extent are also expected, with river discharge, depth and flood extent projections also indicating decreasing trends through the mid-century, before increasing in the late century. The exception to this is the forecasted maximum for 20-year flows, where projections indicate an increase from the historical baseline into the mid- and late-century³⁵. Furthermore, for the 100-year flow event, the following changes in the maximum extent of flooding in the TR watershed are projected: i) a decrease of 17% from hist100 to mid100; and ii) an increase by 12% from mid100 to late100. For the 20-year flow event, the maximum extent of flooding is projected to: i) increase

³¹ Campbell JD, MA Taylor, TS Stephenson, RA Watson & FS Whyte. 2011: Future climate of the Caribbean from a regional climate model. *Int. J. Climatol.* 31: 1866–1878.

³² Haiti. First National Communication to the United Nations Framework Convention on Climate Change (UNFCCC).

³⁴ This terminology pertains to the theoretical return period for an event, which is the inverse of the average frequency of occurrence. For example, a 100-year event has a 1% chance of occurring while a 20-year event has a 5% chance of occurring.

³⁵ Minear JT & Water Science International LLC. No date. Summary Report of Hydrodynamic Model Results: Assessment of Past and Future Flood Potential, Trois-Rivieres Watershed, Haiti.

by 7% from hist20 to mid20; and ii) increase by 7% from mid20 to late20^{36,37}. Further details on projected hydrological changes expected in Haiti and the TR watershed, in particular, are presented in Section 3.5 of Annex 2: Feasibility Study.

26. Given the overall steepness of the gradient of the landscape in the TR watershed, even small flows are enough to mobilise large volumes of sediment. However, in the flood flow model results summarised above, the bed and banks of the river are assumed to be immobile. The above results are therefore likely to be conservative, as a small volume of sediment added from tributaries to the mainstream river would be sufficient to reduce local channel capacities and subsequently increase flood risk^{38,39}.

Climate change impacts and vulnerability

27. **The impacts of climate change-induced flooding in the TR watershed are exacerbated by the negative feedback loop of increasingly intense soil erosion that has been created in the watershed.** Current agricultural practices, such as the increasing prevalence of annual crop cultivation, leave the soil bare and exposed to extreme weather for most of the year. During intense rainfall and storm events that cause flooding, the limited ground cover leads to increased surface runoff and consequently exacerbates soil erosion in the watershed. This erosion is compounded by extensive deforestation in the mountainous parts of the watershed, primarily linked to charcoal production. The demand for charcoal in Haiti is high and is unlikely to decrease in the foreseeable future, with many farmers in the TR watershed resorting to charcoal production as an alternative livelihood in response to low yields, crop failure or unexpected expenses (particularly in extremely wet or dry years). Given this high demand, charcoal production will likely continue to drive deforestation in the absence of alternative livelihood options. Most of the native forests on communal lands have already been harvested, with minimal effort towards reforestation activities⁴⁰. These practices have radically changed the TR watershed's natural landscape, where the large-scale removal of tree cover has decreased infiltration capacity of the soil and contributed to increased surface runoff during heavy rainfall events. This, in turn, has considerably increased flood frequency and intensity in the TR watershed, with flooding washing away fertile soils and causing sedimentation of riverbeds and blocking drainage infrastructure. Given the near-complete absence of embankments and levees in the watershed, this cycle then intensifies the next round of flooding, leading to the destruction of crops, farmland, and agricultural infrastructure, as well as the loss of livestock and human lives⁴¹. Vulnerable communities that depend on agriculture for their livelihoods will be particularly affected by the increased flooding, exacerbating the adverse economic, environmental and social conditions already being experienced in the area.
28. While frequent and intense flooding, soil erosion and sedimentation of rivers have considerable adverse impacts on the landscape and agriculture in the TR watershed, they also have severe consequences for water resources and human health. The erosion of riverbanks and sedimentation build-up in rivers caused by flooding decreases water quality in the watershed considerably, with multiple impacts on freshwater and marine biodiversity as well as increasing the risk of waterborne diseases in surrounding communities. Women and girls are particularly at risk as their household duties — including cooking and cleaning — involve the highest level of exposure to potentially contaminated food and water⁴². The adverse health risks of diarrheal diseases are exacerbated by flooding, which further extends the spread of water pollutants, disrupts water supply and increases the potential of exposure to contaminated water. Flooding also causes blockages in drainage channels with sediment and debris which results in flood waters lingering for longer periods of time. This exacerbates the risk of increased spread of water- and vector-borne diseases. The TR watershed is particularly vulnerable to such diseases given the area's exposure to flooding. For example, approximately 19,100 diarrhoea cases were reported in the watershed in 2018, accounting for approximately 35% of all cases of diarrhoea in the country at that time.
29. **Without urgent intervention in the management of land and water resources, the vulnerable population of the TR region in Haiti will continue to become increasingly at risk to flooding and the associated negative impacts on the environment and the population's livelihoods.** An integrated approach to flood management under future climate

³⁶ Hist100, mid100 and late100 are the historical, mid-century and late-century 100-year ensemble maximum flow, respectively. Hist20, mid20 and late20 are the historical, mid-century and late-century 20-year ensemble maximum flow, respectively.

³⁷ Minear JT & Water Science International LLC. No date. Summary Report of Hydrodynamic Model Results: Assessment of Past and Future Flood Potential, Trois-Rivieres Watershed, Haiti.

³⁸ Ibid.

³⁹ Further details on the methodology for the hydrological modelling undertaken in support of the proposed project are included in Sections 2.4 and 3.4 of Annex 2: Feasibility Study.

⁴⁰ World Bank. 2017. Charcoal in Haiti. A National Assessment of Charcoal Production and Consumption Trends. World Bank, Washington. Available at: <http://documents.worldbank.org/curated/en/697221548446232632/pdf/134058-CharcoalHaitiWeb.pdf>.

⁴¹ OXFAM, Welt Hunger Life, NATHAT, and Cap-Haitien.

⁴² GBV Sub-Sector Nigeria. 2017. Briefing Note: Integrating Gender in Cholera Prevention and Control Interventions in North East Nigeria. Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/briefing_note-gender_in_cholera_response.pdf. Accessed 15/06/2020.

change conditions is consequently required to adequately address the diverse impacts of climate change-induced flooding on the TR watershed in Haiti. An integrated approach to flood management must take into account the environmental vulnerability within the region and the role that ecosystems, through sustainable land management can play as an integral adaptation solution that allows for community appropriation and will result in enhancing the capacity of the watershed to manage flood conditions and restore the infiltration capacity of the watershed.

Baseline projects, programmes and initiatives

30. Considerable baseline investments are being made through public expenditure and donor-funded initiatives to increase the resilience of Haiti's watersheds to climate change impacts, particularly flooding. Lessons learned and best practices from these investments, have been incorporated into the design of the proposed project to replicate successful adaptation and flood management techniques and ensure that there is complementarity between the project and existing actions. The proposed project interventions are designed to complement several of the most relevant baseline investments. An analysis of each of these projects was conducted to ensure that the proposed project will not duplicate or adversely affect these ongoing initiatives (refer to Section 6 in Annex 2 for a full list). Instead, GCF resources will be used to build on and complement existing efforts to achieve maximum adaptation impact in the TR watershed. The most relevant baseline investments, including a description of how the proposed project will complement these investments, are presented below⁴³.
31. USAID has committed to providing US\$40 million for the *Haiti Reforestation Project (2018–2022)* to reduce the threat of deforestation and increase tree cover in and around targeted areas in the northern parts of the country. The USAID project is aligned with the mutual goals of the GoH and USAID of restoring the provision of ecosystem goods and services in targeted forest areas in Haiti to enhance food security of surrounding communities. Specific interventions under the USAID project include: i) addressing the threat of deforestation in Haiti through reducing charcoal use by 80,000 metric tonnes in five priority watersheds; ii) increasing tree cover in selected areas, with the aim of planting a total of 5 million trees by project closure; iii) developing a total of 15,000 hectares under agroforestry systems to improve the resilience of those people employed in key economic sectors (e.g. agriculture) to economic shocks caused by climate and non-climate hazards; and iv) improving environmental governance and coordination in the country. The proposed GCF project will build on this ongoing baseline initiative by promoting an integrated approach to land and water resources management in the TR watershed and demonstrating the benefits of ecosystem-based adaptation (EbA) solutions such as land rehabilitation and agroforestry as effective flood management strategies. By promoting the adoption of these interventions as appropriate adaptation measures not only for reducing the impacts of climate change-induced flooding, but for contributing to food security and health in vulnerable Haitian communities, the project will catalyse the uptake of these measures across the TR region and throughout the country. The project proposal has also taken into account the project's evaluation into its design by ensuring that project interventions are folded into national and subnational government plans to ensure not only local but also national appropriation and long term sustainability. The project will also look to incorporate community best practices in reforestation and agroforestry to enhance a sense of local ownership in the techniques that will be promoted by the project to reduce the perception of a top down approach in project solutions.
32. The Natural Disaster Mitigation Program II (2016–2021) is a US\$42 million programme financed by the Inter-American Development Bank (IDB). The overarching objective of the programme is to improve climate-resilient watershed management by the agricultural sector in Haiti's Artibonite Department⁴⁴. Specific interventions under the project include: i) increasing climate resilience and disaster risk management in the agricultural sector; ii) improving water and sediment conservation in selected gullies of priority watersheds; iii) reducing the risk of rural economic losses as a result of flooding in targeted watersheds; and iv) protecting the institutional knowledge generated and housed within the country's Faculty of Agronomy and Veterinary Medicine, which is a central institution responsible for innovation and capacity development in Haiti's agricultural sector as well as in natural resources management and rural engineering. These interventions provide valuable lessons on climate-resilient, sustainable land management approaches for the agricultural sector, focusing primarily on implementing EbA approaches for disaster risk reduction. However, the interventions do not form part of an integrated and adaptive framework that can be used to inform climate-responsive planning at the watershed level. The proposed GCF project will address this gap by implementing an integrated approach to managing flooding in Haiti's TR watershed. Such an approach comprises: i) enhancing climate-resilient flood management in the watershed will be enhanced by establishing agroforestry systems and restoring degraded landscapes at priority intervention sites; ii) strengthening the institutional and technical capacity of decision-makers involved in agriculture at national and local levels to facilitate the uptake of productive land-use management techniques; iii) implementing a social protection system to support climate-vulnerable households affected by chronic food insecurity to recover their nutritional and

⁴³ A comprehensive list of baseline projects, programmes and initiatives as well as details of their focus and alignment with the proposed project is presented in Section 6 of Annex 2: Feasibility Study.

⁴⁴ Supporting documentation and project monitoring reports are available at: <https://www.iadb.org/en/project/HA-L1097>.

financial autonomy immediately after being impacted by climate change-related events such as flooding; and iv) establishing the required governance framework for integrated water resources management (IWRM) in Haiti to support the climate-resilient land management systems and facilitate sustainable use and management of water resources over the long term.

33. The World Bank-funded *Resilient Productive Landscapes Project (RPLP) (2018–2024)* is a US\$26 million project that focuses on climate-resilient agriculture and landscape management in Haiti. This project has two main objectives, namely to: i) improve the adoption of climate-resilient agricultural and landscape management practices in selected sub-catchments in the country; and ii) enable the GoH to respond promptly and effectively to extreme climate events such as floods, hurricanes and tropical storms. These objectives will be achieved through four interlinked components, focusing on: i) strengthening the institutional and organisational capacity for sustainable, climate-resilient agricultural and land-use management interventions at the landscape level; ii) strengthening climate-resilient agricultural production and practices in the project areas; iii) project coordination and undertaking regular monitoring and evaluation (M&E) of project interventions; and iv) establishing contingency processes and enhancing emergency responses. The proposed GCF project will complement and build on these four components by strengthening the capacity of farmers and community members in the TR watershed to implement climate-resilient agricultural and land-use practices. This will include: i) promoting a shift from unsustainable charcoal production to agroforestry systems as an alternative livelihood strategy; ii) improving the knowledge of these targeted user groups for implementing an integrated approach to land and water resources management; and iii) demonstrating the considerable food security (e.g. reduced agricultural losses as a result of implementing climate-resilient farming techniques) and health benefits (e.g. reduced spread of water- and vector-borne diseases because of the improved water quality resulting from reduced erosion and river sedimentation) associated with adopting such an integrated approach.
34. The Inter-American Development Bank (IDB), Global Agriculture and Food Security Program (GAFSP), International Fund For Agricultural Development (IFAD) and the GoH (through the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR⁴⁵) in the country) have partnered to design and implement *Haiti's Technological Innovation for Agriculture and Agroforestry Program (PITAG) (2018–2022)*, valued at US\$77 million⁴⁶. This programme focuses on enhancing small agricultural producers' revenues and food security in the country. Interventions under the programme aim to increase on-farm productivity and improve the sustainable use of natural resources by implementing climate-resilient agricultural and agroforestry technologies that have long-term livelihood benefits. The proposed GCF project will build on this programme by implementing an integrated, climate-resilient approach to land and water resources management in Haiti. Specifically, agroforestry and reforestation activities under the PITAG programme will be scaled up and replicated at different sites under the proposed project to maximise the restoration of degraded ecosystems in the country and serve as an adaptation response to climate change-induced flooding in the TR watershed. Results from the PITAG programme's terminal evaluation, particularly those pertaining to the implementation of agroforestry on steep slopes, combined with lessons generated under the programme, will be used to inform the implementation of agroforestry systems under the proposed project. Lessons learned and best practices for implementing sustainable land management in Haiti generated under the PITAG programme will be used to inform the implementation of the adaptation interventions under the proposed GCF project to maximise the adaptation impact of these interventions and demonstrate the associated benefits to a wider beneficiary group. This will be extremely valuable for ensuring that these systems deliver maximum adaptation benefits to the communities living adjacent to project sites. The implementation of EbA interventions under the proposed project will be complemented by strengthening the capacity of national and local decision-makers, as well as local communities, involved in agricultural production in the TR watershed to implement productive climate-resilient land management practices. These capacity-building activities will be supported by the establishment of a finance mechanism for farmers in the TR watershed. Given that access to finance for climate-resilient agricultural inputs was not a focus of the PITAG programme, this intervention will bridge the gap of access to finance for these inputs and contribute to further safeguarding vulnerable people involved in agriculture against the impacts of climate change, particularly flooding. As a result of these interventions, decision-makers at the national and local levels will be better equipped to manage flood impacts under future conditions of climate change. Furthermore, local community members who depend on agriculture for their livelihoods will have enhanced technical and institutional capacity to implement productive land-use practices that are sustainable over the long term.
35. The GCF Readiness Project *Integrating climate change risks into national development planning processes in Haiti (NAP)* aims to strengthen institutional and technical capacities for the iterative development of a National

⁴⁵ MARNDR is the French acronym for this ministry. This acronym has been included at all mentions of the Ministry of Agriculture, Natural Resources and Rural Development throughout this Funding Proposal.

⁴⁶ Documentation on project including monitoring reports is available at <https://www.iadb.org/en/project/HA-G1038>.

Adaptation Plan (NAP) to effectively integrate climate change adaptation (CCA) into national and sub-national coordination, planning and budgeting processes. The project intends to achieve this objective through three outputs, namely: i) strengthening coordination mechanisms for multi-sectoral adaptation planning and implementation at different levels; ii) ensuring the NAP is compiled with a strong evidence base for adaptation planning and subsequently integrating priorities into the Strategic Development Plan (PSDH) and Disaster Risk Reduction Plan and Strategy (PNGRD); and iii) establishing a financing framework for CCA in the medium- to long-term. The proposed GCF project complement this initiative by enhancing institutional capacity for sustainable land management, as well as strengthening institutional capacity for the implementation of the Water Act⁴⁷ and developing an integrated, climate-resilient water management governance framework.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

Problem statement

36. Haiti is already experiencing the impacts of extreme climate events, which contribute to its ranking as the most vulnerable country in the world to climate change, according to the 2016 Global Climate Risk Index⁴⁸. Climate change is causing an increase in temperatures and creating more favourable conditions for increased frequency and intensity of hurricanes in the Caribbean region. Moreover, climate change is resulting in a decrease in total annual rainfall in Haiti, compounded by a shortening of the wet season and a resulting increase in concentration and intensity. These changing climatic conditions are contributing to an increase in the frequency and intensity of flooding in the country, particularly in the Trois-Rivières (TR) watershed. The impacts of this climate change-induced flooding are exacerbated in the watershed by the steep topography, degraded landscapes caused by unsustainable agricultural practices and deforestation because of large-scale tree clearing for charcoal production. During heavy rainfall and flood events, these degraded areas experience increased surface runoff, compounded by decreased infiltration capacity of the soil because of reduced vegetation cover. These factors, combined with the steep topography of the TR watershed and near-complete absence of embankments along the river, increase the flow of water into the low-lying plains, increasing the flood risk of the population living near the river's edge. Furthermore, increased water flow intensifies erosion of the watershed and results in sediment deposits on the riverbed and drainage infrastructure, further exacerbating the impacts of flooding. The resultant pollution of freshwater resources also increases the risk of water- and vector-borne diseases (e.g. cholera) spreading throughout local communities. Without the implementation of adaptation measures in the TR watershed, these impacts of flooding on land and water resources, as well as the health and livelihoods of the population living in the watershed, will continue to become increasingly severe as rainfall patterns shift to become more concentrated and intense under future climate change conditions⁴⁹.

Preferred adaptation solution

37. For Haiti to adapt to the impacts of climate change-induced flooding on the TR watershed, it is necessary to implement an integrated approach to flood management to adequately address the diverse impacts of climate change-induced flooding on the watershed and population living within it. This approach will be implemented under the project and in particular focus on: i) improving land-use planning and management at national and local levels; ii) implementing Ecosystem-based Adaptation (EbA) solutions in the form of restoration and agroforestry activities to address soil erosion caused by flooding, reduce health risks associated with water- and vector-borne diseases, and provide alternative climate-resilient livelihood options to target communities; and iii) enhancing the capacity of national- and local-level actors responsible for decision-making around the use of water resources to implement climate-resilient integrated water resources management (IWRM) in Haiti. This approach is required to shift decision-making on flood management away from the existing uncoordinated and compartmentalised approach, towards an integrated approach that is underpinned by the uptake and implementation of climate-resilient land-use practices, strong governance, as well as the sustainable use and management of land and water resources.

38. Specifically, sustainable flood mitigation solutions are required to reduce the peak surface runoff and flooding extent in the watershed, while simultaneously securing the livelihoods of vulnerable communities. Solutions need to take into account long terms sustainability and local capacity for their maintenance as well as their own capacity to deliver on flooding benefits (see Annex 2 Section 4). Within the context of the TR watershed, Ecosystem-based Adaptation (EbA) solutions — in the form of reforestation and agroforestry activities — are the preferred option because of their cost-effectiveness, flood-reduction potential, and provision of valuable ecosystem goods and services to climate-vulnerable communities living in the watershed. Hydrological and economic studies commissioned by UNDP to support the development of the project indicate that actions related to forest

⁴⁷ The Water Act acts as regulatory policy towards water integrated management that may take the form of a National Regulatory Decree.

⁴⁸ GermanWatch, Global Climate Risk Index 2016. Available at: <https://germanwatch.org/fr/download/13503.pdf>.

⁴⁹ Further details on the baseline and projected changes in temperature, rainfall and flood profiles are presented in Section B.1 of this Funding Proposal.

management including the implementing agroforestry systems and forest rehabilitation will reduce the impacts of climate change-induced flooding through a 40% reduction in peak runoff in the watershed.

39. The establishment of agroforestry systems will also provide an alternative livelihood option to unsustainable charcoal production, further contributing to environmental sustainability in the TR watershed. These interventions should be supported by the creation of an enabling environment in Haiti for the adoption of sustainable, climate-resilient land-use practices with multiple benefits including food and water security. The technical and institutional capacity of national- and local-level representatives involved in agriculture, in particular, should be enhanced for productive climate-resilient land management. This capacity-building should be supported by the establishment of a governance framework that promotes integrated water resources management (IWRM) to facilitate a shift towards the sustainable use and management of water resources over the long term.

Barriers to the adaptation solution

40. Several barriers to the preferred adaptation solution have been identified for Haiti. These are summarised below and explained in detail in Section 8 of Annex 2: Feasibility Study. The barriers fall broadly in the themes of technical and institutional barriers (Barriers 1, 2 and 3), financial barriers (Barrier 4) and social/psychological barriers (Barriers 5 and 6).

Barrier 1. Limited technologies, resources and knowledge for climate-resilient flood management

41. Communities in Haiti, particularly farmers, are not informed about current and projected climate change impacts, particularly flooding, on agricultural production, other land-use practices and water resources. There is also limited technical knowledge amongst communities on how to adapt to these changes and increase climate resilience, particularly using EbA solutions. The limited understanding of communities and farmers of the impacts of climate change and how to address them (e.g. through adopting climate-resilient agricultural practices) increases their vulnerability over the long term. This vulnerability is compounded by existing limitations in practical and technical experience to establish and manage local, financially sustainable small-scale tree propagation operations that serve reforestation and agroforestry needs. Community members generally prefer to migrate to urban areas or engage in alternative rural occupations, as these options are perceived to offer more financial stability than tree propagation operations and agroforestry.

Barrier 2. Absence of integrated, climate-sensitive water and land management policy and governance frameworks

42. Currently, there are no integrated, climate-sensitive water or sustainable land management policies and governance frameworks in Haiti. The country lacks overarching water management legislation⁵⁰, a formal cadaster⁵¹, a standard practice for land tenure arrangements, or relevant strategies to promote sustainable landscape management. Absence of a regulatory framework and enforcement of sanctions and property rights also reinforces an open-access interpretation of community assets, which is compounded by social barriers (see Barriers 5 and 6) such as the lack of private incentives for reforestation. In terms of governance, there are no administrative structures at the catchment or sub-catchment levels, and there are currently no local water resources user associations or other community committees that have the skill and capacity for IWRM. This lack of vertical coordination and oversight is evident in line ministries providing weak or minimal support to local communities, which leads to limited support for farmer associations to implement changes in conservation or to manage water resources. Constraints in these policy and governance frameworks — as well as the limited integration of lessons learned — has produced three major concerns, namely: i) existing legal instruments that do not consider the projected threats from climate change; ii) lack of land use planning implementation and enforcement has led to deforestation and degradation; and iii) a lack of coordination in planning, implementation and accountability caused by undefined roles and responsibilities of institutions dealing with water management

Barrier 3. Limited coordination and capacity to implement/execute

43. Implementing/executing entities, government and non-governmental stakeholders in Haiti have limited opportunity and incentive to coordinate efforts to address climate risks. This leads to: i) projects by different organisations often being designed independently, without consideration of how they affect each other or address the broader resilience of the country; and ii) limited coordination among donors or between GoH ministries during project implementation. Local authorities and stakeholders at the forefront of managing climate change impacts are also not equipped and trained to incorporate climate change considerations into decision-making or to design and implement climate-resilient water management. This is evident in the lack of catchment and sub-catchment administration structures and capacity to oversee participatory, equitable and adaptation-focused decision-making on water and land use, which further amplifies households prioritising private gains over catchment-wide benefits.

⁵⁰ Although the establishment of a Water Act has been identified as one of the Ministry of Environment's priorities in its 2019-2022 Triennial Plan.

⁵¹ Or 'cadastre', an official register of the ownership, extent, and value of real property in a given area, used as a basis of taxation.

Barrier 4. Limited access to credit, savings and financial instruments or incentives among farmers

44. There are financial barriers to farmers wanting to implement sustainable land management practices in Haiti. These include a lack of access to capital to invest in start-up costs, maintenance materials and tools, as well as limited “bridging” household reserves to cope with crises⁵². Alternative sources of funding and credit⁵³ are not available or are difficult to access, which leads to short planning horizons. These planning horizons drive short-term relief activities, such as the production of charcoal at unsustainable rates to meet pressing short-term financial needs without recognizing its potential impact on valuable ecosystem that are providing flood management benefits.
45. For agroforestry and climate-resilient agricultural practices to be sustainable, incentives for farmers to implement these systems are needed to enable farmers to overcome this short-termism and to allow time for these systems to produce returns. Alternative financial mechanisms that are appropriate for the agroforestry and allow for long term continuity (are sustainable) and increased scale of action is also required to go beyond a pilot mentality to allow for transformative change. These mechanisms must take into account community practices and risk analysis to address existing systemic barriers to provide much needed capital for the success of these systems.

Barrier 5. Limited incentives for communities to change land management and farming practices or contribute to communal resilience building

46. Limited understanding of climate change impacts compounds prevailing circumstances, — such as poverty — that emphasise the prevalence of household or individual short-term decision-making over long-term communal resilience and well-being. Households (which have a high discount rate⁵⁴) make decisions in their own immediate interest, without necessarily considering the impact of those decisions on the sub-catchment and the long-term impacts on their own wellbeing. Additionally, charcoal production is entrenched in communities as the major source of energy for cooking, having significant economic importance and few available alternatives to households. There is also no experience or incentive among water users to consider sub-catchment scale water management in their household decision-making. Finally, the familiarity of established, unsustainable farming practices is a barrier to better alternatives as households are reluctant to change to new crops or practices without the development of local markets and social safety nets.

Barrier 6. Absence of inclusive and participatory community consultation mechanisms for climate change-induced flood management planning and decision-making

47. The absence of participatory and inclusive planning, which is a fundamental principle of an integrated flood management approach for climate resilience, means that communities are not currently incentivised to take up adaptation interventions in Haiti. Underlying factors for this include technical and financial capacity constraints at the municipal level. These have historically limited the ability of public officials to effectively engage with appropriate communities and stakeholders during decision-making on land and water resource management. Given the strong influence of social factors such as gender inequality on vulnerability to flood impacts, it is necessary to promote inclusive decision-making processes to ensure buy-in and effectiveness in interventions. Past interventions have been criticised for failing to take gender and other considerations into account by focusing on general agricultural incomes and outputs, access to which is shaped by prevailing systems of privilege.

Project approach to overcoming the barriers to adaptation

48. The project will overcome the abovementioned barriers to build the climate resilience of Haiti’s TR watershed by implementing a sustainable land and water management approach in the TR watershed as an adaptive measure to the impacts of climate induced flooding. These will be implemented through community based governance and planning mechanisms and will be linked to tangible benefits to address immediate food insecurity while providing flood protection to those most vulnerable. Sustainable land management as implemented by the project will result in enhanced food and water security in the TR area hence creating the incentives to sustain sustainable productive practices underpinning the ecosystem based interventions. The project’s strong focus on communication, monitoring and capacity building will allow for these linkages to become evident to project beneficiaries hence creating a shift in their approach to unsustainable business as usual practices. Barriers to sustainability will be addressed by the project in linking sustainable land management to enhanced productive capacity and markets as well as by mobilizing community based financing for continued investment. More importantly project investments

⁵² In this context, “limited bridging of household reserves” refers to the absence of emergency savings or other financial support for farmers so that, if crops fail because of climate change impacts and/or other disasters, they would be able to support their livelihoods immediately after these events until they are able to start generating their own income again.

⁵³ World Bank (2019). Agricultural Financing in Haiti: Diagnosis and Recommendations. Available at <https://openknowledge.worldbank.org/handle/10986/33178>

⁵⁴ A discount rate is the interest rate used to determine the present value of future cash flows in a discounted cash flow analysis. This helps determine if the future cash flows from an investment will be worth more than the capital investment in the present. Within this context, the high discount rate of households is as a result of their general financial insecurity, which is a barrier to applying for, and receiving, financial support (for example, in the form of bank loans).

will create a practical evidence base for the communities as well as the governance structures required to promote their continuity and upscale project actions into more ambitious adaptation measures.

49. The project's theory of change can be evidenced through its various interrelated Outputs. For example, Output 1 will enhance the resilience in the TR watershed to the impacts of climate change-induced flooding through a combination of on-the-ground ecosystem-based adaptation (EbA) interventions (agroforestry and reforestation activities) at strategic sites in communal sections within the target communes, while establishing the local governance structures required to implement and manage climate-resilient land-use practices, and building the capacity of community groups for climate-responsive planning. Doing so will not only reduce climate change-induced flooding in the TR watershed but also address the problem of unsustainable charcoal production through that is exacerbating degradation pressures in the watershed while aggravating flooding vulnerability to adjacent communities. This will be done through the identification of species that are focused on addressing community needs such as sustainable charcoal (through species that allow for sustainable charcoal through correct pruning measures) as well as food and livelihood security (fruit species). Output 2 will in turn further support the EbA Interventions through sustainable land management in agricultural systems while creating a social safety net that encourages agricultural development and desensitizes the need for unsustainable charcoal production within the ecosystem that in turn reduces its protective cover to manage flooding. It will also develop the financial mechanism through credit associations to ensure that these investments can be maintained and replicated even beyond the project's implementation scope. Finally, Output 3 will ensure the sustainability of these measures by creating the local (catchment and sub-catchment) and national structural capacities for Integrated Water Management in the form of improved land use management for water security and management while linking improved water management to public health outcomes.
50. In this sense, barrier 1 will be addressed by investing directly in implementing an integrated approach to climate-resilient flood management in Haiti. This approach will involve: i) strengthening governance for and national- and local-level decision-makers' and communities' capacity to implement Integrated Land Management (ILM) and Integrated Water Resources Management (IWRM) in Haiti, using a participatory approach; ii) restoring 7,700 ha of degraded forest and implementing 17,740 ha of agroforestry systems in the watershed to reduce the impacts of climate change-induced flooding on ecosystems and communities; and iii) implementing a social protection system, coupled with enhanced technical capacity and access to finance of national and local representatives to facilitate the adoption of climate-resilient sustainable land-use practices and livelihoods.
51. Under the climate-resilient Integrated Land and Water Resources Management (ILWRM) approach proposed by the project, community groups (including farmer and women's associations) will be encouraged to participate in the development of community land-use plans for each of the 33 communal sections within the seven target communes in the TR watershed. The development and implementation of these community land-use plans will be supported by the establishment of the necessary national governance framework for climate-resilient IWRM. This will involve strengthening national capacities for the implementation of the Water Act and developing an inclusive and equitable water management governance framework for the TR catchment, namely the Catchment Integrated Water Resources Management Committee (CIWRMC). Furthermore, lessons generated through the implementation of all project interventions will be shared through the relevant committees and associations — at the catchment and sub-catchment levels — to inform adaptive management of these interventions under future climate change conditions. Combined, these key activities will overcome Barriers 2 and 3, with the participatory decision-making around land and water resources management contributing to addressing Barrier 6.
52. Barrier 4 will be addressed through a combination of long- and short-term interventions to address the immediate impacts of a flood event in Haiti, including food security and health, as well as facilitate access to finance to support the uptake of climate change adaptation solutions in response to the projected increasing impacts of climate change in Haiti. Specifically, the technical capacity and access to finance of national and local representatives involved in agriculture in the TR watershed will be enhanced to facilitate their adoption of climate-resilient sustainable land-use practices and provide an alternative livelihood option to unsustainable charcoal production in the watershed. This will be supported by providing immediate financial relief to vulnerable households in the TR watershed to enable these households to sustain themselves immediately after a flooding event. These efforts will be underpinned by the Agricultural Village Savings and Credit Associations (VSCA) that will be created through the project to finance ongoing productive investments (by harnessing savings). The VSCA will act as an appropriate financial mechanism for community farmers to allow for the long term sustainability of the project's approach to sustainable land management.
53. Barrier 5 will be addressed by creating incentives in the TR watershed for the adoption of sustainable land and water resources management techniques that are resilient to climate change-induced flooding. This will be

achieved under each element of the ILWRM approach proposed under the project by: i) demonstrating the wide variety of adaptation benefits and alternative livelihood options associated with the proposed EbA solutions such as reforestation and agroforestry (Output 1); ii) optimising the agricultural value chain and increasing the knowledge of vulnerable communities of the benefits of implementing climate-resilient agricultural techniques (Output 2); and iii) creating an enabling policy environment and strengthening governance in Haiti at the national and local levels for integrated, climate-resilient land and water resources management (Output 3).

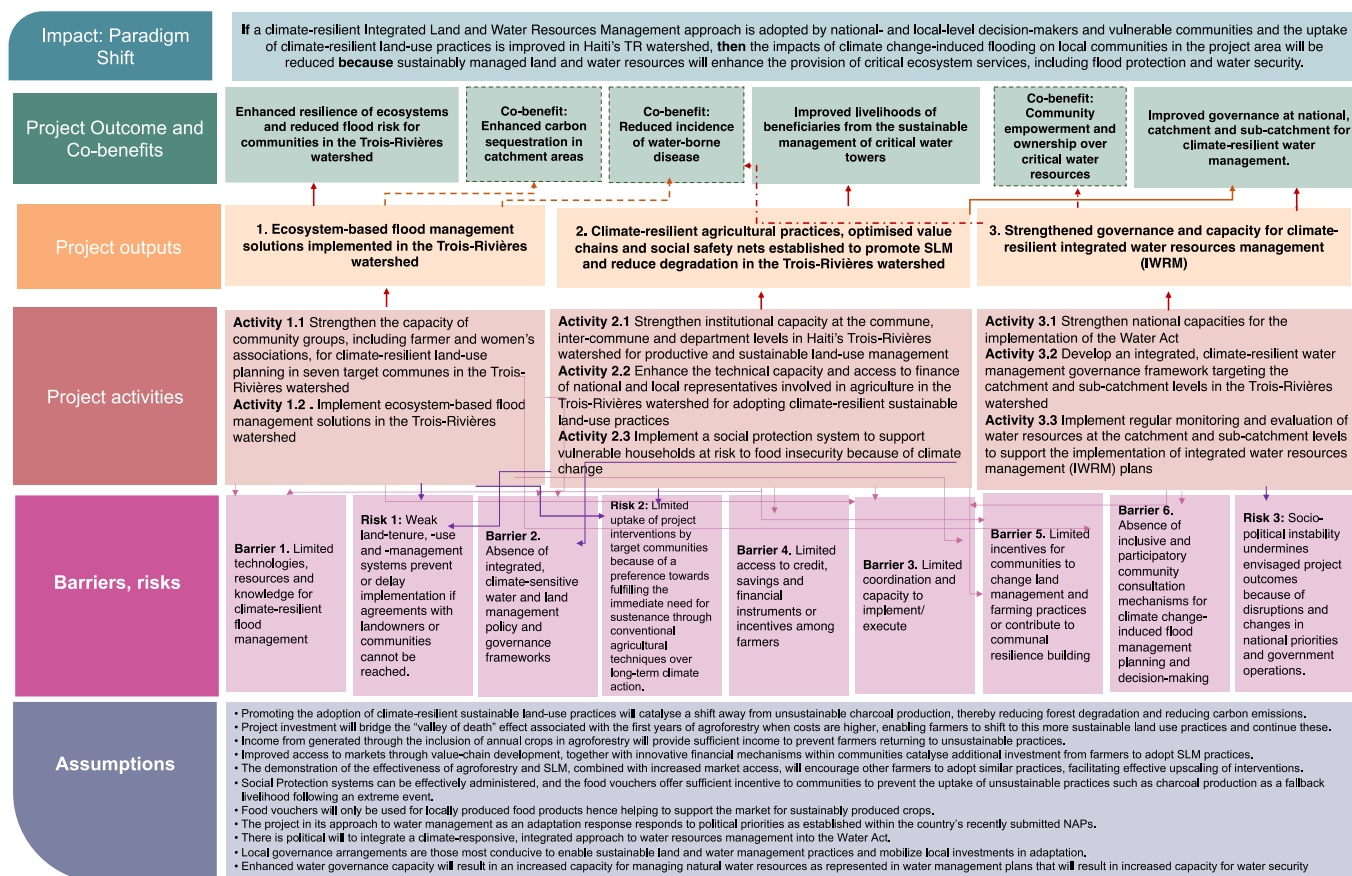


Figure 1. Project Theory of Change diagram.

B.2 (b). Outcome mapping to GCF results areas and co-benefit categorization

Fill in the GCF results area table below to map each project/programme outcome identified in section B.2(a) to the contributing GCF results area(s) by referring to the description of eight results areas provided in the guidance note.

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	MRA 2 Low-emission transport	MRA 3 Building, cities, industries, appliances	MRA 4 Forestry and land use	ARA 1 Most vulnerable people and communities	ARA 2 Health, well-being, food and water security	ARA 3 Infrastructure and built environment	ARA 4 Ecosystems and ecosystem services

1. Enhanced resilience of ecosystems and reduced flood risk for communities in the Trois-Rivières watershed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Improved livelihoods of beneficiaries from the sustainable management of critical water towers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Improved governance at national, catchment and sub-catchment for climate-resilient water management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If any co-benefits have been identified in section B.2(a), fill in the Co-benefit table below to map each co-benefit to the corresponding category as defined in the FP guidance note.

Co-benefit number	Co-benefit					
	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1: Enhanced carbon sequestration in catchment areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Co-benefit 2: Reduced incidence of water-borne disease	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Co-benefit 3: Community empowerment and ownership over critical water resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

Project objective

54. The proposed project will contribute to GCF's paradigm shift objective of increased climate-resilient sustainable development by enhancing the resilience of Haiti's Trois-Rivières (TR) watershed to the impacts of climate change-induced flooding. This shift will be achieved by implementing a transformative approach to the way in which the GoH addresses flood impacts. Specifically, direct investments from the GCF combined with co-financing from the Heifer International Haiti-funded proposal⁵⁵ will be used to: i) implement agroforestry systems and rehabilitate 'water towers'⁵⁶ through reforestation⁵⁷ of degraded landscapes at priority intervention sites⁵⁸; ii) enhance technical and institutional capacity for productive climate-resilient land management at the national and local levels; and iii) establish the required governance framework for integrated water resources management (IWRM) to support the climate-resilient land management systems and facilitate sustainable use and management of water resources over the long term. The combined effect of project interventions will result in the adoption and implementation of a climate-resilient, integrated approach to flood management that can be readily scaled up and replicated nationally and across the Caribbean region. Proposed project outputs and activities are described in detail below with summaries of the project activities presented in Section E.6 of this Funding Proposal.

Output 1. Ecosystem-based flood management solutions implemented in 25,440 hectares of the Trois-Rivières watershed

55. At present, climate change-induced flooding is exacerbated by degraded landscapes and forests because of large-scale tree clearing for agricultural and charcoal production. During heavy rainfall events and flooding, the limited surface cover combined with the near-complete absence of embankments along the river intensifies soil erosion and river sedimentation. Implementing agroforestry systems and rehabilitating degraded forests in the TR watershed will address these problems by significantly reducing peak runoff and flooding extent in the area. These flood-reduction benefits will be realised through increasing vegetative cover in the watershed, which will attenuate flow by considerably reducing surface runoff and increasing the infiltration capacity of the soil. Reductions in water flow will reduce the risk of damage to public infrastructure and private property (e.g. homes and agricultural equipment), which will likely result in a decline in the observed annual damages and economic losses caused by flooding in Haiti. Furthermore, the implementation of these EbA interventions will have numerous environmental and social benefits for vulnerable households living in the target communes in the TR watershed. Rehabilitating degraded forests and establishing agroforestry systems will improve natural filtration of overland flows, removing water pollutants and, consequently, contribute towards avoiding sedimentation of key freshwater sources in the TR watershed. This will lead to improved water quality of these sources which, in turn, will contribute to reducing the spread of water- and vector-borne diseases (e.g. cholera), therefore safeguarding the health of communities living near to the priority intervention sites. The EbA interventions will also increase the ecosystem goods and services they provide (e.g. an improved quality and quantity of water supply, increased prevalence of agricultural pollinators and enhanced soil fertility⁵⁹), which will contribute positively to improving these communities' livelihoods.

56. Further livelihood benefits will be realised through the implementation of agroforestry systems in the target communes, including: i) Agri silvicultural systems — which are a combination of crops and trees, such as alley cropping; ii) silvopastoral systems — which combine forestry and grazing of domesticated animals⁶⁰; and iii) agrosilvopastoral systems that combine trees, crops and animals⁶¹. At present, most of the vulnerable communities living in the TR watershed depend on agriculture to sustain their livelihoods, with an observed increase in unsustainable charcoal production in years where the impacts of climate change have had particularly severe effects on agricultural yields and other livelihood options. Under this project output, vulnerable communities will be encouraged to adopt alternative livelihood options (such as beekeeping and mushroom cultivation). It is feasible for these livelihood options to be implemented alongside or independently of agroforestry services to catalyse a shift away from unsustainable charcoal production towards land use practices that will continue to provide long-term benefits under future climate change conditions.

⁵⁵ entitled *Project for improved food and nutrition security and access to social protection in the Trois Rivières watershed (also referred to as the "Pasan-Apros project")*

⁵⁶ "Water towers" refers to mountainous areas in Haiti where water for agricultural production and drinking is obtained.

⁵⁷ Restoration of arboreal land cover will be achieved through both agroforestry and reforestation. By promoting agroforestry in areas closer to households, beneficiaries will be able to integrate tree cover into their plots and obtain financial benefits from it. In areas further from households (i.e. water towers) the agricultural component of agroforestry will not be implemented, with only trees being planted in these areas. Reforestation will consist of reforesting the perimeters upstream of water points (using forest species present in the intervention zone) and also planting forest species in degraded mountainous slopes.

⁵⁸ Further details on the selected priority intervention sites are presented in Section 10 of Annex 2: Feasibility Study.

⁵⁹ Thompson, I.D. et al. 2011. "Forest Biodiversity and the Delivery of Ecosystem Goods and Services: Translating Science into Policy", *BioScience*, 61 (12).

⁶⁰ It should be noted that the project will not promote additional animal husbandry or breeding, but will instead focus on ensuring that existing livestock are managed sustainably using the principles of silvopastoralism.

⁶¹ FAO. 2015. Forestry: Agroforestry definition. Available at: <http://www.fao.org/forestry/agroforestry/80338/en/>

57. The implementation of agroforestry systems and reforestation of arboreal land cover on degraded mountainous slopes to manage flooding in Haiti's TR watershed will be supported under this project output by strengthening the technical and institutional capacity of community groups, including farmer and women's associations, for climate-resilient land-use planning. Specifically, this will include developing community land-use plans for use within 33 communal sections situated within the 7 target communes in the watershed. The development of these plans will facilitate the identification of climate change impacts, particularly flooding, on the TR watershed and the design of appropriate actions for addressing these impacts. Such actions include the implementation of EbA interventions such as flood reduction measures and the promotion of sustainable, climate-resilient land-use practices and techniques (e.g. agroforestry) to reduce the risk of increased land degradation under future climate change conditions. These plans will then be used to inform training on climate-resilient land-use management that will be delivered by the Responsible Parties to communities and farmer and women's associations in all seven communes. The training will focus on the practical application of climate-resilient land-use management and agricultural techniques and improving communities' understanding of the linkages between land use and hydrology of the TR watershed, particularly the implications of unsustainable land-use practices on the frequency and intensity of flooding in the watershed. The local and central authorities of the and MARNDR will be fully involved in the development of the community land use plans and accompanying trainings. These ministries already have systems in place for sharing information and organizational structures exist at the local level that will ensure the sustainability of these activities beyond the project lifetime. Exchange visits within the framework of other projects implemented by the and MARNDR will also be carried out to ensure information-sharing and coordination between the proposed project and ongoing national initiatives. Furthermore, lessons learned will be systematised under Output 2 of the project to be scaled up and replicated nationally and regionally.
58. To support this training, awareness-raising campaigns will be designed and implemented in each of the seven target communes in the watershed. These campaigns will focus on: i) increasing the knowledge of people living in the TR watershed on sustainable land-use practices and promoting the uptake of these practices; ii) encouraging community members to participate in the development of community land-use plans; and iii) raising awareness among people living in the target communes on the impacts of climate change-induced flooding and effective adaptation and landscape management solutions for addressing these impacts. These capacity-building initiatives combined with the implementation of EbA interventions will contribute towards a shift in the TR watershed towards the adoption of sustainable land-use management techniques and practices that are resilient to climate change-induced flooding.
59. Project activities that will be implemented under Output 1 are summarised below. Further details on these activities, including on the associated sub-activities and deliverables, are presented in Section E.6 of this Funding Proposal and Section 9 of Annex 2: Feasibility Study.

Activity 1.1. Strengthen the capacity of community groups, including farmer and women's associations, for climate-resilient land-use planning in seven target communes in the Trois-Rivières watershed

60. Under this activity, 33 communal sections⁶² within the 7 target communes in the TR watershed (Port-de-Paix, Chansolme, Bassin Bleu, Plaisance, Pilate, Marmelade, Gros Morne) will be validated through the following criteria vulnerability of the areas and populations, level of environmental degradation (including forest cover), proximity of the areas to the river and potential impact of flooding and their agricultural potential. Community members and farmer and women's associations within these 33 communal sections will be trained by the project's Responsible Parties on climate-resilient land-use management that will result in the development of 33 community land use plans that will guide on the ground interventions for community land use management.
61. The 33 community land use plans (Sub activity 1.1.1) will be shaped through community engagement in a consultative process and will focus on identifying the impacts of climate change, particularly flooding, on the TR watershed and designing appropriate actions for addressing these impacts. Such actions include the implementation of EbA solutions to reduce flood risk in the watershed as well as the promotion of sustainable, climate-resilient land-use practices and techniques (e.g. agroforestry) to reduce the risk of increased land degradation under future climate change conditions. The 33 land use plans developed will in turn the training that will be provided by Responsible Parties that will be provided in each specific area to the various land users (sub activity 1.1.2).

⁶² Aubert, La Pointe, Paulin Lacorne, Beaudin (Port de Paix); Chansolme, Source Beauvoir (chansolme), Haut des Monstiques, Carreay Datty, La Plate (Bassing Bleu), Pendu, L'Acul, Savane Carre, Moulin, Ravine Gros-Morne, Riviere Blanche, Riviere Mancelle, Boucan Richard (Gros-Morne), Platana (Marmelade), Riviere Laporte, Ravine Trompette, Joly, Piment, Ballon, Dubourgs, Margot, Beaudin (Pilate), Colline Gobert, Haut Martineau, Champagne, Bassin, Mapou, La Trouble, La Ville (Plaisance)

62. Hence, farmers in the target areas will also receive training by the Responsible Parties on the development of sustainable agroforestry business models that will contribute to both improving livelihood security and enhancing the use of sustainable land-use practices in the TR watershed (sub activity 1.1.2). The focuses of the trainings will be on:
- the expected impacts of climate change, particularly flooding, in Haiti and the associated consequences of these impacts on the population's livelihoods;
 - linkages between land-use and hydrology of the TR watershed, particularly the implications of unsustainable land-use practices on the frequency and intensity of flooding in the watershed;
 - promoting sustainable, climate-resilient agricultural practices such as slope stabilisation, riparian protection, and contour line farming, as well as the importance of protecting forest areas, as viable options for improving hydrological function of the watershed and reducing flood impacts;
 - the role of the community in sustainable charcoal production and reforestation, as a strategy for increasing climate resilience in the watershed; and
 - practical aspects of agroforestry as a climate-resilient livelihood alternative.

63. The above approach will create buy-in from beneficiary groups for the sustainable implementation of climate-resilient land-use practices such as agroforestry and securing commitment from beneficiary communities to maintain the adaptation interventions that will be implemented under Activity 1.2 during and after the project period. This approach will be enhanced by capacity-building initiatives and awareness-raising campaigns (sub activity 1.1.3) that will be designed and implemented throughout the project's seven target communes (going beyond just the 33 communal sections) through city hall meetings and community radio broadcasts. These campaigns will focus on: i) increasing the knowledge of people living in and in direct proximity to the TR watershed on sustainable land-use practices and promoting the uptake of these practices; ii) encouraging community members to participate in the development of community land-use plans; and iii) raising awareness among people living in the target communes on the impacts of climate change-induced flooding and effective adaptation and landscape management solutions for addressing these impacts.

Activity 1.2. Implement ecosystem-based flood management solutions in the Trois-Rivières watershed

64. This project activity will focus on reducing the impacts of climate change-induced flooding in the TR catchment and Port-de-Paix, specifically targeting degraded communal land that has been deforested in the past and that has resulted in increased flooding risk particularly for people living near the Trois-Rivières river (calculated at an estimated 292,600 people). An ecosystem based adaptation approach (EBA) will be taken by this activity through the implementation of 17,740 ha of agroforestry systems and the rehabilitation of 7,700ha of forest areas across targeted areas⁶³ within the 33 communal sections identified and validated through Activity 1.1. that will result in reducing the impacts of climate induced flooding by reducing peak runoff during extreme events.
65. Hydrological and economic studies commissioned by UNDP to support the development of the project indicate that implementing 17,740 ha of agroforestry systems and rehabilitating 7,700 ha of forests in priority areas in the watershed will considerably reduce the impacts of climate change-induced flooding. Specifically, implementing these EbA interventions will result in a 40% reduction in peak runoff, with rehabilitation interventions, in particular, expected to reduce floodplain extents in the target areas by 20% and 26% under the 20-year and 100-year flood scenarios, respectively. The EbA interventions are projected to result in a more than 50% reduction in the number of households affected by 100-year flood events (declining from 1,342 households at risk of flooding under the baseline scenario to 638 households with project interventions). Similarly, agroforestry and reforestation interventions under this project activity are expected to result in a 35% reduction in the number of households at risk to 20-year flood events in the TR watershed. This is representative of a decline from 463 under the baseline scenario to 300 houses at the end of the century under a 20-year flooding scenario. Further details on the modelling, calculations and methodologies used to determine these flood reduction benefits are presented in Sections 4.2 of Annex 2: Feasibility Study.
66. Specifically under Activity 1.2, the establishment of 17,740 ha of agroforestry systems (sub activity 1.2.1) and the rehabilitation of 7,700 ha of forest (sub activity 1.2.2) will be implemented and will include establishing nurseries, planting seedlings (e.g. for fruit production and reforestation) and providing ongoing technical assistance to end users including on the establishment and monitoring of nurseries, on the planning of seedlings, use of technical packages for agroforestry and monitoring of the agroforestry systems. To account for the growing times of many

⁶³ The total forest area in the watershed is 278 km², representing 31% the total watershed area, and the total urban area is 125.6 km², representing 14% of the total watershed area. Additionally, the total non-forest area (which will be targeted for rehabilitation with agroforestry or reforestation under this project activity) is 493.4 km², representing 55% of the watershed.

agroforestry species, the spaces between the agroforestry species will be filled with perennial food crops (e.g. plantains, sugar cane, cassava, pigeon peas and pineapple), in combination with annual crops (e.g. sweet potato, yams, and other annuals) (Tables 3 and 4). The implementation of agroforestry systems has a particularly high adaptation impact potential because of the provision of ecosystem goods and services beyond the target intervention areas (e.g. improved quality and quantity of water, more productive and stable soils, and crop pollination) combined with the creation of alternative livelihood options to unsustainable land uses (e.g. unregulated charcoal production, through the growing of species and shrubs that allow for regeneration through the use of correct pruning practices).

67. All agroforestry activities will also involve extensive engagements⁶⁴ — through workshops — with farmer and women's associations to encourage a progressive and gender-responsive transition towards sustainable agroforestry businesses that are sustainable over the long term. In addition the project will look to collect local and traditional best practices to enhance local ownership and appropriation. This includes the use of *jadden lakowu* and *ban manje* practices as adapted to local conditions and climates.

68. The rehabilitation of water towers through reforestation (sub activity 1.2.2) will also be undertaken in a participatory way and include: i) community engagement; ii) the provision of ongoing technical assistance for reforestation activities; iii) the development of long-term sustainable management plans for reforested areas at the sub-catchment level; and iv) encouraging the involvement of public institutions in the development and implementation of sustainable land management and reforestation strategies. Technical assistance and the development of management plan will be promoted through engagement workshops with community leaders, farmers and women's associations (sub activity 1.2.3)

Table 1. Perennial species suited for cultivation within the TR catchment.

Perennial species for the implementation of agroforestry systems in the TR catchment													
	Scientific name	Type of plant	Food	Shadow	Fodder	Fuel	Medicinal	Income	Timber	Hedge	Erosion control	Soil improver	Native (N), Currently Grown (G), or Newly Introduced (I) in Haiti
Fruit production													
Avocado (Avocatier)	<i>Persea americana</i>	Tree	X					X					G
Cocoa (Cacaoyer)	<i>Theobroma cacao</i>	Tree	X		X	X	X	X				X	G
Custard-apple (Cachiman)	<i>Annona reticulata</i>	Tree	X				X	X					G
Coffee Caféier	<i>Coffea arabica</i>	Shrub	X					X					G
Kassod tree (Cassia)	<i>Senna siamea</i>	Tree			X	X	X		X	X	X	X	G
Jamaica cherry (Cerise)	<i>Muntingia calabura</i>	Tree	X				X	X				X	N
Grapefruit (Chadequier)	<i>Citrus maxima</i>	Shrub	X				X	X					G
Lemon (Citronier)	<i>Citrus limon</i>	Shrub	X				X	X					G
Coconut tree (Cocotier)		Tree	X					X					G
Soursop (Corossol)	<i>Annona muricata</i>	Tree	X				X	X	X				N
Breadfruit (Lamveritable (arbre à pain))	<i>Artocarpus altilis</i>	Tree	X	X	X	X	X	X				X	G

⁶⁴ These engagements will not be undertaken using a cash-for-work approach, but rather encourage targeted groups to participate in the establishment of agroforestry systems and enhance the uptake of these systems as viable alternatives to unsustainable land uses (e.g. unsustainable charcoal production).

Leucaena (Lisina)	<i>Leucaena leucocephala</i>	Shrub			X	X			X		X	X	G
Mango (Manguier)	<i>Mangifera indica</i>	Tree	X					X					G
Orange (Orange doux/sure)	<i>Citrus sinensis</i>	Shrub	X					X					G
Forest													
American mahogany (Acajou)	<i>Swietenia mahagoni</i>	Tree		X		X	X	X	X				N
Mesquite (Bayawonn)	<i>Prosopis juliflora</i>	Shrub			X	X	X		X		X	X	G
Moringa tree (Benzolive)	<i>Moringa oleifera</i>	Tree	X		X	X	X		X		X	X	G
Cedar (Cèdre)	<i>Cedrella odorata</i>	Tree				X	X	X	X				N
Oak (Chene)	<i>Quercus petraea</i>	Tree		X				X	X				G
Bitterwood (Frene)	<i>Simaruba glauca</i>	Tree					X	X					N
Guaiac (Gaiac)	<i>Guaiacum officinale</i>	Tree		X			X	X	X				N
West Indian Laurel (Laurier)	<i>Ocotea leucoxylon</i>	Tree						X	X				G
Hispaniolan pine (Pin)	<i>Pinus occidentalis</i>	Tree		X		X		X	X				G
Ice-cream bean (Poix doux ou Sucrin)	<i>Inga edulis</i>	Shrub		X	X	X						X	G
Saman or Rain tree (Saman)	<i>Albizia saman</i>	Tree		X	X	X	X		X			X	G

Table 2. Examples of agroforestry systems *with* perennial species presented above deployed in, and suited for, the TR catchment. Before perennial species reach full tree/shrub size, the spaces between them can be filled with perennial food crops (e.g. plantains, sugar cane, cassava, pigeon peas and pineapple), in combination with annual crops (e.g. sweet potato, yams, and other annuals).

Example 1		
Stage (year)	Species	Ecosystem goods and services ⁶⁵
1	Ice-cream bean	<ul style="list-style-type: none"> Ice-cream bean seeds germinate at a rapid rate. As they contain nitrogen-fixing properties, ice-cream beans are planted in improved fallows. Ice-cream bean litter is high in nitrogen, lignins and polyphenols, which resultantly improves soil quality. Although the litter decomposes slowly, it provides for long-term accumulation of organic nitrogen and serves as effective weed control.
2	West Indian Laurels and/or <i>Saman</i> trees	<ul style="list-style-type: none"> West Indian Laurels and <i>Saman</i> trees provide fodder for livestock and shade for coffee and cacao plantations.
3	Cacao and Coffee	<ul style="list-style-type: none"> Cacao and coffee beans are sold to generate an income.
Example 2		
1	Moringa tree	<ul style="list-style-type: none"> Moringa trees grow at a rapid rate. Given their nutritional content and drought-resistance, moringa trees are an appropriate food source for ensuring food security. Moringa trees are suited to environments which experience strong winds and droughts and resultantly provide soil erosion control. The seed cake, which is a by-product of oil extraction, can be used as soil conditioner or fertiliser. Moringa leaves are a good source of protein, Vitamins A, B and C and minerals such as calcium and iron. In addition, the leaves make a useful mulch.

⁶⁵ Available at: <http://www.worldagroforestry.org>

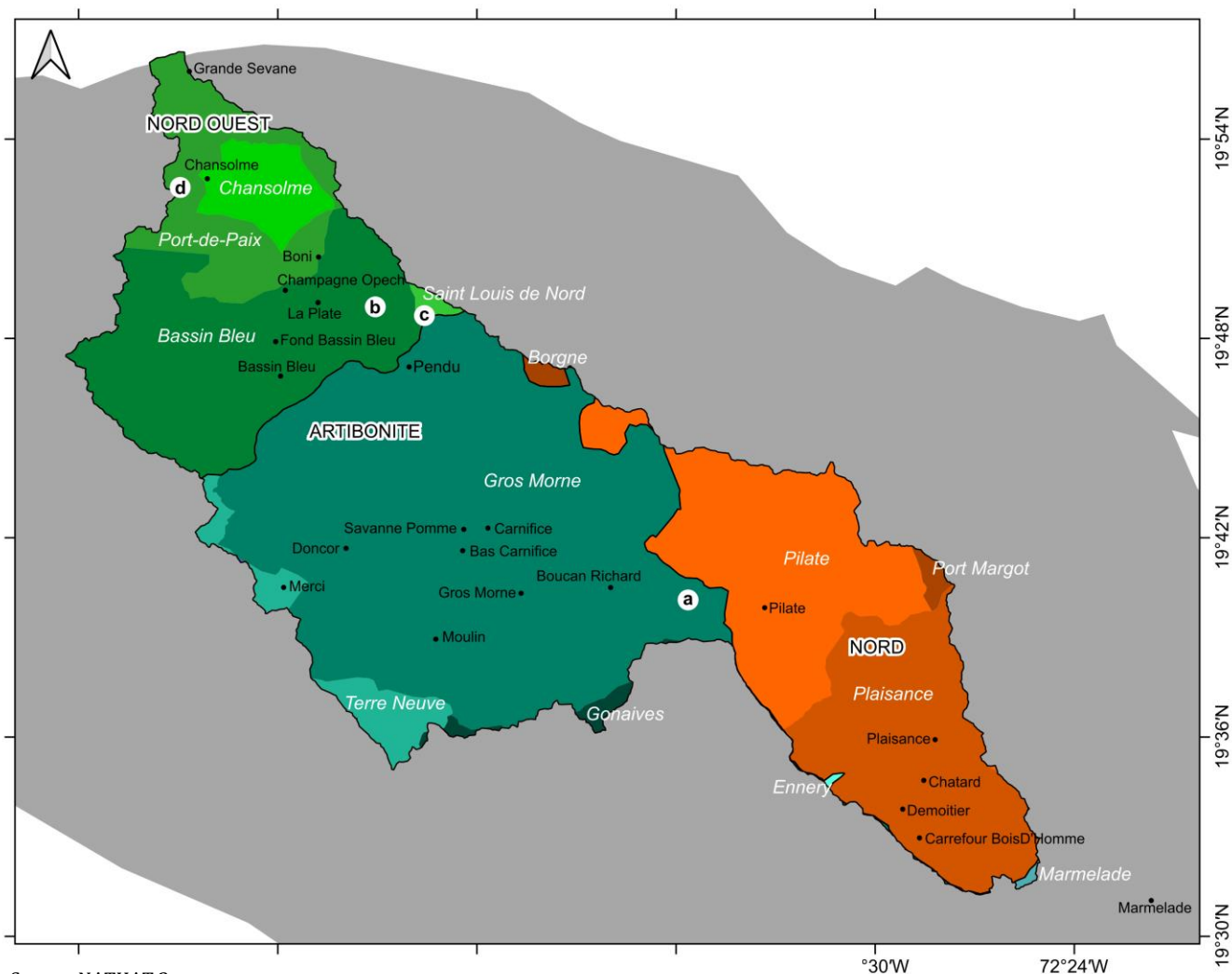
2	Soursop	<ul style="list-style-type: none"> Soursop is native to Haiti and is a source of food for humans. While small and early-bearing, soursop trees are planted as intercrops between larger fruit trees (such as mango, avocado and santol) and later uprooted when the fruit tree requires more space.
3	Mango or avocado	<ul style="list-style-type: none"> Mangoes and avocados are sold to generate income.
Example 3		
1	Bitterwood	<ul style="list-style-type: none"> Bitterwood is native in Haiti. The press cake produced from the milling operation is used as an organic fertiliser, particularly in coffee plantations and sugarcane, cotton and maize fields. In addition to their rapid and linear growth, bitterwood trees are adaptable to shallow soils, making them a suitable species for agroforestry.
2	<i>Saman</i> and /or American mahogany	<ul style="list-style-type: none"> <i>Saman</i> trees provide shade as well as a cool microclimate for plants that grow beneath their canopies. The seed pods contain a sweet-flavoured pulp which is often consumed by children. The pulp can also be used in making fruit beverages. <i>Saman</i> tree pods have a crude protein content of 12–18% (dry matter) with 41% digestibility for goats. The pods are also suitable fodder for cattle and horses. The trees are suitable for sustainable non-destructive wood harvesting methods, such as pollarding. <i>Saman</i> wood produces 5,200–5,600 kcal/kg of biomass fuel when burned and regrows rapidly after lopping or pollarding, making it a valuable source of high-quality firewood and charcoal. The <i>Saman</i> tree is highly prized for carvings, furniture and panelling because of the light and dark pattern the sapwood and the heartwood create.
3	Cacao and Coffee	<ul style="list-style-type: none"> Cacao and coffee beans are sold to generate an income.
Example 4		
1	Leucaena	<ul style="list-style-type: none"> Leucaena leaves have a high nutritive value (high palatability, digestibility, intake and crude protein content) and is suitable fodder. As it is in bloom almost throughout the year, Leucaena provides constant forage to honeybees. It is a suitable firewood species. Leucaena has a forceful taproot system which helps break-up compacted subsoil layers, improving the penetration of moisture into the soil and subsequently decreasing surface runoff. Leucaena is used as a shade tree on cocoa, coffee and tea plantations. It often serves as a shelterbelt, providing shade and wind protection for a variety of crops, particularly during early growth. The tree has high nitrogen-fixing potential (100–300 kg N/ha a year) related to its abundant root nodulation. Leucaena was one of the first species to be used to produce green manure in alley-cropping systems. The leaves, even with moderate yields, contain enough nitrogen to sustain a maize crop.
2	Cedar	<ul style="list-style-type: none"> Cedar flowers are a source of nectar for honey production. Cedar trees are suitable for firewood. Cedar wood is lightweight and comparatively soft. It is suitable timber for furniture, decorative veneer, musical instruments, wooden novelties and doors. As the trees have many low branches and a spreading crown, they provide shade and serve as windbreakers in courtyard gardens and cocoa and coffee plantations. Cedar trees can be planted as ornamentals along roads and in parks. They are planted for this purpose in, for example, peninsular Malaysia, Papua New Guinea and Singapore. Cedar trees are highly susceptible to <i>Hypsipyla</i> infestations and as a result, it is recommended that the trees are planted in mixed plantations, for example with <i>Leucaena leucocephala</i>.
3	Cacao and Coffee	<ul style="list-style-type: none"> Cacao and coffee beans are sold to generate an income.

69. The implementation of agroforestry activities will be primarily focused for farmers with agricultural plots that are suitable for farming and have a certain level of degradation. The implementation of reforestation activities (including EBA activities), will be focused for farmers/landowners with land that has an accelerated level of degradation and

is not suitable for agricultural practices (high slopes, inaccessibility). In both cases, the properties of the public domain of the State will also be considered.

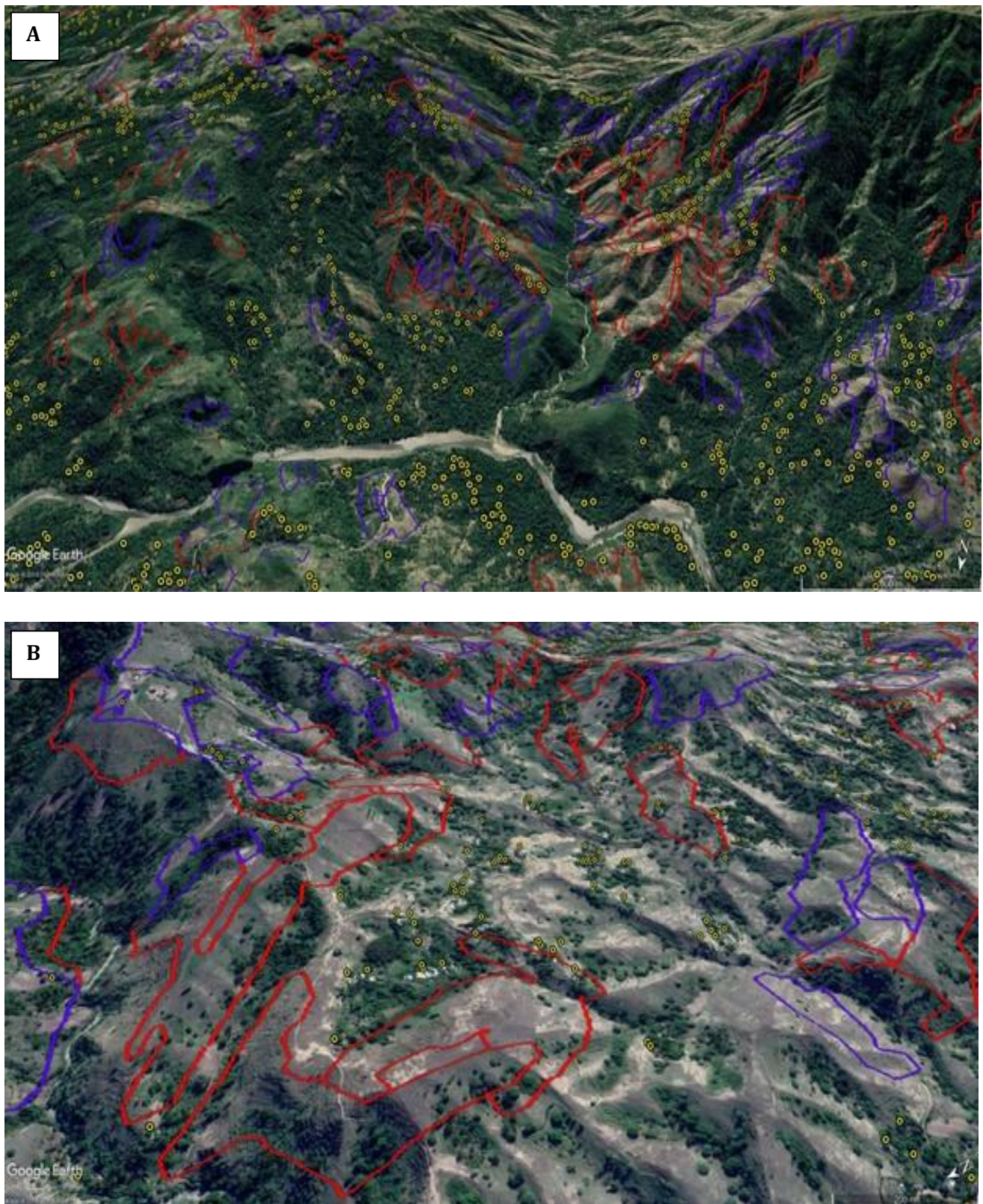
Priority intervention areas for agroforestry and reforestation interventions

70. The priority areas for the implementation of agroforestry and reforestation interventions in the TR watershed were defined using a multicriteria model that considered three variables. These were the slope of the terrain, distance from river channels and a maximum natural vegetation cover of 50%. Data from the ALOS DSM model — a global digital surface model with a 30-metre spatial resolution pixel, generated from the Panchromatic Remote-Sensing Instrument for Stereo Mapping (PRISM) on the ALOS satellite — was used to run the multicriteria model. Once the polygons identified as priority areas were established, the multicriteria model was then built to classify the optimal land use of each polygon into two intervention options, agroforestry or reforestation. The key variables used to classify polygons were density of houses/buildings and proximity to rivers and/or water sources. Finally, an assessment of available agricultural land was undertaken, informed by engagements with farmers to determine the expected participation levels in the implementation of agroforestry systems under the project. Since not all agricultural land where agroforestry will be introduced is classed as a priority area for reforestation, the actual area reforested (through the introduction of both agroforestry and reforestation) under the project will be larger than the prioritised areas. This will extend beneficiary farmers within the TR catchment beyond target communities whose land falls within priority zones. Based on an assessment of all these factors, 77 km² of land will be prioritised for reforestation and a total of 177.4 km² for agroforestry, considering participation rates. Of this 177.4 km² for agroforestry, 75.2 km² is classified as a priority area for agroforestry systems, and a further 102.2 km² is classified as a non-priority area. Further details on the site selection process undertaken for the proposed project are presented in Section 10 of Annex 2: Feasibility Study.
71. The locations of priority sites for reforestation and agroforestry interventions are presented in Figure 2Figure 3a and 3b below.



Source: NATHAT 2

Figure 2. Map showing the northern part of Haiti where the project intervention sites are located.



Source: Project Feasibility Study (Multicriteria model analysis developed for the project through Google Earth)

Figure 3a and b. Priority areas for reforestation (blue polygons) and priority areas for agroforestry (red polygons) interventions for various areas within the TR catchment, demonstrating the results from the classification method. a) Department Artibonite, Gros Morne Commune, Boucan Richard Section; and b) Bassin Bleu Commune, Nord Ouest Department, La Plate Section.

Output 2. Climate-resilient agricultural practices, optimised value chains and social safety nets established to promote SLM and reduce degradation in the Trois-Rivières watershed

72. Output 2 will be fully co-financed by Heifer. The key objectives of the Heifer support are to: i) strengthen food security governance; ii) encourage sustainable development in the agricultural sector; iii) safeguard natural resources in the TR watershed; and iv) promote access to a sustainable social safety net that encourages local agricultural development. While most of the Heifer-funded interventions can be implemented in the absence of the proposed GCF project, its impact will be minimised without the key adaptation interventions that are to be implemented under Output 1 of the proposed project. Therefore, the co-finance has been made available conditional on the approval of the GCF project. Likewise, the proposed project is dependent on the co-financed interventions to complete the integrated approach to climate-resilient flood management in Haiti (Output 1) and maximise the paradigm shift potential of the project. This will be achieved by facilitating a transformative shift in Haiti's agricultural sector from unsustainable practices (e.g. the cultivation of annual crop types and clearing of forests for charcoal production) towards sustainable options that are resilient to the impacts of climate change-induced flooding.
73. To facilitate this shift, a suite of complementary interventions will be implemented to promote the adoption and implementation of sustainable land-use practices in Haiti. This will be achieved by: i) strengthening the technical and institutional capacity of people involved in agriculture at the commune, inter-commune and department levels for implementing productive climate-resilient agricultural practices (such as agroforestry systems with alley cropping and contour bunds, as well as local Gad Manjé⁶⁶ systems); ii) enhancing smallholder farmers' access to financial resources to facilitate the uptake and implementation of climate-resilient agricultural practices over the long term; and iii) establishing a social protection system for chronically food insecure households in vulnerable areas affected by climate change impacts, particularly flooding.
74. Together, interventions under this output will stabilise access to markets for farmers and producers, incentivising the uptake of climate-resilient, sustainable land-use practices. By diversifying agricultural produce and agroforestry system varieties to prevent seasonal production peaks and providing technical support to farmers to adapt supply to demand while providing inputs that will facilitate their processing and their climate resiliency. This, in turn, will contribute to regulating price volatility of agricultural produce, attracting further investment into sustainable products and making the adoption of alternative livelihood options more feasible for the vulnerable people living in the TR watershed. As a result of these interventions, the project will enable vulnerable farmers and households living in the watershed to invest in climate resilient productive practices through a sustainable land management perspective in keeping with the EBA interventions and land planning established through Output 1. This will in turn reduce the adverse social and economic impacts associated with these events and promote livelihood security amongst these people.
75. These interventions will further complement the activities that will be implemented under the GCF-funded project currently under development, entitled *Increasing resilience of vulnerable farmers in Southern Haiti* being implemented with the support of the Food and Agriculture Organization (FAO) on the South Department of Haiti. While the geographic scope of each project will prevent from in overlap of any on-the-ground interventions the outcomes of these projects related to institutional capacity building at national level will be strongly complementary securing an integrated approach to land and water resources management that will contribute to a paradigm in Haiti towards climate-resilient sustainable development.

Activity 2.1. Strengthen institutional capacity at the commune, inter-commune and department levels in Haiti's Trois-Rivières watershed for productive and sustainable land-use management

76. Under this activity, a capacity needs assessment will be conducted for the agricultural sector in the 7 targeted communes to identify the technical and institutional requirements for transitioning the sector from unsustainable land-use practices towards a sustainable landscape management (SLM) approach to land and water resources management that is climate resilient (Sub activity 2.1.1). Capacity will be assessed in the seven target communes in the TR watershed, as part of this assessment the project will consult with farmers associations at a commune and sub commune level. From the capacity needs assessments, opportunities will be identified, and plans made to enhance the management of natural resources and promote the uptake of climate-resilient agricultural practices to increase productivity.

⁶⁶ Gad Manjé translates to "a band of food", hedgerows that comprise perennial crops (e.g. plantains and cassava), in combination with annual crops (e.g. sweet potato and yam). The hedgerows provide structural integrity to stabilise soils to prevent erosion, whilst the crops provide a source of food security and income generation.

77. To facilitate the uptake of these new sustainable practices, governance mechanisms and frameworks for SLM will be developed in the TR watershed through the establishment of communal development councils (Sub activity 2.1.2). These councils will represent all agricultural sector stakeholders, including smallholder farmers in the seven communes both during and after the project implementation with their primary function being to enhance the management of natural resources in combination with improving the climate-resilience of agricultural practices and enhancing sustainable productivity. Members to these councils will be appointed by Ministry of Agriculture in collaboration with the Ministry of Environment and the local authorities. Multi-sectoral governance structures will also be established to oversee and manage the implementation of interventions designed to address the priority areas identified through the capacity needs assessment developed under Sub activity 2.1.1.

78. Support for the governance structures developed under Sub Activity 2.1.2 will be provided through strengthening the capacity of relevant government entities, including the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), National Coordination of Food Security (NCFS) and Ministry of Social Affairs and Labour (MSAL), to implement SLM at the department level (Sub activity 2.1.3). These sectoral entities and ministries have a primary role to play in the implementation of sustainable land management hence training and information workshops to members of these ministries will allow for increased ownership and sensitization of their role and mandates for sustainable land management. Training and information workshops under this subactivity will focus on the content of management plans, implementation strategies, and the role and implications of departmental stakeholders. This will enable the adoption of SLM practices to be guided in a manner that is compatible with the effective functioning of the entire watershed and that contributes to enhancing flood management across the TR watershed.

Activity 2.2. Enhance the technical capacity and access to finance of national and local representatives involved in agriculture in the Trois-Rivières watershed for adopting climate-resilient sustainable land-use practices

79. This project activity will increase the capacity of farmers in the 7 target communes to implement climate-resilient agricultural techniques and land-use practices, using the findings from the capacity needs assessments conducted as part of Activity 2.1. This will be achieved through implementing targeted adaptation interventions in Haiti's TR watershed to optimise the agricultural value chain and promote the use of climate-resilient agricultural techniques across the sector (Sub activity 2.2.1). Such interventions will include enhancing the transportation of agricultural produce (e.g. by developing agricultural tracks), as well infrastructure upgrades to address decreasing water security caused by the impacts of climate change-induced flooding. Infrastructural upgrades will also be undertaken in the form of increasing the storage capacity and quality of post-harvest facilities, as well as establishing local processing facilities for agricultural produce to optimise agricultural production in the watershed. These investments will be communal in nature and will be prioritized with the support of local farmers association to benefit all members.

80. Technical capacity provided will also include the delivering of technical skills training on climate-resilient agricultural techniques and SLM to farmers. This will be done through a farmer field school approach where approximately 30 farmers will work in groups (estimated 180 groups along the 33 subcommunes) to put in practice the training provided. These members will then form their own group and provide training to 10 of their neighbors. Capacity building will involve: i) enhancing their ability to effectively manage and organise irrigation and other associations; ii) facilitating participatory access to agricultural inputs, farming equipment, maintenance facilities; and iii) upskilling of maintenance staff. These interventions will be supported by the provision of climate-resilient agricultural inputs (e.g. climate-resilient seed varieties) to vulnerable households that depend on subsistence agriculture for their livelihoods (Sub activity 2.2.2).

81. Strengthening the above key elements of the agricultural value chain in Haiti's TR watershed will not only enhance the climate resilience of agricultural production in the country, but also contribute to increased food security in the watershed. Sustainability of these investments will be supported by looking to improve the access to finance to producers in a manner that is appropriate for communities in line with the sustainable productive management capacities that are being created. Hence this activity will also develop social feasibility assessments, including risk assessments and financial mapping analysis (Sub activity 2.2.3) to inform the establishment and enhancement of Agricultural Village Savings and Credit Associations (VSCA) that will be led by the communities and supported through technical expertise by the project as part of Activity 2.3. Within the framework of the proposed project, VSCAs are levers for households benefiting from the social safety net to develop small economic activities with the credits or the amount of "remunerated" savings obtained at the end of the year, in order to increase their income in a sustainable way and establish a means to enhance sustainable productive investments and enhancing local markets.

Activity 2.3. Implement a social protection system to support vulnerable households at risk to food insecurity because of climate change

82. This project activity will support households affected by chronic food insecurity to recover their nutritional and financial autonomy being those most vulnerable to climate change-induced flooding and resorting to unsustainable land management practices. Subsistence farmers living near floodplains along the TR watershed are particularly vulnerable to these events, which often result in the near-complete destruction of their agricultural yields grown to support their livelihoods. When this happens, most of these farmers take up unsustainable charcoal production as a last resort to support their livelihoods, which in turn results in increased degradation of the landscape, exacerbating soil erosion and sedimentation of the TR watershed and its tributaries. While Activities 1.2 and 2.1 provide a long-term solution to addressing these negative impacts, this activity will provide the required immediate relief to vulnerable people affected by these events, concomitantly reducing further pressure on the environment by providing an alternative option to resorting to unsustainable charcoal production.
83. Specifically, Activity 2.3 will facilitate the development of a social safety net whereby food coupons will be provided to vulnerable households affected by food insecurity. The food coupons will be designed for the project and will be provided by Heifer. To determine eligible households for these coupons, vulnerable households in the 33 communal sections will be identified through a site survey and/or assessment, with their details captured in a database for future reference (Sub Activity 2.3.1). Recipients of these coupons will be able to redeem them in exchange for local produce (food basket) at selected local markets (Sub activity 2.3.2). An estimated 934⁶⁷ farmers (households) will be selected to participate in the operation of the food coupons mechanism. Participating farmers will receive training on *inter alia* hygiene, modalities of exchange and personal security (Sub activity 2.3.3).
84. This activity will also support in the the creation of 150 new VSCAs in the TR watershed (Sub Activity 2.3.4). VSCAs are relevant as they provide their members with small, flexible financial services of savings, microcredit and micro-insurance (see footnote 63 above) for capital investments. Hence, VSCAs will become a means to mobilize local financing even after the project is completed. It is important to note that GCF grants nor cofinancing will be provided in the capitalization of the VSCAs rather these will be capatilized by the initial investment provided by each of the VSCA members as a way to ensure full community ownership of the VSCA and grant flexibility in the bylaws that are created. The VSCAs will be created with the support of a network of an estimated 150 village agents (Sub activity 2.3.5) who will act as extension officers to the VSCAs and that will be formed by the project. The village agents will have as their primary responsibilities the monitoring of existing VSCAs and creation of new ones. Moreover, to optimise selected farming markets contributing to the implementation of the food coupons mechanism, market performance will be monitored regularly, and the relevant adjustments made to the system where required. This process will be community-driven, led by the selected network of village agents. Through these actions an exit strategy for the food coupon mechanism is created that is linked to the establishment of agroforestry systems (long term productive means) as well as in the creation of community appropriate financial mechanisms (VSCAs) and capacities (village agents) within the target areas to mobilize saving for continued capital investment.

Output 3 Strengthened governance and capacity for climate-resilient integrated water resources management (IWRM)

85. At present, the government is organised along departmental and communal lines. As a result, there is an overlap between existing water governance structures, particularly at the catchment and sub-catchment levels. This leads to challenges in coordination and planning, as well the effective and efficient implementation of an integrated approach to water resources management in the TR watershed. While the GoH has made good progress in drafting the Water Act⁶⁸ to address these challenges, there is a need for technical assistance for the 'last mile' of its drafting. Under Output 3, the capacity of the GoH will be strengthened to develop and implement the Water Act, which is an essential legal foundation for enabling participatory, integrated water resources management in Haiti's TR watershed. This will involve: i) drafting provisions to Haiti's Water Act for the adoption of an integrated approach to water resources management (Sub activity 3.1.1); ii) establishing Catchment IWRM Committees (Comités de GIRE des Bassins Versants; CGBVs) within 31 catchments in Haiti (Sub activity 3.1.2); and iii) establishing Sub-Catchment Water Resource Users Associations (Associations d'Usagers des Ressources en Eau du Sous-bassin versant; AssURES) within the sub-catchments of the 31 catchments (Sub activity 3.1.3). These committees will

⁶⁷ Averaging 133 farmer households per commune (7) based on an estimated prioritization taken from Haiti's PROCSIMAST (Programme de Renforcement Opérationnel du Ciblage et Système d'Information du Ministère des Affaires Sociales et du Travail) which is an official master list of vulnerable people by community provided by the Ministry of Social Affairs. From this list the following people will be selected: Women head of household in charge of kids and other elderly and/or disabled with no income or low income (living under poverty level); 60 + years of age; Disabled and Residing permanently in the community. This will allow the programme to focus on the most vulnerable and with least adaptive capacity.

⁶⁸ The Water Act acts as regulatory policy towards water integrated management that may take the form of a National Regulatory Decree.

work with different stakeholders in the 31 catchments and sub-catchments to manage the efficient use of land and water resources. Furthermore, the committees will be responsible for fostering community empowerment and ownership over these critical resources under future climate change conditions. Together, these activities will ensure that the Water Act is developed and implemented to respond not only to national level priorities, but also to the adaptation needs of vulnerable communities living in the TR watershed.

86. To support the implementation of the Water Act and the transition towards an integrated management structure for land and water resources in the TR watershed, a Catchment Integrated Water Resources Management Committee (CIWRMC) will be established (Sub activity 3.2.1). This committee will work with representatives from productive sectors (e.g. agriculture), land users at sub-catchment level and Sub-Catchment Water Resources User Associations (SCWRUAs) to develop, implement and manage an inclusive, integrated water management governance framework in the watershed. This will involve these committees working together to develop climate-resilient IWRM plans (Sub activity 3.2.2), which define roles and responsibilities for end users that promote sustainable water resources management and an equitable distribution of the available resources at the catchment and sub-catchment levels. The CIWRMC, together with the relevant land users, SCWRUAs, CGBVs and AssURES will ensure that the management of water resources in the catchment considers climate change impacts, particularly the expected impacts at landscape level (Sub activity 3.2.3) as well as on upstream and downstream flow dynamics.
87. Ensuring that all adaptation interventions are monitored throughout the implementation phase is critical for facilitating adaptive management and assessing the effectiveness of these interventions in reducing climate change-induced flooding in the TR watershed. The implementation of EbA interventions under Output 1, combined with the improved governance and capacity of relevant decision-makers and actors involved in land and water resources management (Outputs 2 and 3), is expected to reduce the impact of climate change-induced flooding on the TR watershed and communities living nearby, while concomitantly catalysing a shift from segregated land and water resources management towards the use of an integrated governance framework that is resilient to the impacts of such flooding. Moreover, these interventions will generate benefits for the health of vulnerable individuals, households and communities living in the TR watershed, reducing the spread of water- and vector-borne diseases as contamination of freshwater sources (e.g. rivers) and food is reduced.
88. To ensure that these adaptation benefits continue to be realised by all beneficiary groups throughout the project period, continuous health monitoring and impact evaluations will be undertaken under Activity 3.3. This Monitoring and Evaluation (M&E) will commence at the end of Year 1 and will continue throughout the implementation phase until project closure. UNDP will commission an expert to undertake the health monitoring and impact evaluations of the EbA flood management solutions (Sub activity 3.3.1). The World Health Organisation (WHO) will provide technical support to this expert, as they are currently monitoring cases of water- and vector-borne diseases in Haiti and therefore have a pre-defined methodology that would enable comparison studies to be undertaken across watersheds. The contracted expert will be responsible for: i) undertaking a baseline assessment of the prevalence of water- and vector-borne diseases within the TR watershed (Sub activity 3.3.2); ii) analysing the impact of climate change-induced flooding on the spread of these diseases; and iii) assessing and reporting on the health benefits of the adaptation interventions implemented under the project, particularly the reduced spread of water- and vector-borne diseases as a result of implementing EbA interventions under Output 1 (Sub activity 3.3.3). Finally, lessons generated through the implementation of all project interventions will be shared through the relevant committees and associations at the catchment and sub-catchment levels to inform adaptive management of these interventions under future climate change conditions (Sub activity 3.3.4).
89. By strengthening national capacities for the implementation of the Water Act, promoting the adoption of an integrated, climate-resilient water management governance framework at the catchment and sub-catchment levels in the watershed, and monitoring the impact of IWRM plans and EbA interventions (Output 1) on flooding and water resources management in the TR watershed, the interventions under Output 3 will contribute to establishing the governance framework required to facilitate the adoption of a climate-resilient integrated water resources management (IWRM) in Haiti's TR watershed. The first step that is required for this process is to strengthen the capacity of the GoH to develop and implement the Water Act, which is an essential legal foundation for enabling participatory, integrated water resources management in Haiti's TR watershed. Once this is done, governance around water resources at the local level will then be improved in line with the Water Act to promote the more sustainable management of these resources, through establishing the necessary local-level regulatory structures. Finally, to complete the cycle of understanding and improving water resources management, adequate monitoring of these resources — that also considers flooding and its impacts on health — is important to feed back into the regular updating of the Water Act and facilitate adaptive management through the local-level regulatory structures.

90. Project activities that will be implemented under Output 3 are summarised below. Further details on these activities, including on the associated sub-activities and deliverables, are presented in Section E.6 of this Funding Proposal and Section 9 of Annex 2: Feasibility Study.

Activity 3.1 Strengthen national capacities for the implementation of the Water Act

91. Under this activity, the capacity of the GoH will be strengthened to develop and implement the Water Act, which is an essential legal foundation for enabling participatory, integrated water resources management in Haiti's TR watershed. At present, the government is organised along departmental and communal lines. As a result, there is an overlap between existing water governance structures, particularly at the catchment and sub-catchment levels. This leads to challenges in coordination and planning, as well the effective and efficient implementation of an integrated approach to water resources management in the TR watershed. While the GoH has made good progress in drafting the Water Act to address these challenges, there is a need for technical assistance for the 'last mile' of its drafting. Under Activity 3.1, provisions will be drafted to the Water Act to ensure that it promotes an integrated approach to water resources management, including considerations for the coordinated development of water, land and related resources (Sub activity 3.1.1). This will contribute towards: i) maximising economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems under future climate change conditions; and ii) facilitating efficient, integrated adaptation responses to the impacts of climate change in Haiti. Provisions to the Water Act will also recommend the establishment of Catchment IWRM Committees (Committees de GIRE des Bassins Versants, CGBVs) within each of the 31 catchments in the country (Sub activity 3.1.2), and the establishment of Sub-Catchment Water Resource Users Associations (Associations d'Usagers des Ressources en Eau du Sous-bassin versant, or AssURES) (Sub Activity 3.1.3).

Activity 3.2. Develop an integrated, climate-resilient water management governance framework targeting the catchment and sub-catchment levels in the Trois-Rivières watershed

92. Given that the TR watershed is one of the most vulnerable watersheds in Haiti to climate change-induced flooding, the implementation of an integrated water resources management strategy is a priority action for increasing the climate resilience of its population. Under this activity, an inclusive and equitable water management governance framework will be developed for the TR catchment, namely the Catchment Integrated Water Resources Management Committee (CIWRMC) (Sub activity 3.2.1). This committee will be made up of actors directly or indirectly involved in the agricultural and water sector (state institutions including the MoE and Haiti's Hydrometeorological Unit (UHM), local elected officials, farmers, schools (in the integrated development approach), representatives of civil society (economic or social organizations, producers' organizations), associations and grassroots groups) and its members will be defined during the consultative workshops.

93. Together they will develop climate-resilient Integrated water resource management plans for end users at the sub-catchment and catchment levels that promote sustainable water resources management and equitable distribution of the available resources among all users (Sub activity 3.2.2). The gender-responsive IWRM plans will define roles and responsibilities of institutions and civil society stakeholders for water resources management (complementary to the decentralised management of water resources to be established in the Water Act under Activity 3.1). It will also promote a landscape management approach that will be linked to the implementation of community land-use plans developed under Activity 1.1 considering gender dynamics (Sub activity 3.2.3). The CIWRMC, will also work with the relevant land users and SCWRUAs, to ensure that the management of water resources in the catchment considers climate change impacts, particularly the expected impacts at landscape level as well as on upstream and downstream flow dynamics. Training on the climate-resilient IWRM plans will also be delivered to these stakeholder groups, focusing on the application of these plans in decision-making (Sub activity 3.2.4).

94. The combined result of these actions will be the establishment and operation of an integrated governance framework that will contribute to preserving climate-resilient, sustainable land and water resources management beyond the lifetime of the project. During the implementation of Activity 3.2, considered efforts will be made to securing equitable representation, participation and leadership of women.

Activity 3.3. Implement regular monitoring and evaluation of water resources at the catchment and sub-catchment levels to support the implementation of integrated water resources management (IWRM) plans

95. From project inception (Year 1), continuous health monitoring and impact evaluations will be undertaken and will continue throughout the implementation phase. The implementation of EbA solutions under Output 1 of the project are expected to significantly reduce the extent of climate change-induced flooding in the TR watershed and reduce erosion caused by extreme rainfall events. Such reductions in flood extent are also likely to reduce the spread of water- and vector-borne diseases, as contamination of freshwater sources (e.g. rivers) and food is reduced. By monitoring the evolution, frequency and location of flood-related illnesses from the start of the project, the impact of the project can be assessed once a sufficient time series of observations is completed. UNDP will commission

an expert to undertake the health monitoring and develop impact evaluations of the EbA flood management solutions (Sub activity 3.3.1). The World Health Organisation (WHO) will provide technical support to the health monitoring expert, as they are currently monitoring cases of water- and vector-borne diseases in Haiti and therefore have a pre-defined methodology that would allow comparison studies to be undertaken across watersheds. The contracted expert will undertake a baseline assessment of the prevalence of water- and vector-borne diseases within the TR watershed and analyse the impact of climate change-induced flooding on the spread of these diseases (Sub activity 3.3.2). Following this assessment, the expert will report on her/his findings and provide the required health impact data to assess the health benefits of the EbA interventions implemented under the project.

96. Simultaneously, the project will engage an integrated water resource management expert that assisted by representatives from SCWRUAs and in consultation with the UHM, will monitor dry season baseflow at four locations along the main stem of the Trois-Rivières (TR) river. This will be done to provide a stable indicator of the increased infiltration capacity of the soil because of forest rehabilitation and restoration activities to be implemented under Activity 1.2 of the project (Sub activity 3.3.3). The monitoring will facilitate an evidence-based assessment of these EbA solutions as effective measures for reducing the impacts of climate change-induced flooding in the TR watershed and for improving the health of the watershed's population. Finally, lessons generated through the implementation of all project interventions will be shared through the relevant committees and associations at the catchment and sub-catchment levels as well as to relevant national ministries including the UHM to inform adaptive management of these interventions under future climate change conditions (Sub activity 3.3.4).

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

97. The project will be implemented following UNDP's Full Support to National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement (SBAA) between UNDP and the Government of Haiti signed on 28 June 1973, the Country Programme Action Plan (CPAP), and as policies and procedures outlined in the [UNDP - POPP - Chapter](#).
98. The national executing entity - also referred to as the national 'Implementing Partner' in UNDP terminology is required to implement the project in compliance with UNDP rules and regulations, policies, and procedures (POPP), including the NIM Guidelines ([POPP NIM](#)). These include relevant requirements on fiduciary, procurement, environmental and social safeguards, and other performance standards. The (national) Implementing Partner for this project is the Ministry of Environment (MOE).
99. Implementing partner (IP) 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. A subsidiary agreement (project document) will be established between UNDP and MoE as per Article 3 of the SBAA. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner".

Executing Entity (IP per UNDP terminology)

100. The Ministry of Environment of Haiti (MoE) will act as an Executing Entity (IP) for the project and as such 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 GCF resources. The MoE as Executing Entity will designate a National Project Director, responsible for the overall direction, strategic guidance and timely delivery of the Project. The project, through the National Project Director, will inform the Technical Secretariat of the National Committee on Climate Change of the progress of the project's implementation to ensure alignment and coordination with the GoH's national climate strategies and policies.
101. The MoE is a national Ministry for the Government of Haiti. It was created by the Haitian law of January 28, 1995 with its mission, attributions and intervention modes being defined in decrees of January 26, 2006 (Décret portant sur la gestion de l'environnement et de la régulation de la conduite des citoyens) and the decree of August 16, 2020 (décret organisant le Ministère de l'environnement). It is the National Ministry responsible for overseeing the environment and natural resources for Haiti as mandated by law. Its attributions includes: (1) to formulate, guide and enforce the GoH's policy on environmental matters; (2) to regulate any public or private action falling within the domain of the environment and; (3) to guarantee sovereign measures conducive to the protection of the environment, the conservation of biodiversity, the fight against climate change and a better living environment for the benefit and well-being of the population. The MoE acts as the National Designated Authority on behalf of the GoH to the GCF.
102. The MoE delegates its various functions to numerous agencies and institutions related to its management area, among these is the Change Directorate which acts as the lead environmental body in the system. As a public institution, it receives an estimated USD 12million annual funding from the GoH's national budget. It has expertise in implementing the enabling activities such as national communications, Biennial reports. The MoE

is currently executing the CBIT project with UNDP oversight. The MoE also collaborates with partners such as civil society organizations in the execution of this work.

103. A HACT microassessment has been developed for the MoE identifying its capacity to manage projects with UNDP and partner support. The HACT assessment identified the MoE's overall risk level as moderate taking into account a low risk rating in for partnerships and collaborations, moderate risks in governance, project management and human resources and a significant risk in monitoring and evaluation and procurement and financial management.
104. The Government of Haiti has requested UNDP to provide direct project services for this project, including in the procurement of goods and services through UNDP processes, providing direct payments to suppliers and Responsible Parties, hiring of project staff, as well as in the delivery of training services. Under these terms UNDP will make payments and provide related services at the instruction of the MoE who will be responsible for the preparation of terms of references and selection criteria. The UNDP and the Government of Haiti acknowledge and agree that those services are not mandatory and will be provided only upon Government request and specified in the Letter of Agreement (LoA). If requested, the direct project services would follow UNDP policies on the recovery of direct project costs relating to GCF funded projects. The project has been designed to enable UNDP to be able to provide support as the government needs for execution under its support to NIM Modality that has been reflected within the project's budget, in addition UNDP is providing co financing support to enhance project management and will provide implementation support in the delivery of activities under Output 3.
105. UNDP will provide implementation support in the delivery of activities included within the project's Output 3. A firewall will be implemented to separate the work being provided for the implementation of Output 3 and UNDP's oversight responsibilities in its role as an AE. A Letter of Agreement (as specified in paragraph 86) will be signed between the Government of Haiti and UNDP specifying UNDP's role in Output 3

Accredited Entity

106. UNDP provides a three – tier oversight and quality assurance role involving UNDP staff in Country Offices and at regional and headquarters levels. The quality assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. Project Assurance must be independent of the Project Management function; the Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. 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 supervision, (ii) Oversight of project completion, (iii) Oversight of project reporting."
107. The justification to engage UNDP support services responds to HACT evaluation assessment of the MoE in particular in regards to procurement and financial management processes. UNDP will be the best entity to engage various partners from both public and private sector, either following competitive procurement process or other partnership arrangement. Such support services and the cost involved, shall be detailed in a Letter of Agreement (LoA) for UNDP support services. As the support services will be provided by UNDP, usual UNDP regulations, rules and procedures apply. A procurement and administrative analyst will also be hired to support the project operations.

Responsible Parties

108. Responsible parties will be overseen by and report to the MoE in its role as Executing Entity. As such they will enter upon written agreements with the MoE specifying their role in project implementation including deliverables, budgets and workplan. Responsible parties will report on the usage of project funds and delivery of the workplan to the MoE.
109. Heifer International Haiti will act as Responsible Party for Output 1. Heifer International Haiti will also execute all activities under Output 2 through its own co-finance. Once the FAA is signed between UNDP and the GCF and upon indication by the MoE, a Responsible Party Agreement will be established with Heifer International Haiti on behalf of the Executing Entity for the provision of services for the execution of these outputs.
110. Heifer International Haiti is recognized in Haiti as a non-profit corporation working in Haiti since 1999 by supporting rural communities through sustainable and integrated crop-livestock projects as a means of poverty reduction. Heifer International Haiti has managed more than 20 million in Haiti in the past 8 years and has plenty of experience working in the northern part of the country with community organizations, farmers organizations, local authorities, and government institutions. Its work places an emphasis on community mobilization, resilience, social capital development, environmental protection, personal leadership, the promotion of gender equity, agricultural

production and food security, agribusiness development, and the mobilization of young people and women in agriculture. It is currently implementing a portfolio in Haiti of over USD12 million.

111. Heifer International Haiti holds offices in the Trois Rivières (TR) Watershed and has demonstrated implementation capacity (low-risk rating) as evaluated through UNDP's Harmonized Approach to Cash Transfers (HACT) assessments. UNDP's HACT assessment noted Heifer's high capacity for monitoring (including the use of a QR system for project beneficiaries) and reporting, the presence of sufficient technical staff that receives continuous training to address donor and program needs and its appropriate financial accounting measures and procedures.

Project Board

112. The Project Board will ensure that activities under all three outputs of the project comply with the strategies, principles and overall approach outlined in this proposal. The Project Board is responsible for making decisions by consensus. Its responsibilities including recommendation for UNDP and Implementing Partner approval of project plans, substantive revisions and acceptance of the project progress reports. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, the best value for money, fairness, integrity, transparency and effective international competition. In the case where a consensus cannot be reached, the final decision shall rest with UNDP. Project reviews by the Board will take place at least twice a year, or as necessary when raised by the Project Manager or one of the Board members. The Board must be consulted by the Project Manager for decisions where there are substantial changes required to the Annual Workplan as per deviation tolerances set by a donor or UNDP, whichever is lower.
113. The specific roles of the Project Board are to:
- set strategic direction, reinforce government leadership of the program and coordinate all interventions;
 - provide guidance and agree on possible countermeasures/management actions to address specific risks;
 - authorise the Annual Work Plan (prior to approval by UNDP);
 - conduct bi-annual meetings to review the Project Progress and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to the approved Annual Work Plan;
 - provide ad-hoc guidance when project manager's is unable to come to a decision;
 - review and approve all activities that are supported by the program based on the program objectives, work plan and availability of funding;
 - provide technical advice to create synergy and uniformity between program supported activities and policy;
 - guide and support program delivery at sectoral level;
 - provide support in resource mobilization to support program funding gaps;
 - monitor and evaluate project activities through periodic meetings and occasional site visits; and
 - receive reports on all activities supported by the program to serve as an additional basis to assess and monitor the program performance and delivery.
114. The composition of the Project Board, along with each participant's roles and responsibilities are listed below.
- The Executive will preside over the Project Board. This role will be fulfilled by the MoE.
 - As the "Development Partner" for the project, UNDP's role is to represent the interests of the parties, which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing), including providing guidance regarding the technical feasibility of the project. Within this role, UNDP will have the authority to commit or acquire the necessary resources to carry out its function to the full extent.
 - The Ministry of Environment (MoE)'s role is to ensure that investment decisions at the project level are relevant to national policies and ensure continued involvement and strengthening of national capacities.
 - The Ministry of Agriculture, Natural Resources and Rural Development (MARND) will fulfil the 'Main Beneficiary' role for the project. Within this role, the MARND is mandated with representing the interests of project beneficiaries to ensure that project outputs serve the needs of the beneficiaries.
 - Representatives from the beneficiaries will assist to annual Project Board meetings by providing necessary information on the execution of activities and act as non-voting observers.

Project Management Unit (PMU)

115. The Project Manager (PM) will provide strategic orientation to the proposed project and ensure technical and operational coordination of the Project Management Unit (PMU) that will receive training from UNDP. Specifically, the PM will undertake day-to-day management and decision-making for the project. In line with this mandate, the PM will be primarily responsible for guiding the implementation of adaptation interventions to achieve the targets specified in the Logical Framework (Section E of this Funding Proposal) and ensuring that these interventions are

implemented to the required standards, within the specified time periods and according to the project budget. The PM will be supported by the technical staff under the PMU, including: i) national and international consultants and support staff; ii) an Agroforestry Expert who will coordinate activities under Outputs 1.1 and 2.1; iii) a Governance and Policy Expert who will coordinate activities under Output 3; iv) a full-time Gender and Safeguards Specialist, who will be responsible for tracking project interventions against the Environmental and Social Impact Assessment and Management Plan (Annex 6) and Gender Assessment and Action Plan (Annex 8); and v) a full-time Monitoring and Evaluation (M&E) Expert, who will be responsible for detailed monitoring of the progress of project activities against the targets specified in the Logical Framework. The PM's responsibilities will conclude when the project Terminal Evaluation report and other relevant documentation required by the GCF and UNDP have been completed and submitted to UNDP for clearance. While UNDP's process will be used for the hiring of the PMU, it is important to highlight that the MoE will elaborate the terms of reference for project staff including the selection criteria.

Experience and track record of UNDP as the Accredited Entity and Support services provider:

116. Within its central role in the UN system, UNDP facilitates a multi-sectoral approach in assisting developing countries to respond to the complex challenges associated with climate change. Furthermore, through its focus on promoting a long-term, people-centred approach to capacity development, UNDP is recognised as an experienced agency in institutional development which will add considerable value to the implementation of an integrated approach to land and water resources management in Haiti.
117. To date, UNDP has led numerous environmental protection and climate change responses in Haiti through *inter alia* policy formulation, strategic planning, coordination and information sharing. Through these actions, UNDP has built strong relationships with decision-makers at all levels and proven its strengths as an impartial provider of technical guidance and support to communities in the country. Key resilience projects using an ecosystems-based adaptation (EbA) approach that were managed and implemented by UNDP in Haiti in recent years are listed below.
 - Increasing resilience to climate change and anthropic threats through a ridge to reef approach — GEF Trust Fund; approximately US\$ 9.3 million.
 - The Post-Matthew Recovery Programme — Government of Canada, Korea International Cooperation Agency (KOICA), World Food Programme; approximately US\$ 15 million.
 - Support for the Preparation and Management of Disasters — Government of Japan; approximately US\$ 2.1 million.
 - Natural Disaster Prevention and Territorial Governance — United States Agency for International Development (USAID), Norwegian Ministry of Foreign Affairs; approximately US\$ 1.7 million.
 - National Risk and Disaster Management System — Department for International Development (DFID), USAID, European Commission, The World Bank; approximately US\$ 10.5 million.
 - Resilience to Disasters in *Département Nord* — Government of Japan; approximately US\$ 4.6 million.
118. UNDP in Haiti acts as co chair to various donor and partner groups for Haiti that are relevant to the project, including the Technical and Financial Partner Group for the Environment Sector and the International Community Support Group (GACI) for Disaster Risk Management. UNDP will provide general information on the progress of the project and lessons learned to the aforementioned partner groups to allow for enhanced coordination amongst partners as well as allowing for building on best practices and lessons learned.
119. The management arrangements for this project are summarised in the chart below (Figure 4).

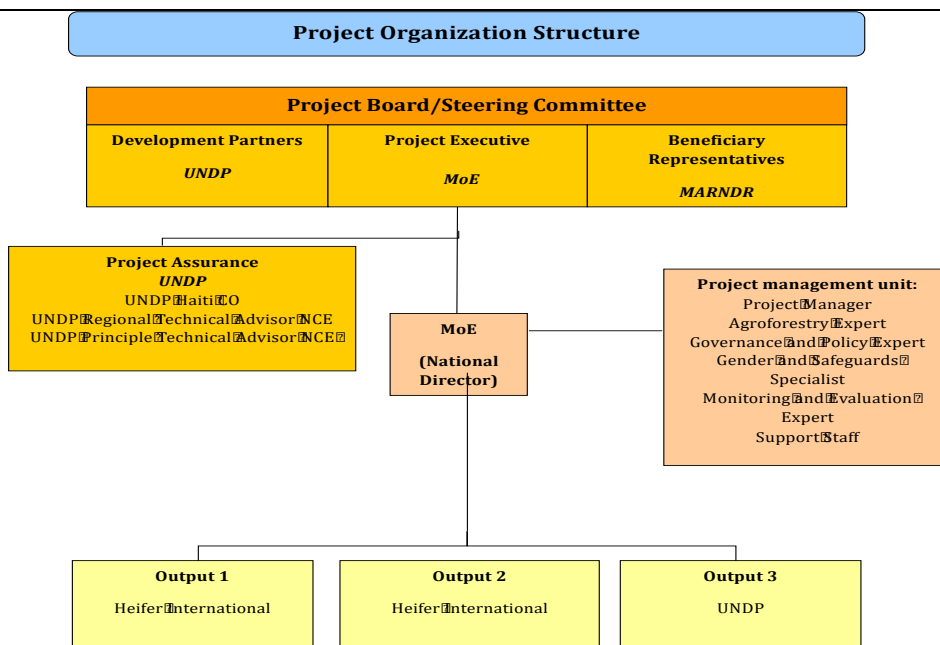


Figure 4. Institutional arrangements.

120. GCF funding will be received by the administrative agent (UNDP) as the AE based on a standard letter of agreement (FAA) signed between the GCF and UNDP (Figure 5). As funds will be channelled through UNDP, a 'Direct Payments' option will be utilised, whereby transfers will be made directly from UNDP to the goods and service providers based on annual workplans submitted by the MoE. Heifer International Haiti's co-financing resources (see red line on Figure 5), which are conditional on the approval of this project by the GCF, will be used by Heifer International Haiti to implement the project interventions outlined in Output 2.

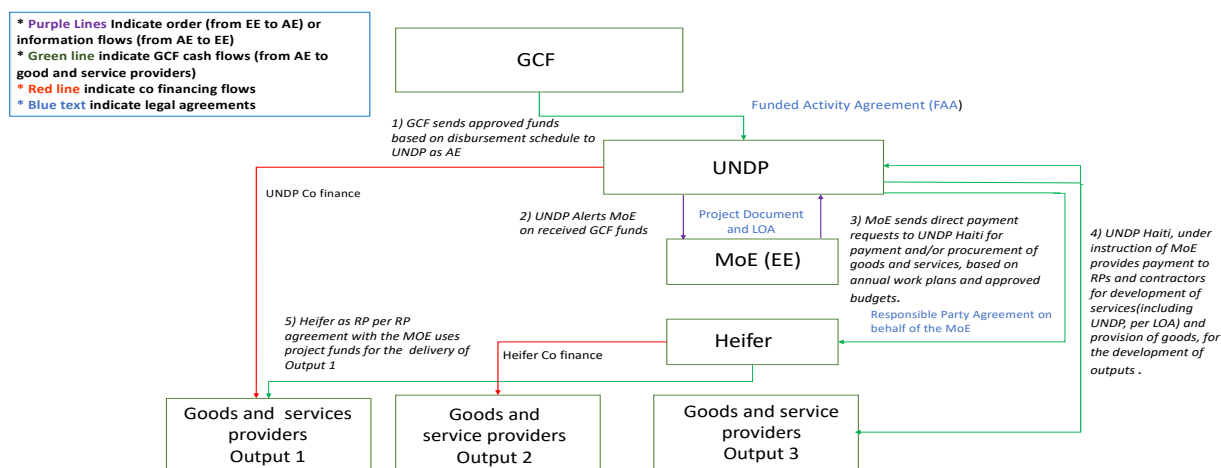


Figure 5. Simplified infographic of the flow of funds/payments and contractual arrangements.

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

121. As a Caribbean SIDS and LDC, Haiti is one of the most vulnerable countries to the impacts of climate change and extreme events, particularly flooding, hurricanes and tropical storms. Climate change-related events are already adversely affecting the country's economy, with negative impacts extending across several of Haiti's major economic sectors. Between 1975 and 2012, such events resulted in damages and losses equivalent to 2% of the

country's GDP on average, per year. Since then, the impacts of climate change have continued to negatively affect the population of Haiti. For example, Hurricane Matthew (Category 5) that struck Haiti in 2016 resulted in the deaths of 546 people, forced more than 175,500 people to seek refuge in shelters and led to more than 1.4 million people requiring immediate humanitarian assistance. The storm also inflicted economic damages and losses estimated at more than 22% of the country's GDP in that year (2016), including the losses of up to 90% of crops and livestock in some areas of the country, and caused a sharp increase in the number of cholera cases. The intense rainfall associated with these extreme events also leads to severe flooding, which exacerbates the associated negative impacts. For example, in 2004, Hurricane Jeanne caused severe flooding in northern Haiti, resulting in more than 2,800 deaths, approximately US\$41 million in damages and required removing approximately 592,000 m³ of mud that clogged drainage networks and infrastructure across the country⁶⁹.

122. The Trois-Rivières (TR) watershed in the north of the country is particularly vulnerable to the impacts of climate change-induced flooding. Given the near-complete absence of embankments and levees in the watershed, such flooding causes severe damage to crops and farmland, as well as agricultural infrastructure and equipment. Flooding in the region also has severe consequences for both human and livestock health, resulting in an increased risk of loss of human lives and livestock⁷⁰. Climate change projections simulate an increase in rainfall intensity in the TR region, which is expected to result in further adverse impacts on the country's economy as well as on the most vulnerable communities and their livelihoods. Addressing the impact of climate change-induced flooding on vulnerable communities in the region, requires adopting an integrated approach to flood management that responds to the impacts of climate change. The Government of Haiti (GoH) acknowledges this requirement and is consequently requesting US\$25 million in grant financing to facilitate the adoption of this management approach. At present, the GoH does not have the capacity to fully finance integrated climate-resilient flood management interventions through domestic finance in both the private and public sector. This is largely because of the persistent occurrence and impact of extreme climate events such as hurricanes and tropical storms on the country, which has caused the GoH to channel funding towards reactive disaster response interventions. Consequently, the amount of domestic financing available for implementing climate change adaptation solutions in the country is limited.
123. Currently, foreign aid accounts for more than half of Haiti's national budget. The International Monetary Fund (IMF) estimates that public debt in Haiti will increase from approximately 29% of the country's GDP in 2016 (equivalent to US\$2.2 billion in the same year) to approximately 38% in 2021 and approximately 49% in 2026. Such considerable increases in public debt will place the country at a high risk of debt distress. The majority of Haiti's approximately US\$2 billion debt as of 2015/16 is attributed to external loans on concessional terms. Moreover, domestic public debt amounts to approximately US\$112 million, mostly in the form of treasury bills held by commercial banks, with the account deficit (including international grants) estimated at approximately 4% for 2016/17⁷¹. High levels of debt as a financial barrier to adapting to climate change is exacerbated by the need to address poverty, with approximately 59% and approximately 24% of the population living below the national and extreme poverty lines, respectively. This is compounded by the negative effects of climate change-induced flooding on public health, as inundations facilitate the increased spread of waterborne diseases such as cholera. The resultant cost of no-action in addressing these health risks places further burdens on the country's already constrained healthcare system. Consequently, poverty combined with the impacts of climate change-induced flooding and extreme climate events are locking the GoH into a negative cycle of short-term reactivity, with insufficient funding being available for climate-responsive planning in Haiti.
124. Several alternative financing options were considered during project development, as fully financing the project through government funds is not possible. This is because the country's current public debt burden limits the GoH from accessing loans from both regional and international development banks. Given that the GoH does not have the financial capacity to finance the project, the government has secured co-financing of US\$8.3 million from the Heifer International Haiti to support the implementation of interventions under Output 2. While this contribution is significant, external support is required to fully finance a transition in Haiti towards implementing and adopting an integrated approach to land and water resources management that will reduce the impacts of climate change-induced flooding on the TR watershed and vulnerable communities living nearby.
125. External support in the form of GCF grant financing will be necessary to catalyse the adoption of such an approach to flood management in Haiti's TR watershed. With the support of GCF funding, the proposed project will deliver several adaptation benefits that will contribute to achieving the GCF paradigm shift objective of climate-resilient sustainable development in the country. Specifically, this will be achieved by: i) implementing agroforestry

⁶⁹ Gaspard, G. 2013. Flood loss estimate model: Recasting flood disaster assessment and mitigation for Haiti, the case of Gonaives. Available at: <https://pdfs.semanticscholar.org/b32b/d0ccdcce15f58b07a70f5b1bd5d570baf7f179.pdf>.

⁷⁰ OXFAM, Welt Hunger Life, NATHAT, and Cap-Haitian.

⁷¹ Further details on Haiti's fiscal situation are presented in Section 2.2 of Annex 2: Feasibility Study.

17,740 ha of agroforestry systems and reforestation 7,700 ha in priority sites⁷² in the TR watershed; ii) enhancing national and local technical and institutional capacity for productive climate-resilient land management; and iii) strengthening national and sub-catchment governance and capacity for climate-resilient integrated water resources management (IWRM). Implementing this suite of adaptation interventions in the TR watershed will reduce the impacts of climate change-induced flooding on the vulnerable communities living in the TR watershed and increase the resilience of the agricultural sector — a major economic sector in the country — to these impacts. Moreover, adaptation benefits conferred by IWRM will be realised in public health improvements, as the prevalence of waterborne diseases will decrease alongside improved flood management.

126. Without GCF support, the GoH will continue to operate under the existing paradigm of reactive recovery from the impacts of climate change. In this scenario, local-level decision-makers in the TR watershed will remain limited in their capacity to plan for and respond to the impacts of climate change — particularly those related to increasingly severe flooding. Moreover, as agriculture will be severely affected by climate change — through damages to crops and ecosystems as a result of flooding, as well as projected reductions in annual rainfall and increases in maximum temperatures contributing to increased droughts — both the country's livelihoods and economy will be negatively impacted. Under future climate change conditions, this will result in *inter alia*: i) continued declines in agricultural productivity and food security; ii) public health concerns, including diarrhoeal diseases; and iii) increased economic damages and loss of life.

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

127. The proposed project interventions have been designed to deliver maximum adaptation benefits to vulnerable communities in Haiti's Trois Rivières (TR) watershed beyond the project lifetime. Such benefits include reducing flood impacts on vulnerable communities living in the watershed and improving environmental sustainability under future climate change conditions through implementing sustainable land and water resources management practices. To secure these benefits, the principles of institutional, technical and financial sustainability have been incorporated into the design of all project interventions, as described below.

Participatory approach to climate-resilient sustainable development

128. The country-driven project has been developed using a participatory and consultative process, enabling all relevant stakeholders to contribute to the design of interventions. These interventions are centred around enhancing the resilience of the TR watershed to the impacts of climate change-induced flooding by implementing an integrated approach to land and water resources management. Uptake of such an approach across the watershed requires buy-in and commitment from national- and local-level stakeholders to ensure that the adaptation interventions implemented under the project respond directly to the needs of all beneficiary groups and continue to deliver adaptation benefits to these groups over the long term.

129. Given that the project promotes an integrated approach to land and water resources management, participation from national and local stakeholders, particularly communities and the most vulnerable groups (e.g. women and people with disabilities), is critical for securing project ownership and long-term adaptation benefits in Haiti. As a result, all project stakeholders will continue to be engaged in the implementation of relevant interventions throughout the implementation phase. This engagement will be supported by awareness-raising campaigns (Activity 1.1), which will be designed and implemented in target communes in the TR watershed to increase local knowledge of sustainable land-use practices and promote their adoption. These campaigns will also encourage community members to participate in the development of community land-use plans, fostering ownership of these plans to secure the buy-in of stakeholders at the community level, which will ensure the sustainability of on-the-ground interventions. Community ownership will also be fostered for the implementation of agroforestry systems and rehabilitation of water towers (Activity 1.2) by promoting community involvement in related activities, such as the establishment of nurseries and planting of seedlings. Demonstrating these activities as viable alternative livelihood options under the project will contribute to maintaining their social and environmental sustainability beyond the project lifetime.

130. An extensive stakeholder engagement plan (Annex 7) has also been developed to ensure that this participatory approach is continued during implementation. The impact and sustainability of project interventions will be further enhanced through the project's focus on ensuring gender-responsive benefits are provided to project beneficiaries. Gender-sensitive targets for all project activities have therefore been set in the project's Gender Action Plan (Annex 8) to ensure that project interventions are not gender-biased. This will contribute to the ownership of project activities by both women and men which, in turn, will result in gender-sensitive adaptation benefits being conferred beyond the project lifetime.

⁷² Detailed information on the identification and selection of sites for the EbA interventions is presented in Section B.3 of the Funding Proposal and Section 10 of Annex 2: Feasibility Study.

Strengthened technical and institutional capacity for sustainable climate-resilient land and water resources management

131. Under the project, the technical and institutional capacity of relevant stakeholders at national, department and commune levels will be strengthened for the implementation of an integrated approach to land and water resources management that is centred around sustainability and climate resilience. This will be achieved by training relevant government entities, including the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), National Coordination of Food Security (NCFS) and Ministry of Social Affairs and Labour (MSAL), to implement sustainable land management (SLM) at the department level. Doing so, will enable the compatibility of SLM with the effective functioning of the entire watershed which, in turn, will contribute to enhancing flood management across the TR watershed. By building the capacity of the targeted institutions, the transfer of knowledge and skills related to sustainable watershed and flood management will extend beyond the project. This will result in: i) a sound understanding of the impacts of climate change-induced flooding on land use, water resources, food security, health and governance in Haiti; and ii) strengthened decision-making around the use of land and water resources under future conditions of climate change. The local and central authorities of the MoE and MARNDR will be strongly involved in the capacity-building interventions under the project to secure the sustainability of these interventions beyond project closure. Exchange visits within the framework of other projects implemented by the MoE and MARNDR will also be carried out to ensure information-sharing and coordination between the proposed project and ongoing national initiatives.
132. Such capacity-building activities will also extend beyond government departments and ministries to demonstrate the effectiveness of improved climate-resilient land-use planning and water resources management as a viable climate change adaptation option to be implemented in Haiti. Specifically, this will involve training community members, and farmers' and women's associations in 33 communities within the 7 target communes in the TR watershed (Activity 1.1). This training will focus on climate-resilient land-use management to enhance participant's awareness of the need for the continued prevention of land degradation and implementation of sustainable agricultural practices. In addition, technical capacity will be strengthened among farmers in the TR watershed for the implementation of climate-resilient agricultural practices (Activity 2.2). This activity will include the implementation of interventions that will provide households with increased market access in the long term for produce grown from agroforestry systems established under Activity 1.2, contributing to project sustainability. Long-term sustainability of the project will be further reinforced by providing training to these households on the development of sustainable agroforestry business models that will contribute to both improving livelihood security and enhancing the implementation of sustainable land-use practices. These models will be designed to promote a progressive and gender-responsive transition from unsustainable agricultural and charcoal production towards the development of sustainable agroforestry businesses (Activity 2.2). To support this training, institutional capacity for sustainable land-use and management will be developed in the TR watershed. This will be achieved through the establishment of an integrated governance framework for SLM under newly established communal development councils and multi-sectoral management structures (Output2). These councils and management structures will represent all agricultural sector stakeholders, including smallholder farmers, both during and after the project implementation. Their primary function will be to enhance the management of natural resources in combination with improving the climate-resilience of agricultural practices, to increase productivity across agricultural subsectors. Consequently, the governance structures will complement activities aimed at community members' capacity building by providing oversight of the implementation of EbA interventions (agroforestry and reforestation) and assisting with the management and maintenance of these interventions.
133. In addition to strengthening governance for SLM in the TR watershed, capacity will be built for the climate-resilient management of water resources in Haiti (Output2). This will be achieved by drafting provisions to the Water Act (under Activity 3.1) to ensure that the act promotes an integrated approach to water resources management in the country. This will establish a legal foundation for optimising the use of these resources without compromising the sustainability of vital ecosystems under future climate change conditions, consequently, securing equitable economic and social welfare. The Water Act will also provide a framework for the institutionalisation of integrated watershed management to empower regional administrations across Haiti — through establishing Catchment Water Resources Management Committees (CIWRMCs) and Sub-Catchment Water Resource Users Associations (SCWRUAs). The primary functions of these committees will be to coordinate planning of water and land use that both maximises benefits to local communities and increases resilience to climate change. This will facilitate a participatory, bottom-up process for the development and implementation of Integrated Water Resources Management (IWRM) in Haiti through local governance processes. Long-term sustainability of governance frameworks will be further ensured through the generation of lessons and under Activity 3.3 and the dissemination of these lessons through the committees and councils established under Outputs 1 and 2. This will inform and improve future adaptation efforts as well as adaptive management of the project, thereby enhancing the success of climate-resilient sustainable development in Haiti.

Strengthening agricultural value chains and unlocking public and private sector investment into sustainable climate-resilient land-use practices

134. Financial sustainability will be ensured through the GoH's commitment to prioritise climate change adaptation, including in national budgeting. This commitment is evidenced in Activity 3.2 of the project, in particular, where the CIWRMCs will work with representatives from productive sectors (for example agriculture), land users at the sub-catchment level and SCWRUAs to develop climate-resilient IWRM plans for end users. These plans will promote sustainable water resources management and an equitable distribution of available resources among all users. The financial sustainability of the project will be further secured by establishing an adaptation finance mechanism under Activity 2.3 through the VSCAs. This mechanism will increase access to finance (through peer to peer loans) for smallholder farmers, providing much needed financial services for continued investment in the maintenance and enhancement of the project supported productive measures, therefore, encouraging a shift in land use away from unsustainable farming practices such as charcoal production by establishing financially sustainable ecosystem compatible livelihoods. To support this shift, a social protection system will be created (Activity 2.3) to support households affected by chronic food insecurity, enabling them to recover their nutritional and financial autonomy immediately after being impacted by climate change-induced flooding. Specifically, this will involve the establishment and operationalisation of a food coupons mechanism targeting these vulnerable households. To support the efficient and effective implementation of the food coupons mechanism, existing VSCAs will receive operational improvements supplemented by the creation of 150 new VSCAs in the TR watershed. Furthermore, a network of village agents will be established, with their primary responsibilities being: i) monitoring existing VSCAs and creating new ones; ii) monitoring market performance and implementing adjustments to the system where required. The community-driven nature of these interventions will contribute to securing the financial sustainability of interventions beyond the project lifetime.

Operation and maintenance (O&M) beyond the project lifetime

135. Sustainable operation and management of all adaptation interventions under the project has been secured by identifying appropriate government and beneficiaries to oversee specific project activities. The GoH is committed to: i) financing all operations, maintenance and insurance activities required under the project; and ii) supporting the governance structures established under Outputs 1 and 2, as well as the community land-use plans developed under Activity 1.1 To support the GoH and ensure that adaptation interventions are implemented efficiently and effectively under the project the Responsible Parties will be beneficiaries for the project. In this role, these institutions will provide specific technical inputs and support to MOE on the implementation of all interventions. The RP (Heifer International Haiti) will implement Outputs 1 and, 2. UNDP will provide support in the implementation of Output 3. The GoH is committed to undertaking the required O&M of these interventions to ensure that they continue to confer adaptation benefits to project beneficiaries beyond project closure, this is outlined in the letter attached to this FP. O&M will be further secured through incentivising community groups (e.g. farmer associations, ROSCAs) to maintain the project interventions because of livelihood support and alternative income streams provided by these interventions.

136. During the implementation of UNDP-supported projects in the field, close attention is paid to institutional capacity building to facilitate the sustainability and durability of projects. UNDP, as accredited entity, will work in close collaboration with local, departmental and national elected officials to ensure maximum effectiveness of the project even after its lifetime. In this capacity building, UNDP will first train the institutional managers to facilitate the transfer of skills, then we will equip the different institutions to better implement the project.

137. Two recent examples of projects that implemented similar activities (agroforestry and supply chain) that have proven to be sustainable beyond the project implementation are "Increasing resilience of ecosystems and vulnerable communities to CC and anthropic threats through a ridge to reef approach to BD conservation and watershed management" (funded by the LDCF) and "Strengthening adaptive capacities to address climate change threats on sustainable development strategies for coastal communities in Haiti" (funded by the GEF).

138. The table below provides a *per hectare* estimate of implementation and O&M costs to be covered by GCF and agroforestry beneficiaries. Implementation is considered to be the investments incurred in year 1 and O&M any investments thereafter.

	Implementation costs (USD/ha)	O&M (USD/ha)	
		during implementation	after implementation
GCF	350.62	348.19	
beneficiaries	702.48	2505.52	2563.10

FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount	Currency
	<u>22,427,206.48</u>	million USD (\$)

GCF financial instrument	Amount	Tenor	Grace period	Pricing
(i) Senior loans	<u>Enter amount</u>	<u>Enter years</u>	<u>Enter years</u>	<u>Enter %</u>
(ii) Subordin ated loans	<u>Enter amount</u>	<u>Enter years</u>	<u>Enter years</u>	<u>Enter %</u>
(iii) Equity	<u>Enter amount</u>			<u>Enter % equity return</u>
(iv) Guarante es	<u>Enter amount</u>	<u>Enter years</u>		
(v) Reimbur sable grants	<u>Enter amount</u>			
(vi) Grants	<u>22,427,206.48</u>			
(vii) Results- based payment s	<u>Enter amount</u>			

(b) Co- financin g informat ion	Total amount	Currency
	<u>Enter amount</u>	Options

Name of institution	Financ ial instru ment	Amount	Currency	Tenor & grace	Pricing	Seniori ty
Heifer Internatio nal Haiti	<u>Gr ant</u>	8,303,355	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>Option s</u>
UNDP	<u>Gr ant</u>	<u>560,000</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>Option s</u>
Click here to enter text.	<u>Opti ons</u>	<u>Enter amount</u>	<u>Options</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>Option s</u>

Click here to enter text.	<u>Options</u>	<u>Enter amount</u>	<u>Options</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>Options</u> <u>s</u>
(c) Total financing (c) = (a)+(b)	Amount			Currency		
	31,290,561.48			million USD (\$)		
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	This is not applicable for the proposed project.					

C.2. Financing by component

Output	Activity	Indicative cost million USD (\$)	GCF financing		Co-financing		
			Amount million USD (\$)	Financial Instrument	Amount million USD (\$)	Financial Instrument	Name of Institutions
1. Ecosystem-based flood management solutions implemented in 25,440 hectares of the Trois-Rivières watershed	1.1.Strengthen the capacity of community groups, including farmer and women's associations, for climate-resilient land-use planning in seven target communes in the Trois-Rivières watershed	1,702,000.00	1,702,000.00	<u>Grants</u>	0	<u>Grants</u>	
	1.2 Implement ecosystem-based flood management solutions in the Trois-Rivières watershed	16,396,800.00	16,396,800.00	<u>Grants</u>		<u>Grants</u>	
	M&E	300,800.00	100,800.00	<u>Grants</u>	200,000.00	<u>Grants</u>	<u>UNDP</u>

2. Climate-resilient agricultural practices, optimised value chains and social safety nets established to promote SLM and reduce degradation in the Trois-Rivières watershed	2.1. Strengthen institutional capacity at the commune, inter-commune and department levels in Haiti's Trois-Rivières watershed for productive and sustainable land-use management	1,484,597	0		1,484,597	<u>Grants</u>	Heifer International Haiti
	2.2 Enhance the technical capacity and access to finance of national and local representatives involved in agriculture in the Trois-Rivières watershed for adopting climate-resilient sustainable land-use practices	5,686,057	0		5,686,057	<u>Grants</u>	
	2.3 Implement a social protection system to support vulnerable households at risk to food insecurity because of climate change	1,072,701	0		1,072,701	<u>Grants</u>	
	M&E	60,000			60,000	<u>Grants</u>	
3. Strengthened governance and capacity for climate-resilient integrated water resources management (IWRM)	3.1 Strengthen national capacities for the implementation of the Water Act	1,015,140	1,015,140.00	<u>Grants</u>	0		
	3.2 Develop an integrated, climate-resilient water management governance framework targeting the catchment and sub-catchment levels in the Trois-Rivières watershed	1,090,066.96	1,090,066.96	<u>Grants</u>	0		

	3.3 Implement regular monitoring and evaluation of water resources at the catchment and sub-catchment levels to support the implementation of integrated water resources management (IWRM) plans	650,952.08	650,952.08	<u>Grants</u>	<u>0</u>		
	M&E	517,360.00	517,360.00	<u>Grants</u>			
Project management cost (USD)		1,314,087.44	954,087.44	<u>Grants</u>	<u>360,000</u>	<u>Grants</u>	<u>UNDP</u>
Indicative total cost (USD)		31,290,561.48	22,427,206.48		8,863,355.00		

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 ☐

Technology transfer

139. Output 1 of the proposed project will facilitate technology transfer by implementing EbA interventions in Haiti's TR watershed, leading to a reduction of the impacts of climate change-induced flooding. These interventions will include establishing 17,740 ha of agroforestry systems and rehabilitating 7,700 ha of water towers⁷³ through reforestation at priority sites⁷⁴ in the watershed (Activity 1.2). The technologies to be implemented under the project are not entirely new to Haiti, having all been implemented in various projects. For example, under the project, entitled "*Applying ecosystem-based disaster risk reduction*" (2016), 36,300 mangroves and sea grape trees were planted on shores and in river mouths to reduce the impacts of flooding in coastal regions in Haiti. What is novel under the proposed project, is the use of EbA interventions as part of an integrated approach to flood management in the country. Such an approach will not only demonstrate the flood-reduction benefits of EbA interventions but also create the required governance frameworks and technical capacities at all levels for climate-resilient, sustainable land and water resources management in Haiti.

Capacity-building interventions

140. To support the implementation of EbA interventions under Activity 1.2, the technical and institutional capacity of decision-makers and local communities will be strengthened under Activity 1.1 as well as Outputs 1 and 2 of the project. These capacity-building activities will focus on creating the enabling environment for the adoption and application of an integrated approach to land and water resources management at all levels in Haiti's TR watershed including capacity for carbon monitoring. In particular, capacity-building activities under Output 2 include: i) strengthening institutional capacity at the commune, inter-commune and department levels in Haiti's TR watershed for productive and sustainable land-use management and ii) enhancing the technical capacity and access to finance of national and local representatives involved in agriculture in the TR watershed for adopting climate-resilient sustainable land-use practices (Activity 2.2).

141. Under Outputs 2 and 3 of the project, capacity-building initiatives will focus on improving water resources management in Haiti's TR watershed. Specifically, these initiatives include: i) strengthening national capacities for the implementation of the Water Act; ii) developing an integrated, climate-resilient water

⁷³ 'Water towers' refers to mountainous areas in Haiti where water for agricultural production and drinking is obtained.

⁷⁴ Further details on the priority intervention sites are presented in Section B.3 of this Funding Proposal and Section 10 of Annex 2: Feasibility Study.

management governance framework targeting the catchment and sub-catchment levels in the TR watershed; and iii) implementing regular monitoring and evaluation of water resources at the catchment and sub-catchment levels to support the implementation of integrated water resources management (IWRM) plans. The complementarity between the respective capacity-building activities focused on SLM (Activity 1.1 and Output 2) and IWRM (Output 3) to enable the integrated, sustainable and climate-resilient management of land and water resources highlights the transformative potential of the project in managing climate change-induced flooding in the TR watershed. From the project total budget USD 5,760,272 has been allocated for capacity building including USD 3.9 million in co financing.

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)

142. The proposed project will contribute to the GCF's paradigm shift adaptation objective of increased climate-resilient sustainable development by enhancing the capacity of vulnerable communities in the Trois Rivières (TR) region of Haiti to adopt and implement an integrated approach to climate change-induced flood management. To accomplish this objective, project interventions have been designed to achieve three GCF fund-level impacts and two fund-level outcomes, as presented below⁷⁵.

Fund-level Outcomes under IRMF

143. The proposed project will enhance the sustainability of Haiti's approach to flood management in the TR region by achieving the following fund-level impacts:

- ARA1.0 — Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions.
- ARA2.0 — Improved health, wellbeing, food and water security.
- ARA4.0 — Improved resilience of ecosystems and ecosystem services.

Project Outcomes

144. The proposed project will be evaluated against the relevant factors specified in the GCF Integrated Results Management Framework. It is anticipated that the proposed project will achieve three Fund-level enabling environment Outcomes, as described below⁷⁶.

- Core indicator 5 Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner.
- Core Indicator 6: Degree to which GCF investments contribute to technology deployment, dissemination, development or transfer and innovation.
- Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level

145. The proposed project outputs include activities for enhancing climate-responsive planning and development — in particular, through the sustainable improvement of land and water resources management in Haiti. First, the collaborative development of community land-use plans will provide an integrated framework for sustainable landscape management (SLM) at the local level (Activity 1.1). This will be supported by the establishment of communal development councils and the provision of training to appropriate public stakeholders, ensuring the effective implementation of SLM (Activity 2.1). Second, climate-resilient IWRM will be integrated into Haiti's Water Act by including provisions for Catchment IWRM Committees and Sub-Catchment Water Resource User Associations. These committees and associations will provide a platform for cross-sectoral, vertical and horizontal collaboration between stakeholders (Activity 3.1). This collaboration will be supported by the development of climate-resilient IWRM plans as well as providing training to members of the aforementioned institutions on the implementation of IWRM in decision-making activities (Activity 3.2). Finally, the implementation of consistent monitoring and evaluation of all project activities at the catchment and sub-catchment levels will provide an important regulatory function in optimising the uptake and effectiveness of climate-resilient flood management solutions (Activity 3.3).

146. Implementing 17,740 ha of agroforestry systems and rehabilitating 7,700 ha of forests under Activity 1.2 will restore degraded ecosystems and considerably reduce the impacts of climate change-induced flooding in the TR watershed. The combined effect of these EbA interventions will result in a 40% reduction in peak runoff, with rehabilitation interventions expected to reduce floodplain extents in the target areas by 20% and 26% under the 20-year and 100-year flood scenarios, respectively. By the end of this century, these EbA interventions are projected to result in a more than 50% reduction in the number of households affected by 100-year flood events (declining from 1,342 households at risk of flooding under the baseline scenario to 638 households with project interventions). Similarly, agroforestry and reforestation interventions under this project activity are expected to result in a 35% reduction in the number of households at risk to 20-year flood events in the TR watershed. This

⁷⁵ Detailed information on the assumptions and estimates of the impact potential of the proposed project are provided in the project's results framework and economic analysis (Section E of this document and Annex 3, respectively).

⁷⁶ A detailed description of the project activities that will be implemented under each output to achieve the GCF project outcomes is presented in Section B.3 of this Funding Proposal.

represents a decline from 463 under the baseline scenario to approximately 300 houses at the end of the century under a 20-year flooding scenario.

147. In addition to their significant flood-reduction potential, the EbA interventions will also deliver numerous social benefits for vulnerable households in the target communes in the TR watershed. Rehabilitating degraded forests will increase the ecosystem goods and services they provide (e.g. improved quality and quantity of water supply, increased prevalence of agricultural pollinators and enhanced soil fertility⁷⁷), while new livelihood benefits will be generated through the implementation of agroforestry systems in the seven target communes. This will incentivise target communities to shift away from unsustainable practices — such as unregulated charcoal production — towards the adoption and implementation of sustainable, climate-resilient land uses. Moreover, these interventions will generate benefits for the health of vulnerable individuals, households and communities living in the TR watershed, reducing the spread of water- and vector-borne diseases as contamination of freshwater sources (e.g. rivers) and food is reduced. Specifically, agroforestry and reforestation interventions will: i) reduce the transmission of communicable diseases; ii) safeguard agricultural livelihoods; and iii) improve basic water quantity and quality, as well as sanitation and hygiene (WASH) services⁷⁸. Access to WASH, in particular, reduces the spread of water- and vector-borne diseases including, *inter alia*, cholera, diarrhoea and typhoid — the World Health Organisation has estimated that improving access to WASH facilities could reduce the global burden of disease by approximately 10%⁷⁹. Finally, the development of rigorous monitoring and evaluation of project activities and implementation will allow the iterative adjustment of project implementation practices, to ensure the effectiveness of, *inter alia*, EbA interventions in reducing the spread of water- and vector-borne diseases.
148. Demonstrating the adaptation and livelihood benefits of EbA interventions will be supported by awareness-raising activities under Output 1. These activities will strengthen the adaptive capacity of communities by increasing their knowledge of, *inter alia*, the benefits of climate-resilient agricultural practices and agroforestry as well as the alternative livelihood options that these activities provide (Activity 1.1.). As a result, project beneficiaries will have increased technical and institutional capacity to improve their long-term food and income security. Moreover, the dissemination of information on sustainable charcoal production and reforestation will enhance the energy security of these beneficiaries and enable them to sustainably utilise forest resources. The adaptive capacity of communities will be further strengthened by the: i) provision of climate-resilient agricultural inputs to communities (Activity 2.1); ii) creation of an agricultural finance mechanism (Activity 2.2.); and iii) establishment of a social protection system for food insecure households (Activity 2.3). These activities will provide a combination of short- and long-term support to vulnerable communities in response to climate change-induced flooding, ensuring that the most vulnerable smallholder farmers are included in the agricultural value chain and are able to improve their food and income security.
149. The proposed project will be implemented in the TR watershed area, covering 33 communal sections and 118 communities within the seven target communes. As a result of direct investments from the GCF and Heifer International Haiti, the project will confer direct and indirect climate change adaptation benefits to approximately 292,600⁸⁰ (approximately 152,152 women and 140,448 men) and approximately 441,272⁸¹ (approximately 229,461 women and 211,811 men) vulnerable people in Haiti, respectively. These investments will transform Haiti's approach to land and water resources management and create an enabling environment for the uptake of climate-resilient, sustainable flood management practices within the public and private sector. It will then become possible to scale up and replicate these practices nationally, as well as across the Caribbean region.

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

⁷⁷ Thompson, I.D. *et al.* 2011. "Forest Biodiversity and the Delivery of Ecosystem Goods and Services: Translating Science into Policy", *BioScience*, 61 (12).

⁷⁸ APFM. 2015. Health and Sanitation Aspects of Flood Management.

⁷⁹ Ibid.

⁸⁰ Direct beneficiaries include the total population living in proximity to waterways in the target communes. This was calculated by mapping all infrastructure and calculating their distance to the river. All houses within 30m of the river are considered direct beneficiaries.

⁸¹ Indirect beneficiaries include the total population of the target communes, minus direct beneficiaries based on 2003 census data adjusted for population growth. See Annex 3 – Economic Analysis for a full description of the adjustment methodology.

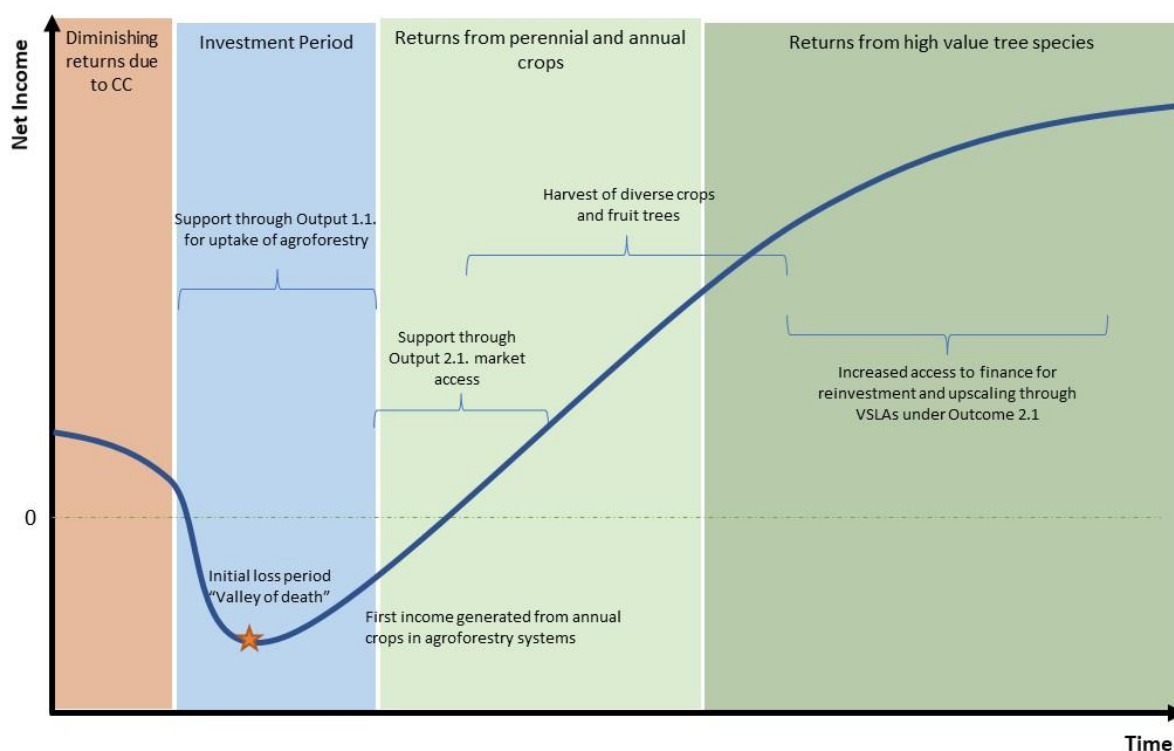
150. The proposed project will catalyse a paradigm shift in Haiti's approach to flood management in the TR watershed by initiating a shift away from uncoordinated decision-making and unsustainable land-use practices towards an integrated, climate-resilient approach to land and water resources management. Details on how the project will contribute to GCF's Paradigm Shift Objective of climate-resilient sustainable development are presented below.

Potential for scaling up and replication, as well as strengthening Haiti's institutional and regulatory framework

151. Under the proposed project, an integrated climate-resilient approach to flood management will be implemented to address the severe impacts of climate change-induced flooding on soil erosion, well-being and livelihoods of vulnerable communities in Haiti's TR watershed. This approach is built around the principles of climate-resilient, sustainable development and underpinned by three main interventions. First, agroforestry systems will be established and degraded forests restored at priority intervention sites across the watershed to: i) reduce peak surface runoff and flood extent; and ii) provide alternative livelihood options to the unsustainable land-use practices on which most vulnerable communities in the TR watershed depend. As a result, these agroforestry systems will contribute to reducing the spread of water- and vector-borne diseases such as cholera by improving water quality and reducing flood impacts in the watershed. The implementation of agroforestry systems will be supported by establishing the local governance structures required to implement and manage climate-resilient land-use practices and providing training to community groups — including farmer and women's associations — for strengthened climate-responsive planning. Second, complementary interventions focused on enhancing technical and institutional capacity at the commune, inter-commune and department levels will be implemented to promote productive climate-resilient agricultural practices and sustainable land management. Last, the necessary governance framework for integrated water resources management (IWRM) will be established in Haiti to support the uptake of climate-resilient land management systems and facilitate sustainable use and management of water resources over the long term. Together, project interventions will transform flood management in Haiti by catalysing a shift away from uncoordinated, compartmentalised decision-making around flood management, towards an integrated approach that can be scaled up and replicated nationally and across the Caribbean region.

152. To enhance the adaptation impact of these interventions, Haiti's governance framework for the sustainable management of natural resources will be strengthened. This will be done primarily through adapting the draft Water Act to include, *inter alia*, provisions for the adoption of IWRM Committees in departments across the country. As a result of these changes, a new strategy will be developed for IWRM in Haiti that addresses both the existing challenges of a fragmented and uncoordinated system of water management, particularly at a catchment and sub-catchment level, as well as the current and projected impacts of climate change-induced flooding. Regulation around the sustainable use and management of land and water resources will also be strengthened under the project through the development of community land-use plans, which will facilitate the implementation of a landscape approach to land and water resource management. This will contribute to the creation of a more coherent land and water resources management framework in Haiti that considers climate change.

153. A transition model underpinning the paradigm shift for the agroforestry interventions is depicted in the figure below, demonstrating how the project will support farmers in making the transition to sustainable agroforestry possible. This includes the role of social protection and technical support to assist farmers in transitioning through the initial investment period.



The diagram shows that GCF finance is needed to allow farmers to bridge the “valley of death” of the first years of investment in agroforestry, when costs are higher than revenues. By providing inputs to farmers, the costs of implementing agroforestry become lower, enabling the farmer to shift to this more sustainable land use and guarantee income from year 1 (through harvests of annual crops within the agroforestry system).

Knowledge sharing, awareness and the creation of an enabling environment

154. The absence of a platform for coordination between the multiple stakeholders involved in land and water management in Haiti is a barrier to effective flood management and has resulted in fragmented and ineffective decision-making as well as the duplication of activities⁸². In this context, horizontal coordination will be enabled through the establishment of IWRM Committees (Activity 3.1), which will promote cross-sectoral decision-making between all stakeholders regarding resource use and allocation. The project will also strengthen vertical coordination between local water resource users and public sector officials at both municipal and national levels. For example, both community members and public institutions (such as municipalities) will be involved in the creation of community land-use management plans (Activity 1.1 and 1.2). This will ensure a rigorous balance of bottom-up and top-down integration through participatory processes. The establishment of Sub-Catchment Water Resource Users Associations (Activity 3.1) will also promote a freer flow of information and communication between stakeholders at different levels, thereby promoting vertical coordination on the sustainable management and use of land and water resources.

155. To further support the shift away from uncoordinated decision-making and unsustainable land-use practices, agricultural productivity in the TR watershed will be enhanced. This will be achieved by: i) strengthening the technical and institutional capacity of people involved in agriculture at the commune, inter-commune and department levels for implementing productive climate-resilient agricultural practices; ii) enhancing smallholder farmers’ access to financial resources to facilitate the long-term implementation of climate-resilient agricultural practices; and iii) establishing a social protection system to provide immediate support to vulnerable households affected by climate change impacts, particularly flooding. Furthermore, public sector stakeholders will receive training on how to implement SLM and IWRM to mainstream sustainable land and water resource management into the public sector. The provision of training on climate-resilient agricultural practices will improve the climate resilience of beneficiary communities, resulting in improved food security for subsistence farmers as well as higher incomes for smallholder farmers. The incorporation of these income- and livelihood-generating activities has been previously demonstrated as an important factor that will ensure the long-term sustainability of adaptation and development projects⁸³. Knowledge sharing on sustainable charcoal production methodologies will help improve

⁸² Widmer *et al.* 2018. A Vision for Water in Haiti, 2018.

⁸³ Gibbons, A. 2010. Greening Haiti, Tree by Tree. *Science*, 327, pp. 640–641.

the efficiency of these activities and reduce wood loss during the production process — presently, approximately 70% of wood energy is lost during the production of charcoal. This will reduce deforestation and contribute to improved climate-resilient flood management. In addition, awareness-raising campaigns will be promoted in city hall meetings as well as community radio broadcasts, focusing on: i) promoting the benefits sustainable land-use practices; ii) encouraging community participation in land-use plans; and iii) creating awareness of adaptation and landscape management solutions to address climate change-induced flooding. These capacity-building activities, combined with the monitoring and evaluation systems included in the proposed project design, will produce an evidence base detailing the success of project interventions. This will be an important incentive for the creation of an enabling environment for future upscaling and replication of project activities in other areas of Haiti and the Caribbean region.

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

156. The proposed project will contribute towards the achievement of at least 5 of the 17 United Nation Sustainable Development Goals (SDGs), including: i) SDG 2 — Zero Hunger; ii) SDG 5 — Gender Equality; iii) SDG 6 — Clean Water and Sanitation; iv) SDG 11 — Sustainable Cities and Communities; and v) SDG 15 — Life on Land. In addition, project interventions will generate several environmental, social, economic and gender-responsive co-benefits, as described below.

Environmental co-benefits

157. The restoration of degraded forests through targeted reforestation interventions and expanded agroforestry practices, as well as the implementation of integrated water resource management (IWRM) practices (Outputs 1.1 and 3.1, respectively) will generate several environmental co-benefits. Such benefits include reduced surface runoff and soil erosion, carbon sequestration and improvements in air quality.

158. Historically, deforestation in Haiti has increased erosion rates by six-fold and river flows by 25%⁸⁴. This problem has also been experienced in the country's Trois-Rivières (TR) watershed, where soil erosion is exacerbated by climate change-induced flooding. To address this climate change problem, 17,740 ha of agroforestry systems will be implemented, and 7,700 ha of priority forests restored in the TR watershed (Activity 1. 2). These interventions will not only have direct flood-reduction benefits for vulnerable communities in the watershed⁸⁵, but they will also contribute to soil conservation. This will lead to *inter alia*: i) reduced surface runoff and soil erosion caused by flooding; ii) increased water infiltration and storage capacity of the soil; iii) improved water quality, particularly in near-shore marine environments because of reduced sedimentation; improved air quality; and iv) improved soil quality and productivity. Furthermore, the stabilisation of degraded watersheds will result in greater biodiversity, increased provisioning of ecosystem goods and services to communities living adjacent to intervention sites, and improved conservation of indigenous plant and animal species.

159. While most of the environmental co-benefits that will be conferred by agroforestry and reforestation interventions are adaptation-focused, there is also the potential for mitigation co-benefits to be provided through the project. Implementing agroforestry and reforestation activities will contribute to enhancing the carbon sequestration potential of the restored landscapes, while promoting the adoption of climate-resilient sustainable land-use practices (Activity 2. 2) will catalyse a shift away from unsustainable charcoal production that contributes to increasing CO₂ emissions in the country. It should be noted that the potential mitigation benefits associated with reforestation interventions have not been calculated for this project as the potential benefits will be peripheral to the adaptation impact of these interventions. Instead, the carbon sequestration potential of reforestation interventions is supported by evidence across the United States, where reforestation interventions have demonstrated that “the establishment of woody vegetation delivers immediate to multi-decadal carbon sequestration benefits in biomass and woody debris pools”⁸⁶.

Social co-benefits

160. Implementing targeted landscape restoration and IWRM, as well as enhancing the technical capacity of smallholder farmers and communities to utilise climate-resilient agricultural practices will generate several social co-benefits. These benefits are described in further detail below and include improved food security, social empowerment, greater energy security, as well as health benefits.

⁸⁴ Inter-American Development Bank (IADB). 2014. Haiti: Natural Disaster Mitigation Program II – Proposal for Operation Development. [online] Available: https://www.climateinvestmentfunds.org/sites/cif_enc/files/meeting-documents/haiti_climate_proofing_of_agriculture_in_the_centre-artibonite_loop_idb-project_document_0.pdf

⁸⁵ as described in Sections B.2 and B.3 of this Funding Proposal

⁸⁶ Nave, L.E. *et al.* 2019. The role of reforestation in carbon sequestration. *New Forests*, 50: pp. 115-137.

161. Training communities and individual farmers in climate-resilient agroforestry practices (Activity 1.1.1), as well as expanding access to agricultural markets and credit facilities (Activity 2.1.2) will improve food security at the household level. These benefits will be realised through improved food production and increased income. In addition, a reduction in the incidence and intensity of flooding achieved through reforestation and agroforestry activities (Activity 1.1.2) will improve food security, as flooding often undermines agricultural production. In particular, productive floodplains are impacted by increased rates of erosion, which contributes to food and water being contaminated by heavy chemicals and/or pesticides transported by flooding⁸⁷. Enhanced food security will also increase the likelihood of project beneficiaries continuing agroforestry practices and the conservation of restored forests after project closure.
162. Project interventions will also generate positive social co-benefits for beneficiary communities in the form of greater social empowerment. First, communities will have improved stewardship over forests and other natural resources and will receive long-term benefits from the sustainable use of non-timber forest products and other forest resources. This will be achieved through training provided on, *inter alia*, community land-use plans and sustainable charcoal production and reforestation (Activity 1.1). Second, the active engagement of communities in the development of these community land-use plans (Activity 1.1) will also improve community cohesion. Finally, the development of community land-use plans (Activity 1.1), as well as the establishment of communal development councils (Activity 2.1), Catchment IWRM Committees and Sub-Catchment Resource Users Associations (Activity 3.1) will improve the decision-making power of traditionally marginalised groups — including women and local communities — on natural resource management. These benefits will be supported by the diversified and improved climate resilience of incomes amongst smallholder farmers through the promotion of agroforestry systems (Activity 1.2) and the provision of training on climate-resilient agricultural practices (Activity 2.2).

Economic co-benefits

163. Project interventions — particularly reforestation, IWRM, and the expansion of agricultural markets — will generate several economic co-benefits. These are described in detail below and include reduced damage to infrastructure, employment creation, enhanced climate resilience of the agricultural sector and the adoption of climate resilient livelihoods amongst smallholder farmers and other community beneficiaries.
164. At present, approximately 50% of built-up areas in Haiti are vulnerable to climate change-induced flooding. This is evidenced by the densely populated cities of Port-de-Paix and Gonaïves, which saw 30 and 80% of their areas flooded after Hurricane Jeanne made landfall in northern Haiti, a tropical storm which caused approximately US\$41 million in total damages in 2004. Flood management interventions under the project are expected to reduce peak surface runoff and floodplain extents in Haiti's TR watershed. This, in turn, will contribute to reducing the economic damages to existing infrastructure, generating public savings and indirectly increasing the fiscal space available for other social and developmental investments⁸⁸. These economic co-benefits will be supported by the creation of additional employment opportunities and through the adoption of agroforestry systems and reforestation activities. Such opportunities will include the involvement of farmers and other community members in the establishment of nurseries, physical planting of seedlings, and promotion of regeneration activities. Encouraging farmers, in particular, to participate in planting specific tree seedlings (e.g. coffee, cocoa and cassava) will provide them with an important economic safety net to reduce the economic impacts of climate change-induced flooding on their production. These impacts will be further reduced by expanding agricultural markets (Activity 2.2), which will increase the resilience of the agricultural sector to external climate change shocks, such as flood and hurricane impacts. This, in turn, will contribute to reducing fluctuations of agricultural employment and improved food price stability.
165. Smallholder farmers and beneficiary communities will also secure climate-resilient livelihoods as a result of several project interventions including: i) establishing 17,740 ha of agroforestry systems (Activity 1.2), which will diversify farmers product base, generate higher levels of income and improve climate resilience as beneficiaries will have a wider resource base to draw from; ii) training community members who depend on agriculture for the livelihoods on climate-resilient agricultural practices and sustainable land management (Activity 2.2), which will improve agricultural productivity under future climate change conditions; and iii) increasing access to agricultural finance (Activity 2.2), which will allow beneficiaries to purchase necessary agricultural inputs and improve their yields. In addition, the reforestation of 7,700 ha of forest in priority areas in the TR watershed will result in, *inter alia*, reduced erosion and improved soil fertility. This will bolster yields, resulting in higher income levels and contributing to more resilient livelihoods.

⁸⁷ Associated Programme on Flood Management (APFM). 2015. Health and Sanitation Aspects of Flood Management. *Integrated Flood Management Tools Series*, 23.

⁸⁸ Ibid.

Gender-sensitive development impact

166. Approximately 52% of direct beneficiaries of the proposed project are women. In addition, project interventions will result in several gender-specific co-benefits described below, including gender-responsive health and socio-economic benefits.
167. Implementing an integrated approach to flood management in the TR watershed will have several positive gender-based co-benefits. First, this will reduce the rate of displacement, and in turn reduce the amount of violence — particularly sexual violence — experienced by women. Previous studies have documented increased incidence of gender-based violence when displacement has occurred. In the aftermath of Hurricane Matthew, field assessments reported an increased incidence of sexual violence against displaced women and girls. Increased incidences of gender-based violence in the aftermath of the 2010 earthquake further support this finding, and it has been partially attributed to the breakdown of traditional social networks between neighbours and communities that occur alongside displacement⁸⁹. Second, reduced flooding will result in a decline in the spread of water-borne diseases as the contamination of water supplies will decline. This will generate a disproportionately positive impact on women, who are the most exposed to contaminated water because of gender roles in the home⁹⁰.
168. Additional gender-responsive health co-benefits that will be achieved in the proposed project include a reduction in the horizontal transmission of HIV/AIDS and other STIs amongst women because of improved food security. This is because women are more likely than men to engage in high-risk strategies to mitigate food insecurity — including sex work — which exposes them to the disease⁹¹. The project will also generate gender-responsive economic co-benefits in the form of resilient livelihoods. Haiti has a high percentage of female-headed rural households (approximately 39%), the majority of whom are smallholder farmers. These women, in particular, will benefit from Activity 2. 2, which will include the provision of training on climate-resilient agricultural practices and sustainable land management as well as the extension of agricultural finance and provision of climate-resilient agricultural inputs. Studies have found that closing the gender gap in agriculture⁹² results in improved agricultural production levels overall, as well as increased levels of food availability and a decline in average food prices⁹³.
169. The promotion of gender equality has been mainstreamed throughout proposed project interventions wherever possible, based on the gender assessment and action plan (Annex 8). This gender mainstreaming will contribute to the promotion of gender-sensitive development beyond the conclusion of the project.

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

Vulnerability of the country

170. Ranking 163rd out of 188 countries on the 2016 UN Human Development Index, Haiti faces multiple development challenges related to food and economic security, health, education, political violence, and environmental degradation. These challenges are compounded by extreme climate events such as hurricanes and tropical storms that cause flooding and landslides and the frequent occurrence of natural disasters (e.g. earthquakes) in the country. As the inhabitants of a SIDS and LDC, most Haitians are particularly vulnerable to impacts of these events. Indeed, with more than 96% of its population living at risk of multiple climate and natural hazards⁹⁴, Haiti is considered one of the world's most vulnerable countries to the acute shocks and chronic stresses of climate change. This is supported by the findings of the 2020 Climate Risk Index⁹⁵, where Haiti was listed as the third most affected country by hydrometeorological disasters that occurred during the period 1998–2018. Additionally, with a vulnerability index of 0.58 and a sensitivity index of 0.22, the Development Bank of Latin America listed Haiti as the most vulnerable country to climate change in Latin America and the Caribbean⁹⁶.

⁸⁹ International Federation of Red Cross and Red Crescent Societies (IFRC). 2015. *Unseen, Unheard: Gender-based violence in disasters*. Geneva, IFRC.

⁹⁰ APFM. 2015. Health and Sanitation Aspects of Flood Management.

⁹¹ Anema, J., Vogenthaler, N., Frongillo, E.A., Kadiyala, S., and Weiser, S.D. 2009. Food Insecurity and HIV/AIDS: Current Knowledge, Gaps, and Research Priorities. *Current HIV/AIDS Reports*, 6(4): 224-231.

⁹² The "gender gap in agriculture" is an observed difference in yields per ha between male and female farmers, which has predominantly been attributed to differences in input levels. On average, female farmers are less productive than their male counterparts because of lower levels of access to agricultural inputs including, *inter alia*, seeds, fertilisers and pesticides. From: FAO. 2011. *The State of Food and Agriculture: Women in Agriculture*. Office of Knowledge Exchange, Research and Extension, Rome. Retrieved from: <http://www.fao.org/3/i2050e/i2050e.pdf>

⁹³ FAO. 2011. *The State of Food and Agriculture: Women in Agriculture*.

⁹⁴ Global Facility for Disaster Reduction and Recovery (GFDRR). Available at: <https://www.gfdr.org/en/haiti>.

⁹⁵ D. Eckstein, V. Künzel, and L. Schäfer (2020). Global Climate Risk Index 2020. Germanwatch, Bonn. Available at: https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf

⁹⁶ CAF (2014). Vulnerability index to climate change in the Latin American and Caribbean Region. CAF, Caracas. 206 pp. Available at: <http://scioteca.caf.com/handle/123456789/509>

171. In the past two decades, Haiti has experienced 26 floods (12 of which were catastrophic), 8 hurricanes, and numerous other extreme climate events such as tropical storms and earthquakes. With a total of 55 extreme climate events, 2.81 related deaths per 100,000 inhabitants and approximately US\$390 million in losses during the period 1999–2018, the country ranks in the top three at risk countries to climate change impacts⁹⁷. Of these impacts, the damages and losses caused by climate change-induced flooding are particularly severe. For example, in 2004, Hurricane Jeanne caused severe flooding in the northern part of Haiti, resulting in more than 2,800 deaths and approximately US\$41 million in damages. More recently, Hurricane Matthew struck Haiti in 2016, causing 546 deaths and the loss of up to 90% of crops and livestock in some areas⁹⁸. The frequency and intensity of flood events is already increasing in Haiti. This trend is expected to continue under future climate change conditions as a result of projected higher average annual temperatures and increased intensity and concentration of precipitation events across the country⁹⁹. The impacts of these climatic changes will be particularly severe for the country, which is already extremely vulnerable to external shocks caused by climate change. This is because Haiti is currently locked into a reactive cycle of costly disaster response and rebuilding that is preventing the adoption and implementation of climate-resilient approaches to managing the cross-sectoral impacts of flooding in the country. These impacts are further exacerbated by the country's fiscal challenges and dependency on neighbouring countries for importing critical supplies. For example, approximately 50% of the national budget comes from foreign aid, 100% of the hydrocarbons used for energy production are imported, and 60% of its food requirements are imported, despite agriculture being the primary economic activity. Extreme climate events are already affecting these imports, resulting in shipping routes becoming unsafe and insurance premiums for shipping companies becoming unaffordable. The cumulative impact of these factors inhibits the capacity of national and local decision-makers to implement long-term strategies for responding to the adverse impacts of climate change on the country's population.

Vulnerability of beneficiary groups

172. While the TR watershed covers three departments in Haiti (namely the Artibonite, North and Northwest departments), the Northwest department has the joint highest number of inhabitants living under poverty, with an extreme poverty rate exceeding 40% (representing approximately 20% of the extreme poor)¹⁰⁰. Poverty is particularly prevalent in the Trois Rivières (TR) region, which is the most populous of the three watersheds in the Northwest department. This region also encompasses Port-de-Paix, a major city ranked as the third-most food-insecure area in Haiti¹⁰¹. High levels of poverty and food insecurity experienced in the TR region contribute directly to increasing the vulnerability of inhabitants to the impacts of climate change.

173. Within the Northwest department, the TR region is particularly vulnerable to the impacts of climate change-induced flooding. The reason for this is two-fold. First, the region's steep topography contributes to increased runoff during extreme precipitation events which consequently exacerbates flood impacts. Second, the TR region is located near Haiti's north coast which increases the exposure of the region's population to the impacts of hurricanes and tropical storms coming from the north-east. The cumulative negative impacts of climate change-induced flooding and extreme events are compounded by land degradation in the TR region, resulting from deforestation and unsustainable crop farming on the surrounding steep slopes. Current agricultural practices — particularly the increasing prevalence of annual crop cultivation which leaves the soil bare during most of the year — and charcoal production in the mountainous areas of the catchment cause widespread deforestation. Consequently, these practices have resulted in large-scale changes in the natural landscape of the TR region, with the clearing of tress, in particular, contributing to decreased infiltration and increased surface runoff in the catchment. This, in turn, has resulted in increased erosion and soil degradation within the catchment area, further exacerbating flood impacts.

Socioeconomic status

174. Haiti is the only LDC in the Western Hemisphere and the least wealthy country in the Americas with an annual GDP per capita of approximately US\$1,850. Poverty is endemic with approximately 59% of the population living below the national poverty line of US\$2.41 per day, and approximately 24% living below the national extreme poverty line of US\$1.23 per day. In rural areas, poverty is highest, where 52% of the population and 63% of extremely poor households reside. Inhabitants of rural areas also have limited capacity to adopt alternative livelihoods, resulting in an increased dependence on agriculture. Approximately 40% of the population is dependent

⁹⁷ D. Eckstein, V. Künzel, and L. Schäfer (2020). Global Climate Risk Index 2020. Germanwatch, Bonn. Available at: https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf.

⁹⁸ World Bank. 2017. Rapidly Assessing the Impact of Hurricane Matthew in Haiti. Available at: <https://www.worldbank.org/en/results/2017/10/20/rapidly-assessing-the-impact-of-hurricane-matthew-in-haiti>

⁹⁹ BRGM (France) & CIAT. "Atlas des menaces naturelles en Haiti."

¹⁰⁰ World Bank. 2014. Poverty and Inclusion in Haiti: Social gains at timid pace. Available at: <http://documents.worldbank.org/curated/en/643771468257721618/pdf/895220BRI00pau00Box385284B00PUBLIC0.pdf>

¹⁰¹ 35% of households are exposed to food insecurity. WFP. 2016. Evaluation de la sécurité alimentaire en milieu urbain.

on the agricultural sector for their livelihoods which consists mostly of small-scale subsistence farming that is highly vulnerable to the impacts of climate change and natural disasters. Poverty, corruption, vulnerability to climate change and natural disasters, as well as low levels of education across much of the population, represent some of the most serious impediments to Haiti's economic growth.

175. The country's small tax and market base as well as its high public debt — outstanding external debt was cancelled by donor countries following the 2010 earthquake, but has since risen to approximately US\$2.8 billion as of December 2017¹⁰² — constrain the government's ability to allocate funding from the national budget for climate change adaptation. Moreover, limited opportunities exist for the public and private sector to access financial resources for addressing climate change impacts, which is estimated to cost the country approximately US\$20 million per annum¹⁰³. Given that this cost is likely to increase significantly under future climate change conditions, external investment is critical to increase the climate resilience of Haiti's population.

Institutional capacity needs

176. Governance of land and water resources, as well as improving the sustainability of agricultural practices, are major challenges that need to be addressed to strengthen the resilience of vulnerable communities in the TR region to the impacts of climate change. Critical conditions needed for the implementation of an effective and efficient resilience strategy for vulnerable populations are the strengthening of governance and technical capacities of institutions and the establishment of appropriate legal frameworks in relation to land and water resources management. A multi-sectoral approach is therefore required to establish an integrated water resource management (IWRM) approach in the TR region. The adoption of such an approach will contribute to the implementation of sustainable agricultural practices, which will concomitantly increase food security and reduce the adverse impacts of climate change-induced flooding on the most vulnerable communities in the region.
177. Most national and local decision-makers, as well as farmers, are aware of the adverse impacts of climate change-induced flooding on land and water resources in the TR catchment. However, there is limited knowledge on adaptation options for communities, as well as limited awareness surrounding the urgent need for an integrated approach to flood management in the region. Consequently, people in the TR region that rely on farming for their livelihoods are unable to understand the implications of conventional, unplanned agricultural practices on the landscape under climate change conditions. For example, the cultivation of annual crops leaves soil bare during most of the year, resulting in its degradation and erosion caused by extreme weather. This leads to decreased surface cover and reduced infiltration capacity of the soil, subsequently exacerbating the impacts of flooding on the landscape and surrounding communities. Furthermore, profit margins for the farmers within the catchment are small and government budgets are extremely limited. As a result, on-farm decision-making is aimed at sustaining livelihoods in the short term, while government investments do not currently prioritise the long-term sustainability of climate-resilient activities within the catchment. GCF resources supported by government co-financing will, therefore, be used to: i) demonstrate the benefits of implementing an integrated, climate-resilient flood management approach in the region; and ii) strengthen the technical and institutional capacities of national and local decision-makers, farmers, community members, CSOs and association representatives to implement coordinated and planned long-term adaptation interventions. The combined effect of these adaptation interventions will contribute enhanced climate resilience of vulnerable communities in the TR region.

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

178. The proposed project is strongly aligned with Haiti's national priorities, having been designed in collaboration with project stakeholders at all levels. These priorities are summarised below.
- The revised **National Adaptation Programme of Action (NAPA)**¹⁰⁴, developed in 2017, identified four priority areas for addressing the impacts of climate change — namely, soils, agriculture, coastal zones and water resources. Focus was placed on these areas because they are among the most vulnerable to the impacts of climate change such as flooding, hurricanes and tropical storms, and addressing these negative impacts will contribute considerably to climate-resilient sustainable development in Haiti. The NAPA is of relevance because of its linkages with, and integration into, other national-level plans and priorities centred around climate-resilient land and water resources management. Specifically, national policies that have been integrated into the revised NAPA include the Interim Cooperation Framework¹⁰⁵ and the Poverty Reduction

¹⁰² CIA World Factbook. 2019. Field listing: Debt – external. Available at: <https://www.cia.gov/library/publications/the-world-factbook/fields/246.html>

¹⁰³ D. Eckstein, V. Künzel, and L. Schäfer (2020). Global Climate Risk Index 2020. Germanwatch, Bonn. Available at: https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf

¹⁰⁴ In French, referred to as *Programme d'Action National d'Adaptation* or PANA. 2006. <https://unfccc.int/resource/docs/napa/hti01f.pdf>

¹⁰⁵ Available at: <https://reliefweb.int/report/haiti/haiti-interim-cooperation-framework-2004-2006>

Strategy Paper (PRSP)¹⁰⁶. These policies share common goals relevant to the proposed project such as ramping up agricultural production in a sustainable way, preventing land degradation and improving access to clean water. Haiti's NAPA and PRSP also share mutual objectives towards implementing activities that reduce the vulnerability of communities to climate change alongside the National Disaster Risk and Management Plan¹⁰⁷. Another relevant plan integrated into the NAPA is the National Environmental Action Plan (NEAP), released in 1999, which prioritises addressing the impacts of climate change, particularly flooding, on land and water resources in the country. The proposed project strongly aligns with the NAPA, as it will complement the response to priority needs outlined within this national plan, as well as other plans that have been integrated into it. This alignment is evidenced in the project's focus on promoting the adoption of an integrated approach to land and water resources management to increase the climate resilience of the most vulnerable communities in the Trois Rivières (TR) region of Haiti.

- The proposed project aims to build on achieved results of the national adaptation planning (NAP) process, supported by a GCF Readiness project, through the strengthening of institutional and technical capacities and the strengthening of existing frameworks and systems. The NAPA called for increased local and sub-regional capacity to support adaptation initiatives and NAP implementation, in the form of an Inter-sectoral Regional Programme Approach (APRIS). This approach aims to better focus the efforts of government and non-government actors at the regional level by making it possible to adequately implement programs and projects, and to better meet the needs of populations in the regions of the country. APRIS opens the possibility for broader inclusion of civil society groups at a decentralized level and to build their capacities for influencing and implementing localized actions on climate change adaptation. It also aims to develop regions considering the environmental and economic potential of each, while seeking coherence and complementarity in actions, in line with land-use planning approach and socio-economic national development strategy. The GCF NAP project builds on these existing processes and cooperates with ongoing initiatives to strengthen the Government of Haiti's capacity to effectively respond to climate change threats while avoiding duplication of efforts.
- The **Strategic Development Plan for Haiti (SDPH)**¹⁰⁸ (*Plan Stratégique de Développement d'Haïti*) of 2012 presents a plan for long-term development centred around four core themes. Specifically, this plan focuses on building resilience to climate change impacts by: i) mainstreaming climate change considerations into planning and awareness-raising initiatives at the national and local level; ii) establishing a network of protected areas; iii) restoring degraded ecosystems; and iv) managing the use of watersheds and forests in a sustainable way. The proposed project strongly aligns with the country's adaptation priorities in that project interventions will increase the climate resilience of the TR region through ecosystem restoration, as well as improved watershed and landscape management.
- Haiti's **Nationally Determined Contribution (NDC)**¹⁰⁹ has the following adaptation priorities: i) enhancing the resilience and sustainable management of 15 watersheds; ii) undertaking afforestation and/or reforestation activities of 137,500 ha of land; iii) strengthening the protection of coastal areas; and iv) preserving marine protected areas across the country's coastal zone. The focus of the proposed project on enhancing climate-resilient land and water resources management supported by agroforestry interventions is, therefore, strongly aligned with the priorities and objectives set out in the NDC.
- The **Initial (First) and Second National Communication on Climate Change to the UNFCCC (INC and SNC)**^{110,111} highlight the importance of managing watersheds to address the impacts of climate change. Both communications emphasise the need to: i) implement climate-resilient solutions that will address the impacts of climate-induced flooding on vulnerable communities and the main economic sectors (e.g. agriculture); ii) promote the adoption of an integrated approach to land and water resources management in the country; and iii) strengthen the cohesion between existing and planned initiatives focused on landscape and watershed management, informed by best practices generated from past projects and/or programmes across the country and Caribbean region. The proposed project is strongly aligned with the abovementioned adaptation needs. Specifically, project interventions will promote the adoption of an integrated approach to land and water resources management in the TR region and, in so doing, will initiate a shift away from existing decentralised management of natural resources towards climate-resilient sustainable development.

¹⁰⁶ Available at: <https://www.imf.org/external/pubs/ft/scr/2008/cr08115.pdf>

¹⁰⁷ In French, referred as *Plan National de Gestion des Risques et des Désastres* — PNGRD.

¹⁰⁸ In French, *Plan Stratégique de Développement*— PSDH. Available at:

http://www.ht.undp.org/content/dam/haïti/docs/Gouvernance%20démocratique%20et%20état%20de%20droit/UNDP_HT_PLAN%20STRATÉGIQUE%20de%20développement%20Haïti_tome1.pdf

¹⁰⁹ MdE, *Contribution Prévue Déterminée au Niveau National*. 2015.

¹¹⁰ Available at: <https://www.ldc-climate.org/country/haïti/>

¹¹¹ UNEP. Enabling Activities for the Preparation of the Second National Communication under the UNFCCC. Available at: http://www.un-gsp.org/sites/default/files/documents/haïti_prod0c_29.09.2005.pdf

- The **Action Plan for Water Resources Management in Haiti** was developed in 1999. Outlined in this document are the needs for: i) reforms; ii) legal frameworks; iii) capacity building among policymakers and water users; and iv) recognition of the economic importance of water resources and the need for integrated management of these resources. In a 2018 review of the 1999 Action Plan where the progress of implementing integrated water resources management (IWRM) initiatives in Haiti was assessed, the country obtained a score of only 29 out of 100¹¹². The Action Plan noted gaps in the country's capacity for implementing IWRM. These gaps were largely because of: i) a limited enabling environment; ii) the unavailability of management instruments; and iii) limited finance for the efficient implementation of interventions. The gaps were also highlighted in the review of Action Plan, showing limited progress towards IWRM in Haiti since 1999. Project interventions will support the current three-year work plan (2019–2021) through prioritising addressing the capacity gaps noted in the 2018 review of the action plan.

Stakeholder engagement

179. The proposed project has been designed following extensive consultations with members of the Haitian government, public authorities, civil societies, and the private sector¹¹³. Haiti's NDA, the MoE, has been fully involved in the development of this project since inception through its valuable contributions to the consultation process and inputs during field missions. UNDP has facilitated dialogue between the MARNDR, other relevant institutions, as well as the MoE, to confirm that the project responds to the adaptation priorities of the country. Furthermore, the proposed adaptation interventions under this project have been validated by all the relevant project stakeholders, including the NDA.
180. Consultations were organised by UNDP in the North-West, North and Artibonite regions of Haiti. Given the observed impacts of flooding on the communities in these regions, developing climate-resilient solutions that are supported by technical assessments to address this problem were prioritised by the GoH and other stakeholders, including women's and farmers' associations. Discussions — with the regional branches of the MoE, Civil Protection Agency (DPC), Ministry of Economy and Finance (MEF), the National Directorate for Water Supply and Sanitation (DINEPA) in the Ministry of Public Works, Transport and Communications (MTPTC) and the Regional Water Supply and Sanitation Office (OREPA) and irrigation associations — also underlined the need for a coordinated effort towards improved flood risk management as the preferred solution for increasing resilience to climate change-induced flooding. Additional adaptation priorities that were discussed during stakeholder consultations included the need for: i) improved policies on natural resource management; ii) strengthened coordination between adaptation projects, donors, and their executing entities; iii) further information on climate change and adaptation solutions to facilitate decision-making around flood management; and iv) the implementation of climate-resilient solutions to reduce the impact of climate change and natural hazards on vulnerable communities in the regions.
181. During the implementation phase, all target beneficiary groups will remain engaged to ensure that the benefits conferred by project interventions respond directly to the needs of these groups. This will simultaneously encourage stronger inputs from stakeholders, while allowing for challenges that may be encountered to be addressed early on, which will reduce adverse effects on project implementation. Further details on the stakeholder engagement process relevant to the project development and implementation phases are presented in Annex 7: Stakeholder engagement plan, with specific details related to the grievance mechanism and environmental and social risk mitigation measures presented in Section 10 of Annex 6: Environmental and Social Impact Assessment and Management Plan.

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

182. The Government of Haiti (GoH) is requesting US\$22.7 million in GCF grant finance to implement climate-resilient integrated water resources management (IWRM) to respond to the impacts of flooding on the Trois Rivières (TR) watershed. This GCF investment will be supported by the Heifer International Haiti, which has committed US\$8.86 million¹¹⁴ in co-financing for the implementation of project interventions. Funding from the GCF will only be used to address the additional impacts of climate change, with co-finance from the Heifer being used to cover all baseline costs — such as business as usual operations and maintenance necessary to ensure sustainable land and water resources management. With the support of GCF grant funding, the proposed project will deliver several adaptation benefits using an integrated approach to land and water resources management that will contribute to achieving a paradigm shift in the country's approach to addressing the impacts of climate change-induced flooding¹¹⁵. A GCF

¹¹² UN Environment. 2018. Progress on integrated water resources management. Global baseline for SDG 6 Indicator 6.5.1: degree of IWRM implementation.

¹¹³ Further details on the engagements conducted for the development of the proposed project are presented in Annex 7: Stakeholder engagement plan.

¹¹⁴ the equivalent of €7.06 million

¹¹⁵ A detailed description of project activities is presented in Sections B.3 and E.6 of the Funding Proposal.

grant is deemed the most appropriate level of concessionality given: i) the public good nature of the project's activities and lack of financial reflows; ii) Haiti's status as a SIDS and LDC; and iii) the level of debt of the country, with its limited capacity to repay loans and iv) the project beneficiaries are small poor farmers that need grants to make these investments. Indeed, the absence of financial resources required to implement the necessary adaptation investments has been identified as a considerable barrier to implementing climate-resilient IWRM in Haiti.

183. The combined investment of nearly US\$31.58 million will be used efficiently and effectively to achieve three main project objectives. First, agroforestry and ecosystem restoration interventions will be implemented at priority sites in the TR watershed to improve the infiltration of water into soils and increase surface roughness. This will contribute to attenuating overland flows from heavy rainfall events and consequently reduce the severity of associated flood events. Second, a shift from unsustainable land-use practices, including charcoal production, towards productive land-use management will be initiated in the TR watershed. This will be achieved by enhancing the technical and institutional capacity of decision-makers involved in agriculture and charcoal production at the commune, inter-commune and department levels in the watershed to implement climate-resilient and sustainable land-use management techniques. Specifically, communal development councils and multi-sectoral management structures will be established to oversee and manage the implementation of Sustainable Land Management (SLM) interventions. To support this, training will be provided to representatives from relevant government entities, including MARNDR, NCFS and MSAL, on the implementation of SLM in the TR watershed. Additionally, an agricultural finance mechanism will be established under the VSCA. Under this mechanism, financing will be made available to smallholder farmers to facilitate their adoption and implementation of sustainable, climate-resilient agricultural practices. This long-term solution will be supplemented by providing immediate relief, in the form of food coupons, to vulnerable people affected by climate change. This will not only safeguard the lives of these people against the immediate climate change shocks but also contribute to reducing further pressure on the environment by providing an alternative option to resorting to unsustainable charcoal production.
184. Last, the required governance framework for integrated land and water resources management will be established and implemented at catchment and sub-catchment levels in the TR watershed to optimise the sustainable use of these resources under future climate change conditions. The cost-effectiveness of proposed project interventions as well as a summary of the international best practices and lessons learned used to inform project development are presented below.

Cost-effectiveness of project interventions

185. Climate change-induced flooding in Haiti severely impacts vulnerable communities living in the TR region through inter alia the degradation of land and water resources, reduced resilience of agricultural livelihoods and increased prevalence of waterborne diseases. The projected reductions in total average annual rainfall combined with an increase in intensity of concentrated precipitation events under RCP4.5 and RCP8.5 scenarios are expected to exacerbate these flood impacts. In order to take decisions regarding the type of climate change adaptation options that the Government of Haiti (GoH) should implement to respond to this, it is necessary to understand the adaptation expenditure options and expected internal rate of return (IRR) on these options. To do this, a financial and economic analysis (FEA) was conducted to inform this decision-making¹¹⁶. This analysis focused on determining costs and benefits associated with: i) implementing EbA interventions, including agroforestry and reforestation activities, to enhance the resilience of the TR watershed to climate change-induced flooding; ii) facilitating sustainable catchment management practices with the strengthening of agricultural value chains; and iii) supporting the GoH in the development of a national-level policy framework to facilitate IWRM in Haiti.
186. The economic analysis estimated the net present value (NPV) of interventions to be US\$376 million with an internal rate of return (IRR) of 40.7%, therefore representing a highly cost-effective spend for GoH. The estimated health benefits under the FEA considered water-borne diseases (such as diarrhoea and cholera) that would, without project interventions, likely increase in prevalence because of increased flooding and related impacts. Relevant literature on the link between these diseases and floods was used to estimate the likely number of additional cases,

¹¹⁶ The financial and economic analysis undertaken to support the proposed project is presented in Annex 3: Financial and Economic Analysis.

morbidity, and mortality^{117,118,119,120,121,122}. Benefits from agroforestry interventions were estimated based on field data in the financial analysis. Benefits of avoided infrastructure damage due to floods was calculated based on Gaspard (2016) which is limited to calculating direct damages to households.

187. The economic analysis of the proposed project was carried out in accordance with the *Guidelines for the Economic Analysis of Projects of United Nations Development Program*.¹²³ The economic efficiency of the investment was determined by computing the economic net present value (NPV) with an assumed 10% discount rate, and the economic internal rate of return (EIRR). For consistency purposes, all proposals developed with the support of UNDP have thus far opted to use a 10% discount rate, in line with the existing practice of multilateral development banks.
188. Economic values (costs and benefits) are all measured in real terms of 2019. Economic costs of the project are net of taxes, duties, and price contingencies. Furthermore, the analysis assumes a shadow wage rate of 1.00 for unskilled and semi-skilled labour in Haiti. Given the official unemployment rate of approximately 14%,¹²⁴ the economic cost of unskilled labour in Haiti is expected to be considerably lower than the market wage rate (financial cost). As a result, this assumption leads to significantly *over-estimating* the economic cost of the project and thereby *under-estimating* the true net economic value of the project. The above assumption allows the use of financial cost as a measure of the economic cost of the project (once again noting that in doing so, the economic cost of the project is over-estimated, and the net present value of the investment is then under-estimated).
189. As is common when undertaking the economic analysis of investment projects, numerous assumptions were used to delineate the “with project scenario” from the “without project scenario”. These assumptions are presented and discussed in Annex III where the detailed economic analysis is presented. Assumptions were made so as to under-estimate the true net economic value of the proposed investment project. The analysis covers a period of 25 years, from 2019 to 2043.
190. *Economic costs.* Economic costs were obtained from the project budget. They were available for each of the 3 outputs in addition to project management. With the exception of the co-financing, project costs were also available for each of the 8 years of project implementation. Solely for purpose of the economic analysis, it is assumed that the co-financing is disbursed annually at the same as GCF funding. This provided a flow of project cost as presented in the table below.

Total Cost of the Project per Output per Year

Output	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Output 1	18,399,600	301,200	1,079,340	1,148,990	4,446,050	4,316,700	4,231,050	1,865,130	1,011,140
Output 2	8,303,355	1,088,628	1,416,536	1,335,623	1,373,123	1,144,106	1,046,831	898,508	0
Output 3	3,273,519	481,880	395,720	527,666	432,866	428,666	360,220	299,820	346,680
Mgmt	1,314,087	152,867	171,573	158,280	177,564	172,559	158,118	154,163	168,965
Total	31,290,561	2,024,575	3,063,169	3,170,559	6,429,603	6,062,031	5,796,219	3,217,621	1,526,785

¹¹⁷ Eisenberg, M.C. *et al.* 2013. Examining Rainfall and Cholera Dynamics in Haiti Using Statistical and Dynamic Modelling Approaches. *Epidemics* 5 (4).

¹¹⁸ Barzilay, E.J. *et al.* 2013. Cholera Surveillance During the Haiti Epidemic — The First 2 Years. *New England Journal of Medicine* 368 (7).

¹¹⁹ WHO. 2010. Public health risk assessment and interventions. Earthquake: Haiti. Available at: https://www.preventionweb.net/files/12945_haitiearthquake201001181.pdf

¹²⁰ WHO. 2004. Cholera outbreak: Assessing the outbreak response and improving preparedness. Available at: https://apps.who.int/iris/bitstream/handle/10665/43017/WHO_CDS_CPE_ZFk_2004.4_eng.pdf;jsessionid=79C09A3DE1F0B1E71168734BACFD790D?sequence=1

¹²¹ Gaudart, J. *et al.* 2013. Spatio-Temporal Dynamics of Cholera during the First Year of the Epidemic in Haiti. *PLoS neglected tropical diseases*. 7.

¹²² CDC. 2011. Lessons Learned during Public Health Response to Cholera Epidemic in Haiti and the Dominican Republic. Available at: https://wwwnc.cdc.gov/eid/article/17/11/11-0827_article

¹²³ UNDP. 2015. *Guidance on the conduct and reporting of the Economic and Financial Analysis of Climate Change Adaptation and Mitigation Projects and Programmes*. UNDP.

¹²⁴ <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=HT>

191. Project benefits included in the economic analysis are health benefits of the project and improvement in rural livelihoods. Both of these benefits are estimated on an annual basis, comparing with and without project scenarios in presence of climate change.

192. *Health benefits.* Health benefits were limited to a reduction in the number of cases of cholera and mortality. These reductions were estimated by constructing a scenario of the potential number of such cases (of cholera and mortality) with climate change in the absence of the project, and another scenario of the potential number of such cases with climate change with the project. Three scenarios are developed in terms of the possible impacts of the project on reducing the number of cases morbidity and mortality: Scenario 1: a 10% reduction; Scenario 2: a 20% reduction; and Scenario 3: a 30% reduction. Based on best available information, a cost per case of cholera in Haiti was estimated to be \$35. For purpose of assessing the economic value of mitigating the death toll, a value of statistical life (VSL) of \$223,500 is used in the analysis (a sensitivity analysis on this estimate was also calculated). Details are available in Annex III.

193. *Rural livelihood benefits.* A financial analysis of agroforestry was carried out based on field data. The table below provides a summary of these results with and without GCF support:

Perspective	NPV		IRR		Payback period	
	Without GCF	With GCF	Without GCF	With GCF	Without GCF	With GCF
Smallholder farmer - Agroforestry	USD 1.818,33	USD 3.618,41	25%	42%	4	3

194. Additional assumptions for the economic analysis are:

- As reported in the Feasibility Study, the average farm size within the TR catchment ranges between 0.8 and 1.2 hectares (ha). For purpose of the economic analysis, it is assumed that average farm size is 1.0 hectare.¹²⁵ It is also assumed that the number of household farms benefiting from the agro-forestry activities of the project is 17,740 farms, thus reaching a total of 17,740 ha.
- Profit margins in the sector are estimated to be approximately 10%.
- It is important to note that the net incremental benefits from agroforestry are deducted by \$9.15 per ha which is an estimate of the foregone net revenues from charcoal production.¹²⁶

195. *Infrastructure benefits.* The proposed investment project shows a significant reduction of the projected extent of flood zones and impacts of the project on the number of houses and infrastructure exposed to projected floods (relative to a no project scenario). There is however limited information currently available on *historic* losses and damages to the stock of housing and infrastructure. The only estimate we could find is Gaspard (2016) which estimated the direct losses due to flooding in 2004 by interviewing households throughout the Gonaïves region (located adjacent to our project area). He estimated direct damages (by asking how much it would cost to repair the houses due to flood damages) at between USD960.85 and USD1489.5 per household. It is important to note that these benefits only consider direct damages from flooding (e.g. the cost to repair the damage) and only consider household costs (and not costs to public infrastructure, schools, hospitals, public administration. Therefore, we present these numbers with a strong word of caution that they do not represent the extent of flooding damages the project will reduce. These costs were included in the economic analysis without changing results significantly.

196. *Economic efficiency.* In the base case, the NPV of the project is estimated to reach between \$375 and \$412 million depending of the scenario of flood reduction benefits developed earlier (as presented above). The IRR ranges between 41% and 43%.

Base Case: Estimated NPV and IRR

¹²⁵ In a World Bank recently funded project of a somewhat similar nature but in the Southern departments of Haiti, a similar assumption of an average farm size of 1.0 hectare is also made. See: World Bank. 2018. *Project Appraisal Document on a Proposed Grant to the Republic of Haiti for a Resilient Productive Landscapes Project*. World Bank. Washington, D.C. (page 74)

¹²⁶ Kennedy, N.S. 2015. Id.

	NPV	IRR
Scenario 1	375.516.111	41%
Scenario 2	393.838.100	42%
Scenario 3	412.160.089	43%

197. The above estimates already include a sensitivity analysis pertaining to the expected flood benefits of the project (from the construction of the 3 scenarios). In addition, a further sensitivity analysis was included: a reduction of 20% in total benefits; an increase of 20% in total costs; and a combination of both of these scenarios. Results are presented in the table below. Results show the project's economic efficiency to be robust to these changes.

Sensitivity Analysis (1): Changes in Costs and Benefits

		NPV	IRR
Benefits: - 20%	Scenario 1	297,547,350	38%
	Scenario 2	312,204,941	39%
	Scenario 3	326,862,533	40%
Costs: +20%	Scenario 1	372,961,434	38%
	Scenario 2	391,283,423	40%
	Scenario 3	409,605,412	41%
Benefits: - 20% and Costs: +20%	Scenario 1	293,438,365	36%
	Scenario 2	308,095,957	37%
	Scenario 3	322,753,548	38%

Application of best practices in land and water resources management

198. Best practices from similar projects¹²⁷ were used to inform the design of IWRM interventions to be implemented under the proposed project. Lessons learned from numerous baseline investments into climate change adaptation in Haiti were also used to guide the design of all project interventions. Such lessons include appropriate mechanisms for ensuring that project activities are implemented in a participatory, gender-inclusive and sustainable way. The specific international best practices and lessons learned that were applied to the design of the proposed project and that will contribute to the efficiency and effectiveness of project interventions are summarised below. Additionally, details on all best practices and lessons learned relevant to the project are presented in Section 7 of Annex 2: Feasibility Study.

199. International best practices and lessons learned identified for the project include:

- ensuring that landscape planning, implementation of policies and strategies and monitoring processes are implemented using an integrated and iterative approach to account for the dynamic nature of landscape processes;
- acknowledging the need to regularly engage stakeholders in an equitable manner to ensure that adaptation benefits and incentives of integrated land and water resources management are responsive to the needs of the target groups;
- ensuring that water resource planning and management is linked to Haiti's overall sustainable development strategy and public administration framework;
- acknowledging that approaches to land and water resources management will evolve as the pressures on natural resources change;
- facilitating participatory monitoring and adaptive management by ensuring that information is widely accessible and not controlled by any single stakeholder;
- incorporating traditional knowledge into training for farmers and local communities on climate-resilient agricultural practices as well as land and water resources management strategies;

¹²⁷ as outlined in Section B.1 of this Funding Proposal and Section 6 of Annex 2: Feasibility Study

- ensuring the provision of high-quality seedlings and starter kits for nurseries to create a sustainable agroforestry production cycle;
- drawing on regional, national and local experiences and resources to increase capacity to respond to the impacts of extreme events;
- developing appropriate strategies for securing financial resources for project development and implementation;
- effectively managing the available financial and human resources to ensure the efficient and cost-effective implementation of project interventions;
- undertaking regular monitoring and evaluation (M&E) of climate-adaptive interventions to ensure that the most effective and appropriate solutions are being implemented under future conditions of climate change;
- engaging and collaborating extensively with all relevant project stakeholders to encourage buy-in from national- and local-level decision-makers, which will contribute to the sustainability of proposed adaptation interventions over the long term; and
- implementing effective financial and project management strategies to ensure the efficient use of financial resources and avoid delays during the implementation phase.

LOGICAL FRAMEWORK

*This section refers to the project/programme's logical framework in accordance with the **GCF's Integrated Results Management Framework** to which the project/programme contributes as a whole, including in respect of any co-financing.*

E.1. Project/Programme Focus

- ☐ Reduced emissions (mitigation)
☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

This section of the logical framework is meant to help a project/programme monitor and assess how it contributes to the paradigm shift described in section D.2 above by applying three assessment dimensions - scale, replicability, and sustainability.

Accordingly, for each assessment dimension (see the definition per assessment in the accompanying guidance note), describe the current state (baseline) and the potential scenario (target) and rate the current state (baseline) by using the three-point-scale rating (low, medium, and high) provided in the guidance note. Also describe how the project/programme will contribute to that shift/ transformation under respective assessment dimensions (scale, replicability and sustainability). In doing so, please refer to section B.2(a) (theory of change).

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	Various initiatives in Haiti have been developed to increase its capacity for ecosystem management as well as to enhance its capacity for disaster risk reduction. However, while these initiatives have mobilized important resources, many of these have been unsuccessful in reaching the territorial scale that is required to	<u>Low</u>	The paradigm shift will be two fold. First it will take on a user end approach in its ecosystem based interventions that will allow the project to create the enabling conditions that will allow for these interventions to achieve the scale that is required to result in adaptation benefits in the form of flood reduction. This will include a strong community based focus that is linked to livelihood and health benefits but is also informed by the hydrological models developed by the project, thus ensuring that ecosystem based interventions are prioritized in areas that will effectively reduce climate induced flood risk.	The scale of the project is built around the principles of climate-resilient, sustainable development and underpinned by three main interventions. First, agroforestry systems will be established and degraded forests restored at priority intervention sites across the watershed to: i) reduce peak surface runoff and flood extent; and ii) provide alternative livelihood options to the unsustainable land-use practices on which most vulnerable communities in the TR watershed depend. Second, complementary interventions focused on enhancing technical and institutional capacity at the commune, inter-commune and

	<p>achieve meaningful adaptation benefits.</p> <p>Often these projects are focused at a sub catchment rather than a catchment level, or invest in limited actions at an ecosystem level that do not allow them to reach their disaster reduction objectives that are originally expected. The lack of scale in results by these initiatives comes as a result of initiatives that fail to include an end user approach to the reforestation initiatives that is required to ensure the level of impact (in the form of survival rates and sustainability of ecosystem based investments) to produce the adaptation benefits that are required. Failure to produce these or other tangible benefits also limit the scale and reach of these projects to a meaningful part of the population (as ecosystem investments are often not guided on producing adaptation benefits). As these interventions are often implemented without linkages to national policies they also fail to reach the transformative</p>		<p>At a community level, the paradigm shift will involve shifting away from current degrading practices – resulting from poor land-use planning and a lack of viable livelihood alternatives – that are increasing flood risk in Haiti, towards an integrated approach to flood management to adequately address the diverse impacts of climate change-induced flooding on the watershed and population living within it. This will include shifting decision-making on flood management away from the existing uncoordinated and compartmentalised approach, towards an integrated approach that is underpinned by the uptake and implementation of climate-resilient land-use practices that will result in enhanced ecosystem based flood protection, strong governance, as well as the sustainable use and management of land and water resources. Together these actions will create a concept of proof that will be observed at a catchment level scale (rather than sub catchment) and will be observed in the project's capacity to deliver on benefits to over 700,000 people both directly and indirectly. The scale of these results will in turn be measured to carbon sequestration, health monitoring, increased water supply and reduced risk to allow for it to become a relevant to policy makers and development practitioners working in the country</p>	<p>department levels will be implemented to promote productive climate-resilient agricultural practices and sustainable land management. In addition, the necessary governance framework for IWRM will be established in Haiti to support the uptake of climate-resilient land management systems and facilitate sustainable use and management of water resources over the long term. Finally the project has integrated within it's the design the monitoring of the projects benefits as felt by the communities to create linkages between the tangible results seen as a result of the project in the form of improved livelihoods, food security, health and flood protection thus creating a connection between the scale of the project's investments (at a catchment level) to the concrete benefits that are being felt by the community within the project's target areas.</p>
--	--	--	---	---

	effect that is needed to evidence the role of EBA as a viable adaptation strategy in the country that is linked to multiple co benefits as these fail to materialize at the level that is required or are not monitored.			
Replicability	<p>While several initiatives have attempted to introduce sustainable land-use systems in Haiti, the lack of a coordinated and integrated decision making processes by land planners, as well as the knowledge and technical capacity of communities to adopt sustainable practices, and immediate economic vulnerability is constraining the uptake of agroforestry and restoration activities in Haiti. Lack of information on the economic returns of agroforestry at the community level for example have made this transition appear risky in light of immediate economic needs and there are limited financial mechanisms to help enable these.</p>	<u>Low</u>	<p>Together, project interventions will transform flood management in Haiti by catalysing a shift away from uncoordinated, compartmentalised decision-making around flood management, towards an integrated approach that can be scaled up and replicated nationally. This will be enhanced by demonstrating the viability of eco-businesses linked to agroforestry (reducing the risk assessment constraint), will promote the uptake of project interventions across other watersheds in the country by other farmers. From a development perspective it will also demonstrate the importance of generating social protection to communities during the transition period between unsustainable land management practices to encourage a just transition, thus informing future approaches linking EBA to green growth opportunities. It will also generate financial mechanisms through VSCA to help not only sustain these practices but encourage its replicability through access to savings.</p>	<p>The replicability of the project interventions will be underpinned by the drafting of revisions to the Water Act for the adoption of an integrated approach to water resources management in Haiti as well as the establishment of Catchment IWRM Committees, as well as Sub-Catchment Water Resource Users Associations in each of the country's watersheds (Output 3). As a result of these changes, a new strategy will be developed for IWRM in Haiti that addresses both the existing challenges of a fragmented and uncoordinated system of water management, particularly at a catchment and sub-catchment level, as well as the current and projected impacts of climate change-induced flooding. Output 2 will also train representatives from appropriate government entities, including MARNDR, NCFS and MSAL, on the implementation of climate-resilient agricultural techniques and SLM, which can be transferred across other regions in the country.</p> <p>More significantly the tangible benefits from the EBA approach will motivate replicability of the sustainable management of water and land resources by farmers in the region as these will be linked to increased food security and incomes. The project will work to create</p>

				VSCAs as financial mechanisms to enable upscale and continued investment.
Sustainability	<p>Although the establishment of a Water Act has been identified as one of the Ministry of Environment's priorities in its 2019-2022 Triennial Plan, there are currently no integrated, climate-sensitive water or sustainable land management policies and governance frameworks in Haiti to allow for its practical implementation. The country lacks overarching water management legislation, a formal cadaster, a standard practice for land tenure arrangements, or relevant strategies to promote sustainable landscape management.</p> <p>Households make decisions in their own immediate interest, without necessarily considering the impact of those decisions on the sub-catchment and the long-term impacts on their own wellbeing thus increasing their vulnerability to climate impacts such as flooding. There is no experience or incentive among water</p>	<u>Low</u>	<p>Relevant stakeholders at national, department and commune levels have the technical and institutional capacity for the implementation of an integrated approach to land and water resources management that is centered around sustainability and climate resilience. This will enable the compatibility of SLM with the effective functioning of the entire watershed which, in turn, will contribute to enhancing flood management across the TR watershed. By building the capacity of the targeted institutions, the transfer of knowledge and skills related to sustainable watershed and flood management will extend beyond the project. These results are enhanced through monitoring (such as health) that will provide relevant information regarding the benefits of IWRM for local communities.</p> <p>Vulnerable farmers are equipped with the necessary knowledge and support to transition from unsustainable agricultural and charcoal production practices towards the development of sustainable agroforestry businesses that are progressive and gender-responsive. These in turn provide not only economic benefits but also increase resilience through EBA induced flood protection at a territorial level thereby reducing the potential impacts from climate induced flooding to lives and livelihoods.</p> <p>Positive impacts of EBA seen in water and food security as well as increased income and improved health will sustain the EBA interventions by creating an added value to</p>	<p>Under the project, the technical and institutional capacity of relevant stakeholders at national, department and commune levels will be strengthened for the implementation of an integrated approach to land and water resources management that is centered around sustainability and climate resilience. By building the capacity of the targeted institutions, the transfer of knowledge and skills related to sustainable watershed and flood management will extend beyond the project.</p> <p>Strengthening of the Water Act will establish a legal foundation for optimising the use of water resources without compromising the sustainability of vital ecosystems under future climate change conditions, consequently, securing equitable economic and social welfare. The Water Act will also provide a framework for the institutionalization of integrated watershed management to empower regional administrations across Haiti — through establishing Catchment Water Resources Management Committees (CIWRMCs) and Sub-Catchment Water Resource Users Associations (SCWRUAs).</p> <p>The country-driven project has been developed using a participatory and consultative process, enabling all relevant stakeholders to contribute to the design of interventions, ensuring buy-in and commitment from national- and local-level stakeholders. More importantly to communities, the social protection system provided through the project as well as the EBA interventions that will be installed will provide tangible benefits to communities</p>

	users to consider sub-catchment scale water management in their household decision-making to enable long term strategies to reduce their own vulnerability by protecting critical water sources and ecosystems on which they depend.		communities through sustainable land and water management	linking the IWRM approach to reduced vulnerability.
--	--	--	---	---

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

Select appropriate IRMF core and supplementary indicators to monitor project/programme progress. More than one IRMF (core and or supplementary) indicators may be selected as applicable for each GCF results area and project/programme outcome (as defined in the table in section B.2(b)). If IRMF indicators are unable to measure any given project/programme outcomes, project/programme-specific indicators should be developed under section E.5 (project/programme specific indicators).

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final ¹²⁸	
<p><u>Total number of project beneficiaries</u></p> <p>Sum of all project beneficiaries identified under ARA1, ARA2, and ARA 4 accounting for overlaps</p>	<p><u>Core 2: Direct and indirect beneficiaries reached</u></p>	<p>Primary MoV</p> <p>Baseline and Completion Surveys and project participation lists¹²⁹</p> <p>Simulation of future flooding impact on households taking into account historical, no action scenarios and conditions derived from project</p>	<p><u>Direct: 0 (Male: 0, Female: 0)</u></p> <p><u>Indirect: 0 (Male: 0, Female: 0)</u></p>	<p><u>Direct: At least 54,714 people (Male: 40,561 Female: 14,153)</u></p> <p><u>Indirect: At least 237,886 people in Haiti (Male: 114,185, Female: 123,701)</u></p>	<p><u>Direct: At least 292,600 people in Haiti (Male: 140,448, Female: 152,152)</u></p> <p><u>Indirect: At least 441,272 people in Haiti (Male: 211,811 Female: 229,461)</u></p>	<p>Projections for population growth taken by the project for the TR area are accurate (see Annex 3 for numbers)</p> <p>Direct beneficiaries calculated by project mid term do not account for EBA benefits that are expected to be seen only by the project's Y7.</p> <p>Identified farmers within the 33 communal section are willing to</p>

¹²⁸ The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

¹²⁹ Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data.

		<p>implementation (increased forest cover).</p> <p>Increased forest coverage within the project areas measured by GIS mapping (see above MoV)</p> <p>Statutes of Creation of the committees that specify their coverage area.</p>				<p>participate in land planning and land management capacity building exercises by the project's mid term accounting for direct beneficiary calculation at mid term</p> <p>Direct beneficiary calculation at project end includes all households identified that are located less than 30m to the waterways in the target communes (See Section 10.3 Site Selection Section in FS and Annex 3) per mapping by the project.</p> <p>Project investments in agroforestry and forest rehabilitation in priority areas are completed by the project's Y7 with 50% being achieved by Y5.</p> <p>Water management system provides effective governance to the benefit of all water users within the project's 33 communal sections</p>
<u>ARA1 Most vulnerable people and communities</u>	<u>Core 2: Direct and indirect beneficiaries reached</u>	Baseline and Completion Surveys ¹³⁰	<u>Direct: 0 (Male: 0, Female: 0)</u>	<u>Direct: At least 54,714 people</u>	<u>Direct: At least 292,600 people in Haiti (Male: 140,448,</u>	Projections for population growth taken by the project for the TR area are accurate (see Annex 3 for numbers)

¹³⁰ Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data.

		<p>Simulation of future flooding impact on households taking into account historical, no action scenarios and conditions derived from project implementation (increased forest cover).</p> <p>Increased forest coverage within the project areas measured by GIS mapping (see above MoV)</p> <p>Community land use plans developed</p> <p>Capacity assessment of farmers that have been provided with training</p>	<p><u>Indirect: 0 (Male: 0, Female: 0)</u></p>	<p><u>(Male: 40,561 Female: 14,153)</u></p> <p><u>Indirect: At least 237,886 people in Haiti (Male: 114,185, Female: 123,701)</u></p>	<p><u>Female: 152,152)</u></p> <p><u>Indirect: At least 441,272 people in Haiti (Male: 212,064 Female: 229,736)</u></p>	<p>Direct beneficiaries calculated by project mid term do not account for EBA benefits that are expected to be seen only by the project's Y7.</p> <p>Identified farmers within the 33 communal section are willing to participate in land planning and land management capacity building exercises by the project's midterm accounting for direct beneficiary calculation at mid term</p> <p>Direct beneficiary calculation at project end includes all households identified that are located less than 30m to the waterways (those most vulnerable) in the target communes (See Section 10.3 Site Selection Section in FS and Annex 3) per mapping by the project.</p> <p>Project investments in agroforestry and forest rehabilitation in priority areas are completed by the project's Y7 with 50% being achieved by Y5.</p>
--	--	--	--	---	---	--

<p><u>ARA2 Health, well-being, food and water security</u></p>	<p><u>Core 2: Direct and indirect beneficiaries reached</u></p>	<p>Baseline and Completion Surveys and project participation lists¹³¹</p> <p>Capacity needs assessment of farmers that have been provided with training</p> <p>Statutes of Creation of the water governance committees that specify their coverage area.</p> <p>Statutes of Creation/Reports of farmer field schools created by the project</p> <p>Adaptation interventions developed by the project and report on their usage</p> <p>Monitoring reports of beneficiaries receiving food coupons</p> <p>Statutes of Creation/Reports of VSCAs</p>	<p><u>Total: 0</u></p>	<p><u>Direct:</u> At least 10,000 people</p> <p><u>Indirect:</u> At least 226,400 people in Haiti (Male:176,112, Female: 190,788)</p>	<p><u>Direct:</u> 58,328 (male:42,362/ female: 15,966)</p> <p><u>Indirect:</u> 441,272 <u>Male:</u> 211,811 <u>Female:</u> 229,461</p>	<p>Direct beneficiaries under ARA2 include farmers with enhanced productive capacity through training provided by the project's Output 2 & members of households receiving food coupons as well as 340 technical staff from local governments (Refer to Annex 2 Section 10).</p> <p>Indirect beneficiaries under ARA2 include all water users within the 33 sub communes (total 733,872). To avoid double counting the number of direct beneficiaries under ARA 1&4 which are also water users (292,600) has been subtracted. These will benefit from improved water governance systems and their enhanced capacity in monitoring water quality and implementing improved (climate smart) water management practices</p> <p>Projections for population growth used for the indirect total beneficiary number taken by the project for the TR area are accurate (see Annex 3 for numbers)</p>
--	---	--	------------------------	---	--	--

¹³¹ Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data.

		enhanced/formed by the project				<p>Information on amount of farmers in the 33 sub communes (representing direct beneficiary numbers) responds to the 2008 the Agricultural Census and does not take into account population growth as it relates to associated farmers</p> <p>Representatives from farmers' association are willing to participate in the project through training for productive purposes as well as in the water management committees</p>
<u>ARA4 Ecosystems and ecosystem services</u>	<u>Core 2: Direct and indirect beneficiaries reached</u>	<p>Baseline and Completion Surveys¹³²</p> <p>Simulation of future flooding impact on households taking into account historical, no action scenarios and conditions derived from project implementation (increased forest cover).</p> <p>Increased forest coverage within the project areas measured by GIS mapping (see above MoV)</p> <p>Community land use plans developed</p>	<p><u>Direct: 0 (Male: 0, Female: 0)</u></p> <p><u>Indirect: 0 (Male: 0, Female: 0)</u></p>	<p><u>Direct: At least 54,714 people (Male: 40,561 Female: 14,153)</u></p> <p><u>Indirect: At least 237,886 people in Haiti (Male: 114,185, Female: 123,701)</u></p>	<p><u>Direct: At least 292,600 people in Haiti (Male: 140,448, Female: 152,152)</u></p> <p><u>Indirect: At least 441,272 people in Haiti (Male: 211,811 Female: 229,461)</u></p>	<p>Projections for population growth taken by the project for the TR area are accurate (see Annex 3 for numbers)</p> <p>Direct beneficiaries calculated by project mid term represent farmers that will participate in the implementation of agroforestry model and do not account for EBA benefits that are expected to be seen only by the project's Y7.</p> <p>Identified farmers within the 33 communal section are willing to participate in land planning and land management capacity building exercises by the project's midterm accounting</p>

¹³² Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data.

		Capacity assessment of farmers that have been provided with training for improved land use management in keeping with land use plans				<p>for direct beneficiary calculation at mid term</p> <p>Please refer to Annex 2 Section 11 for more details on calculations for total direct and indirect beneficiaries</p> <p>Project investments in agroforestry and forest rehabilitation in priority areas are completed by the project's Y7 with 50% being achieved by Y5.</p>
<u>ARA1 Most vulnerable people and communities</u>	<u>Supplementary 3.1: Change in expected losses of economic assets due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention</u>	<p>Baseline Survey and Year 7 monitoring if there is a flood event¹³³</p> <p>Simulation of future flooding impact on households taking into account historical, no action scenarios and conditions derived from project implementation (increased forest cover).</p>	<p>463 households affected by 20 year floods under the baseline scenario</p> <p>1,342 houses affected by a 100-year floods under the baseline scenario</p> <p>Assets in USD TBD¹³⁴</p>	<p>0 USD</p> <p>No immediate impact as agroforestry and reforestation actions will require increased time span to provide significant flood mitigation impacts .</p>	<p>At least USD 134,100 of savings on household losses assuming 35% fewer houses affected by the 20-year floods (163 households) at a minimum damage cost of USD 822.7 per household</p>	<p>Flooding simulations prepared during project development are able to project flooding impact based on climate change scenarios</p> <p>Population numbers for this output are those taken from the existing 2003 census information and do not take into account population growth.</p>

¹³³ Methodologically it is challenging to anticipate the change in losses of lives and set targets, so the indicator to be reported would focus on change in losses of economic assets US\$, noting that this can only be measured at project end point if there is a flood event at that time. In the absence of these, the project will be able to simulate impact based on the climate modelling used in the development of the project (See FS Annex II). The project in its economic analysis (Annex III) was able to calculate assets based on Gaspard (2016) that estimated household damage cost between USD 822.7 to USD 1275.35 due to flooding in the region in 2004. It is important to note that these benefits only consider direct damages from flooding (e.g. the cost to repair the damage) and only consider household costs (and not costs to public infrastructure, schools, hospitals, public administration). Therefore, these numbers while available are presented with a strong word of caution that they do not represent the extent of flooding damages the project will reduce and as such are not included within the log frame. A survey will be able to better present these amounts and will also account the cost of health impacts derived from extreme climate related disasters in the area. Annex III includes information re a reduction rate of 10-30% of diarrhea and its avoided costs (between USD 2.1 million to 6.4 million) by 2030 and demonstrating increased reduction amount over time (USD 3 million- 9 million by 2043) .

¹³⁴ Baseline Survey to be conducted in Year 1 of project implementation and reported in the first two annual progress report.

					<p>based on floodings in 2004</p> <p>At least USD 579,181 of savings on household losses assuming 50% fewer houses affected by a 100 year flood (704 households) at a minimum damage cost of USD 822.7 per household based on floodings in 2004</p> <p>Final US\$ amount will be determined based on survey information.</p>	If there is a flood event in Year 7, appropriate tracking of the final target will be undertaken.
<u>ARA2 Health, well-being, food and water security</u>	<u>Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options</u>	<p>Agricultural and beneficiary surveys to measure farmers' capacity for sustainable and climate resilient production, income and satisfaction</p> <p>Site visits</p>	<u>Total:</u> 0	10,000 farmers adopting sustainable productive land management measures as a result of the project	54,252 farmers (13,921 women and 40,331 men) adopting sustainable productive land management measures as a	<p>Agricultural census information (2008) used for beneficiary calculation remains accurate (these numbers do not account for population growth amongst associated farmers)</p> <p>The project's farmer field school approach for providing capacity building to agricultural</p>

					result of the project	associations allows for project derived training to extend to all associated farmers within the 33 sub communes Adaptation interventions invested by the project are accessible to all associated farmers within the 33 communal sections
<u>ARA2 Health, well-being, food and water security</u>	<u>Supplementary 2.2: Beneficiaries (female/male) with improved food security</u>	Baseline and completion survey Household surveys ¹³⁵	<u>Total: 0</u>	At least 25,245 beneficiaries (Male: 12,118, Female: 13,127) decrease in food insecurity. Accounting for an at least 8% households decreasing in food insecurity	At least 88,359 beneficiaries (Male: 42,412, Female: 45,947) decrease in food insecurity. Accounting for at least 28% of households that decrease in food insecurity	Calculations were made on the assumption that at the beginning of the project 43% of households in the TR watershed are food insecure. Calculation based on direct beneficiaries (292,600) and indirect beneficiaries (441,272) with an average of 5 persons per household, so based on the number of households in TR watershed: 146,774.4 a total of 63,113 households in the TR watershed are food insecure at the start of the project. Food vouchers provided through the project are

¹³⁵ The change in food security will be measured using the Household Economy Approach — HEA. The HEA methodology is based on the analysis of family/household livelihoods. It highlights how households usually support themselves, assess the impact of external factors on their livelihoods and provides recommendations to support coping strategies. It is a dynamic approach that divides households into four socio-economic groups, namely the "very poor", "poor", "better-off" and "haves". Evidence for Development is available at: <http://efd.org/methods/the-household-economy-approach-hea>.

						<p>effective in addressing immediate food security needs allowing for a reduction in unsustainable charcoal production.</p> <p>Households in the seven target communes adopt climate-resilient agriculture and sustainable land-use practices.</p> <p>Farmers in the project target area are willing to adopt new market opportunities for their produce.</p> <p>Communities participate in the VSCAs to mobilize savings for capital investments that increase their own productivity rate</p> <p>At end of project at least 28% decrease in food insecurity for farmers, communities and households in target communes.</p>
<p><u>ARA2 Health, well-being, food and water security</u></p>	<p><u>Supplementary 2.3: Beneficiaries (female/male) with more climate-resilient water security</u></p>	<p>Baseline and Completion Surveys¹³⁶</p> <p>Statutes of Creation of the water governance committees that specify their coverage area.</p> <p>Capacity assessment of the water governance</p>	<p><u>Total:</u> 0</p>	<p>Direct: 340 (102 women and 238 men)</p> <p><u>Indirect:</u> At least 226,400 people in Haiti (Male:176,112, Female: 190,788)</p>	<p>Direct: At least 340 (102 women and 238 men)</p> <p>Indirect: At least 441,272 people in Haiti (<u>Male: 211,811 Female: 229,461</u>)</p>	<p>Beneficiaries are water users that will fall under the jurisdiction of the newly created water governance committees (Output 3) and will have increased water security as a result of improved water management capacities created through the project</p>

¹³⁶ Means of Verification for Fund-level Impact and Outcome indicators will be triangulated with the baseline surveys that will be undertaken by project consultants, and at project mid-term and project end with the latest available national census data.

		<p>committees created under Output 3</p> <p>Minutes of meetings taking place in water governance committees at all levels specifying interventions made for enhanced water management</p> <p>Site visits</p>				<p>Improved capacity for water management planning and governance combined with improved land management practices will result in improved water security amongst water users.</p> <p>A governance water scorecard adapted to assess water catchment and sub catchment levels will be used based on UNDPs guide on assessing water governance.¹³⁷</p> <p>For Indirect Beneficiaries, the total number takes into account the total population of the TR watershed that are water users (733,872) minus the number of direct beneficiaries of water users under ARA 1& 4. The 340 are assumed to be part of the 292,600 direct beneficiaries.</p>
ARA4 Ecosystems and ecosystem services	Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice	<p>Baseline Survey;</p> <p>Site surveys; and</p> <p>GIS mapping</p>	0	<p>At least 8,870 ha of agroforestry systems established</p> <p>At least 3,850 ha of water towers rehabilitated</p>	<p>17,740 ha of agroforestry systems established</p> <p>7,700 ha of water towers rehabilitated</p>	<p>Sustainable land management practices will improve the provision of ecosystem services, including flood management (reduced run off hence reducing losses), increased water quality and agricultural productivity</p>

¹³⁷ UNDPs User's Guide on Assessing Water Governance available at:

<https://www.undp.org/sites/g/files/zskgke326/files/publications/Users%20Guide%20on%20Assessing%20Water%20Governance1.pdf> will be adapted, using Box 6.2 as reference.

<u>ARA4 Ecosystems and ecosystem services</u>	<u>Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems</u>	Baseline Survey; Site surveys; and GIS mapping	0	At least 8,870 ha of agroforestry systems established At least 3,850 ha of water towers rehabilitated	17,740 ha of agroforestry systems established 7,700 ha of water towers rehabilitated	Sustainable land management practices will improve the provision of ecosystem services, including increased water quality and agricultural productivity.

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Select at least two relevant IRMF core (enabling environment) indicators to monitor and elaborate the baseline context and project/programme's targeted outcome against the respective indicators. Rate the current state (baseline) vis-à-vis the target scenario and select the geographical scope of the outcome to be assessed. Describe how the project/programme will contribute towards the target scenario. Refer to a case example in the accompanying guidance to complete this section.

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
<u>Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner</u>	At present, the government is organised along departmental and communal lines. As a result, there is an overlap between existing water governance structures, particularly at the catchment and sub-catchment levels. This leads to challenges in coordination and planning, as well the effective and efficient implementation of an integrated approach to water resources management in the TR watershed.	<u>low</u>	The Water Act is developed and implemented to respond not only to national level priorities, but also to the adaptation needs of vulnerable communities living in vulnerable watersheds. Vulnerable communities are in turn empowered to act in support of IWRM through coordinated and more inclusive governance mechanisms.	The project will fund the establishment of the governance framework required to facilitate the adoption of a climate-resilient integrated water resources management (IWRM) approach in Haiti's TR watershed. Under Output 3, the capacity of the GoH will be strengthened to develop and implement the Water Act, which is an essential legal foundation for enabling participatory, integrated water resources	<u>Multiple sub-national areas within a country</u>

	<p>More importantly it has excluded the role of communities in the correct use of these critical resources particularly in consideration of future climate change conditions. It has also failed to create awareness of the linkages of IWRM to development. While the GoH has made good progress in drafting the Water Act to address these challenges, there is a need for technical assistance for the 'last mile' of its drafting, meaning its linkage at the territorial basin level and to the role of water users. This last mile is required to ensure the effectiveness of the Water Act in practice.</p>		<p>By strengthening national capacities for the implementation of the Water Act, promoting the adoption of an integrated, climate-resilient water management governance framework at the catchment and sub-catchment levels, and monitoring the impact of IWRM plans while linking these to concrete benefits, the governance framework will be establishing to facilitate the adoption of IWRM in Haiti both in a legal framework as well as in practice at a basin level.</p>	<p>management in Haiti's vulnerable watersheds.</p> <p>A Catchment Integrated Water Resources Management Committee (CIWRMC) will also be established to support the implementation of the Water Act.</p> <p>Together the project will create local capacities that will be able to enable the framework that is being promoted to the Water Act ensuring that once it is enacted it (and even if it is not) will detonate the change that is required, it will also create a local framework for action.</p>	
<p><u>Core Indicator 6: Degree to which GCF investments contribute to technology deployment, dissemination, development or transfer and innovation</u></p>	<p>Local communities have limited practical and technical experience to establish and manage local, financially sustainable small-scale operations for tree propagation, reforestation and agroforestry – compounding their climate vulnerability.</p>	<p><u>low</u></p>	<p>Local communities have the technical capacity to implement EbA interventions as flood reduction measures, including sustainable, climate-resilient land-use practices and techniques (e.g. agroforestry) to reduce the risk of increased land degradation under future climate change conditions. Enabling communities to adopt these activities as viable alternative livelihood</p>	<p>The project will strengthen the capacity of community groups, including farmer and women's associations, for climate-resilient land-use planning in seven target communes in the Trois-Rivières watershed. This will be complemented by direct support for the uptake agroforestry and restoration activities and the establishment of alternative livelihood practices and sustainable agroforestry businesses.</p>	<p><u>Single sub-national area within a country</u></p>

			options under the project will also incentivise their uptake and contribute to maintaining their social and environmental sustainability beyond the project lifetime.		
<u>Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level</u>	Farmers currently lack access to capital to invest in start-up costs, maintenance materials and tools, as well as limited “bridging” household reserves to cope with crises . Alternative sources of funding and credit are not available or are difficult to access, which leads to short planning horizons. These planning horizons drive short-term relief activities, such as the production of charcoal at unsustainable rates to meet pressing short-term financial needs.	<u>low</u>	Farmers have access to sustainable and affordable finance options that enable private investment in agroforestry, climate-resilient agriculture and agricultural value-chains.	The project will establish an adaptation finance mechanism for the agricultural sector. This mechanism will increase access to finance for smallholder farmers, therefore, encouraging a shift in land use away from unsustainable farming practices such as charcoal production.	<u>Single sub-national area within a country</u>
<u>Choose an item.</u>		<u>Choose an item.</u>			<u>Choose an item.</u>

E.5. Project/programme specific indicators (project outcomes and outputs)

This section should list out project/programme-specific performance indicators (outcomes and outputs) that are not covered in sections above (E.1-E.4). List down tailored indicators to monitor /track progress against relevant project/programme results (outcomes/outputs). AEs have the freedom to decide against which outcomes they would like to set project/programme specific indicators. If any co-benefits are identified in sections B.2(a)(b), and D.3, AEs are encouraged to add and monitor co-benefit indicators under the “Project/programme co-benefit indicators” section in table below. Add rows as needed.

Please number each outcome and output as shown below to indicate association of outputs to the contributing outcome. The numbering for outputs under this section should correspond to the output numbering in annex 4 (detailed budget plan).

			Baseline	Target	Assumptions / Note
--	--	--	----------	--------	--------------------

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)		Mid-term	Final	
Output 1. Ecosystem-based flood management solutions implemented in 25,440 hectares of the Trois-Rivières watershed	Hectares of land under agroforestry and/or rehabilitated for EBA	Baseline Survey; Site surveys; and GIS mapping	0 ha of agroforestry systems established 0 ha of water towers rehabilitated Forested area in the target catchment is 34%	At least 8,870 ha of agroforestry systems established At least 3,850 ha of water towers rehabilitated Forested area in the target catchment is 48%	17,740 ha of agroforestry systems established 7,700 ha of water towers rehabilitated Forested area in the target catchment is 62%	Sustainable land management practices will improve the provision of ecosystem services, including increased water quality and agricultural productivity.
Output 2. Climate-resilient agricultural practices, optimised value chains and social safety nets established to promote SLM and reduce degradation in the Trois-Rivières watershed	Number of farmers trained in climate resilient sustainable land use practices. % increase in yields per productive unit	Participants lists of farmer field schools. Baseline Survey; Site surveys (agricultural surveys)	0 farmers part of field schools 0	At least 5400 active representatives of farmers' associations in 33 communal sections 0, No immediate impact as improved agricultural practices will require increased time span to provide improved productivity and	At least 48,852 farmers within the farmers associations within the 7 communes who will benefit through indirect training provided by their representatives At least 25% increase from baseline	Representatives of farmers associations in 7 communes participate in farmer field schools Agricultural Census totaling all farmers associated within the farmers' association within the 7 communes minus their representatives that are direct beneficiaries (5,400) All households in the seven target communes are supported in adopting climate-resilient agriculture and sustainable land-use practices which increases productivity.

Co-benefit 1: Social Empowerment	Number of community land-use plans giving stewardship over forests and other natural resources	Land use plans created and validated by communities	0 community land-use plans	33 community land-use plans	33 community land-use plans	Participatory design of community land use plans provides local communities with stewardship over natural resources and promotes social empowerment.
Co-benefit 2: Carbon mitigation	GHG emissions reduced, avoided or removed/sequestered	Baseline Survey; Site surveys; and GIS mapping	0	436,410 tCO ₂ -e	1,018,290 tCO ₂ -e	Rate of sequestration is evenly distributed across the 25 year lifespan of project interventions. See ME Annex for mitigation calculation methodology
Co-benefit 3: Reduced incidence of water borne diseases	Reduced incidence of water borne diseases	Baseline Survey; Health Monitoring by WHO ¹³⁸ Government reports	Average incidence rate of cholera in the TR basin at 11.1 per 1,000 people ¹³⁹	0	At least a 10% reduction	No further aggravating conditions other than flooding occur that may increase the rate of water borne diseases (i.e. cancellation of preventive action campaigns) See Annex 3a Section C.3.2.1 for methodological assumptions for target and calculations.

E.6. Project/programme activities and deliverables

Activities	Description	Sub-activities	Deliverables
Activity 1.1 Strengthen the capacity of community groups, including farmer and women's associations, for climate-resilient land-use planning in seven target communes in the Trois-Rivières watershed	Under this activity, community members and farmer and women's associations in 33 communal sections within the 7 target communes in the TR watershed (Port-de-Paix, Chansolme, Bassin Bleu, Plaisance,	1.1.1 Develop 33 community land-use plans. 1.1.2 Train communities, farmer and women's associations in the	<ul style="list-style-type: none"> 33 community land-use plans 20 Trainings delivered in the seven target communes for communities, farmer and women's associations

¹³⁸ The World Health Organisation (WHO) will provide technical support to the project in the development of methodology that would enable comparison studies to be undertaken across watersheds similar to the methodologies being used for the monitoring of HIV and cholera in the country. This line of cooperation is backed up by the technical collaboration already established through the NAP process.

¹³⁹ Please refer to Annex III for methodological notes on calculation. The baseline will be updated as part of the project's scope and reported upon on the project's Y1 to include not just cholera but all.

	<p>Pilate, Marmelade, Gros Morne) will be trained on climate-resilient land-use management. 118 communities will be reached by these plans and the associated training, which will focus on:</p> <ul style="list-style-type: none"> • the expected impacts of climate change, particularly flooding, in Haiti and the associated consequences of these impacts on the population's livelihoods; • linkages between land-use and hydrology of the TR watershed, particularly the implications of unsustainable land-use practices on the frequency and intensity of flooding in the watershed; • promoting sustainable, climate-resilient agricultural practices such as slope stabilisation, riparian protection, and contour line farming, as well as the importance of protecting forest areas, as viable options for improving hydrological function of the watershed and reducing flood impacts; • the role of the community in sustainable charcoal production and reforestation, as a strategy for increasing climate resilience in the watershed; and • practical aspects of agroforestry as a climate-resilient livelihood alternative. <p>The groups of people targeted for training will also be encouraged to participate in the development of the community land-use plans, which will inform this training. The development of these plans will focus on identifying the impacts of climate change, particularly flooding, on the TR</p>	<p>seven target communes on the application of the community land-use plans and implementation of climate-resilient land-use practices.</p> <p>1.1.3 Conduct one awareness campaign in each of the seven target communes in Haiti.</p>	<ul style="list-style-type: none"> • Awareness campaigns designed and implemented in the seven target communes
--	---	--	---

	<p>watershed and designing appropriate actions for addressing these impacts. Furthermore, farmers will be targeted to receive training on the development of sustainable agroforestry business models that will contribute to both improving livelihood security and enhancing the use of sustainable land-use practices in the TR watershed. To support these capacity-building initiatives, awareness-raising campaigns will be designed and implemented in the seven target communes through city hall meetings and community radio broadcasts. These campaigns will focus on: i) increasing the knowledge of people living in the TR watershed on sustainable land-use practices and promoting the uptake of these practices; ii) encouraging community members to participate in the development of community land-use plans; and iii) raising awareness among people living in the target communes on the impacts of climate change-induced flooding and effective adaptation and landscape management solutions for addressing these impacts.</p>		
<p>Activity 1.2. Implement ecosystem-based flood management solutions in the Trois-Rivières watershed</p>	<p>This project activity will focus on reducing the impacts of climate change-induced flooding in the TR catchment and Port-de-Paix. This will be achieved by implementing 17,740 ha of agroforestry systems and rehabilitating 7,700 ha of forests in priority areas in the watershed. Implementing these EbA interventions will result in a 40% reduction in peak runoff, with rehabilitation interventions, in particular, expected to reduce floodplain extents in the target</p>	<p>1.2.1. Establish 17,740 ha of agroforestry systems in priority areas the TR watershed, including: i) agrisilvicultural systems — which are a combination of crops and trees, such as alley cropping; ii) silvopastoral systems — which combine forestry and grazing of domesticated animals; and iii) agrosilvopastoral systems that combine trees, crops and animals.</p>	<ul style="list-style-type: none"> 17,740 ha of agroforestry systems established in priority areas the TR watershed, including: i) agrisilvicultural systems — which are a combination of crops and trees, such as alley cropping; ii) silvopastoral systems — which combine forestry and grazing of domesticated animals; and iii) agrosilvopastoral systems that combine trees, crops and animals 7,700 ha of forests in priority areas the TR watershed reforested

	<p>areas by 20% and 26% under the 20-year and 100-year flood scenarios, respectively.</p> <p>The implementation of agroforestry systems has a particularly high adaptation impact potential because of the provision of ecosystem goods and services (e.g. improved quality and quantity of water, more productive and stable soils, and crop pollination) combined with the creation of alternative livelihood options to unsustainable land uses, such as unregulated charcoal production. All agroforestry activities will also involve extensive engagements with farmer and women's associations, as well as relevant community representatives and groups, to encourage a progressive and gender-responsive transition towards sustainable agroforestry businesses that are sustainable over the long term.</p>	<p>1.2.2. Restore 7,700 ha of forests in priority areas the TR watershed through planting indigenous tree species in degraded areas within the seven target communes.</p> <p>1.2.3. Hold 8 engagement workshops with community leaders, farmer and women's associations to facilitate the implementation of Sub-activities 1.1.2 and 1.1.3.</p>	<ul style="list-style-type: none"> 8 engagement workshops with community leaders, farmer and women's associations
Activity 2.1. Strengthen institutional capacity at the commune, inter-commune and department levels in Haiti's Trois-Rivières watershed for productive and sustainable land-use management	<p>Under this activity, a capacity needs assessment will be conducted for the agricultural sector to identify the technical and institutional requirements for transitioning the sector from unsustainable land-use practices towards a sustainable landscape management (SLM) approach to land and water resources management that is climate resilient. Capacity will be assessed in six of the seven target communes in the TR watershed. From the capacity needs assessments, opportunities will be identified, and plans made to enhance the management of natural resources and promote the uptake of climate-resilient agricultural practices to increase productivity. To facilitate the uptake of these new sustainable practices, governance mechanisms and frameworks</p>	<p>2.1.1 Conduct capacity gap/needs assessments for the agricultural sector in seven priority communes in the TR region.</p> <p>2.1.2 Establish communal development councils and multi-sectoral management structures to oversee and manage the implementation of interventions designed to address priority areas identified in Sub-activity 2.1.1</p> <p>2.1.3 Train representatives from appropriate government entities, including MARNDR, NCFS and MSAL, on the implementation of climate-resilient agricultural techniques and SLM.</p>	<ul style="list-style-type: none"> Capacity needs assessment Communal development councils established Trainings for government entities, including MARNDR, NCFS and MSAL, on SLM in the TR watershed

	<p>for SLM will be developed in the TR watershed through the establishment of communal development councils. These councils will represent all agricultural sector stakeholders, including smallholder farmers, in the seven communes. Additionally, multi-sectoral governance structures will be established to oversee and manage the implementation of interventions designed to address priority areas identified under the capacity needs assessment. Support for the governance structures established will be provided through strengthening the capacity of relevant government entities, including the Ministry of Agriculture, Natural Resources and Rural Development (/MARNDR), National Coordination of Food Security (NCFS) and Ministry of Social Affairs and Labour (MSAL), to implement SLM at the department level. This will enable the adoption of SLM practices to be guided in a manner that is compatible with the effective functioning of the entire watershed and that contributes to enhancing flood management across the TR watershed.</p>		
<p>Activity 2.2. Enhance the technical capacity and access to finance of national and local representatives involved in agriculture in the Trois-Rivières watershed for adopting climate-resilient sustainable land-use practices</p>	<p>This project activity will increase the technical capacity of farmers to implement climate-resilient agricultural techniques and land-use practices, using the findings from the capacity needs assessments being conducted under Activity 2.1.1. Specifically, this will be achieved through implementing targeted adaptation interventions in Haiti's TR watershed to optimise the agricultural value chain and promote the use of climate-resilient agricultural techniques across the sector. Such interventions will include enhancing the transportation of agricultural</p>	<p>2.2.1. Strengthen the technical capacity of farmers and communities in the seven target communes to implement climate-resilient agricultural practices and SLM.</p> <p>2.2.2. Provide climate-resilient agricultural inputs (e.g. climate-resilient seeds and infrastructure upgrades) to households in the TR watershed.</p>	<ul style="list-style-type: none"> • Trainings for farmers and communities in the seven target communes • Strengthened agricultural finance mechanism • Climate-resilient agricultural inputs/inputs and/or infrastructure provided to smallholder farmers

	<p>produce (e.g. by developing agricultural tracks), as well as improving water supply systems (e.g. irrigation and water pumps) to address decreasing water security caused by the impacts of climate change-induced flooding. Infrastructural upgrades will also be undertaken in the form of increasing the storage capacity and quality of post-harvest facilities, as well as establishing local processing facilities for agricultural produce to optimise agricultural production in the watershed. These interventions will be supported by the provision of climate-resilient agricultural inputs (e.g. climate-resilient seed varieties) to vulnerable households that depend on subsistence agriculture for their livelihoods. This will be supplemented by delivering technical skills training on climate-resilient agricultural techniques and SLM to farmers. Specifically, this will involve: i) enhancing their ability to effectively manage and organise irrigation and other associations; ii) facilitating participatory access to agricultural inputs, farming equipment, maintenance facilities; and iii) upskilling of maintenance staff.</p> <p>Strengthening these key elements of the agricultural value chain in Haiti's TR watershed will not only enhance the climate resilience of agricultural production in the country, but also contribute to increased food security in the watershed by improving market access for farmers and those people who depend on agriculture for their livelihoods. This increased market access will be supported by the establishment of an agricultural finance mechanism under the Agricultural</p>	<p>2.2.3. Enhance access to finance for smallholder farmers through the VSCA.</p>	
--	--	---	--

	<p>Village Savings and Credit Associations (VSCA). Financing will be made available to smallholder farmers under this mechanism to facilitate their adoption and implementation of sustainable, climate-resilient agricultural practices. These farmers will be able to access financing from this mechanism during and immediately after the impacts of a climate change-related event, such as flooding. This will promote the adoption of more sustainable land-use practices that are resilient to climate change.</p>		
<p>Activity 2.3. Implement a social protection system to support vulnerable households at risk to food insecurity because of climate change</p>	<p>While Activity 3.1.2 provides a long-term solution to addressing these negative impacts, this activity will provide the required immediate relief to vulnerable people affected by these events, concomitantly reducing further pressure on the environment by providing an alternative option to resorting to unsustainable charcoal production. Specifically, Activity 2.1.3 will facilitate the development of a social safety net whereby food coupons will be provided to vulnerable households affected by food insecurity. To determine eligible households for these coupons, vulnerable households will be identified through a site survey and/or assessment, with their details captured in a database for future reference. Recipients of these coupons will be able to redeem the coupons for local produce at selected primary and secondary markets. These coupons will also serve as a form of currency (or e- coupon), which will provide recipients with purchasing power to exchange the coupons for specific goods. A total of 934 farmers will be selected to participate in the operation of the food</p>	<p>2.3.1. Conduct a site survey/assessment to determine eligible households to receive food coupons to be developed under Sub-activity 2.3.2</p> <p>2.3.2. Establish and operationalise a food coupons mechanism in the TR watershed.</p> <p>2.3.3. Engage and train 934 farmers on the implementation of the food coupons mechanism established under Sub-activity 2.3.2.</p> <p>2.3.4. Create 150 new VSCAs in the TR watershed to enhance the food security of vulnerable households.</p> <p>2.3.5. Establish a network of village agents to monitor existing VSCAs and establish new ones, as well as to monitor market performance contributing to food coupons mechanisms.</p>	<ul style="list-style-type: none"> Operational food coupons mechanism in the TR watershed. Site survey/assessment Training for 934 farmers on the implementation of the food coupons mechanism 150 new VSCAs created in the TR watershed A network of village agents established for the monitoring and establishment of VSCAs

	<p>coupons mechanism. Participating farmers will receive training on <i>inter alia</i> hygiene, modalities of exchange and personal security.</p> <p>To support the efficient and effective implementation of the food coupons mechanism, existing VSCAs will receive operational improvements under this activity, supplemented by the creation of 150 new VSCAs in the TR watershed. The VSCAs will provide additional financial support to the coupons mechanism, which will secure its effectiveness as a food relief mechanism. To ensure that this system remains operational throughout the lifetime of the project, a network of village agents will be established, with their primary responsibilities being the monitoring of existing VSCAs and creation of new ones.</p>		
Activity 3.1. Strengthen national capacities for the implementation of the Water Act	<p>Under Activity 3.1, provisions will be drafted to the Water Act to ensure that it promotes an integrated approach to water resources management, including considerations for the coordinated development of water, land and related resources. This will contribute towards: i) maximising economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems under future climate change conditions; and ii) facilitating efficient, integrated adaptation responses to the impacts of climate change in Haiti. Provisions to the Water Act will also recommend the establishment of Catchment IWRM Committees (<i>Committees de GIRE des Bassins Versants, CGBVs</i>) within each of the 31 catchments in the country, and the establishment of Sub-</p>	<p>3.1.1. Draft provisions to Haiti's Water Act for the adoption of an integrated approach to water resources management and implement the act in the TR watershed.</p> <p>3.1.2. Establish Catchment IWRM Committees (<i>Committees de GIRE des Bassins Versants, CGBVs</i>) within each of the 31 catchments in Haiti, as per the provisions drafted in Sub-activity 3.1.1.</p> <p>3.1.3. Establish Sub-Catchment Water Resource Users Associations (<i>Associations d'Usagers des Ressources en Eau du Sous-bassin versant; AssURES</i>) within the sub-catchments of the 31 catchments in</p>	<ul style="list-style-type: none"> • Provisions drafted to the Water Act • 31 Catchment IWRM Committees established

	Catchment Water Resource Users Associations (Associations d'Usagers des Ressources en Eau du Sous-bassin versant, or AssURES).	Haiti, as per the provisions drafted in Sub-activity 3.1.1	
Activity 3.2. Develop an integrated, climate-resilient water management governance framework targeting the catchment and sub-catchment levels in the Trois-Rivières watershed	<p>Under this activity, an inclusive and equitable water management governance framework will be developed for the TR catchment, namely the Catchment Integrated Water Resources Management Committee (CIWRMC). This committee will work with representatives from productive sectors (e.g. agriculture), land users at sub-catchment level and Sub-Catchment Water Resources User Associations (SCWRUAs) to achieve two main goals. First, these groups will work together to develop climate-resilient IWRM plans for end users at the sub-catchment and catchment levels that promote sustainable water resources management and an equitable distribution of the available resources among all users. The IWRM plans will define roles and responsibilities of institutions and civil society stakeholders for water resources management (complementary to the decentralised management of water resources to be established in the Water Act under Activity 3.1). It will also promote a landscape management approach that will be linked to the implementation of community land-use plans (Activity 1.1), considering gender dynamics. Second, the CIWRMC, together with the relevant land users and SCWRUAs, will ensure that the management of water resources in the catchment considers climate change impacts, particularly the expected impacts at landscape level as well as on upstream and downstream flow dynamics. Training</p>	<p>3.2.1. Establish the Catchment Integrated Water Resources Management Committee (CIWRMC) to manage water resources in the TR watershed.</p> <p>3.2.2. Develop climate-resilient IWRM plans for end users at the sub-catchment and catchment levels in a participatory, gender-responsive way with representatives from CIWRMC and productive sectors (e.g. agriculture), land users and Sub-Catchment Water Resources User Associations (SCWRUAs).</p> <p>3.2.3. Promote a climate-resilient, integrated landscape management approach in the TR watershed that considers gender dynamics, using the community land-use plans (Activity 1.1).</p> <p>3.2.4. Train the CIWRMC (established under Sub-activity 3.2.1) and representatives from productive sectors (e.g. agriculture), land users and Sub-Catchment Water Resources User Associations (SCWRUAs) on the application of climate-resilient IWRM plans in decision making.</p>	<ul style="list-style-type: none"> • Catchment Integrated Water Resources Management Committee (CIWRMC) established • Climate-resilient IWRM plans • Promotion of climate-resilient, integrated landscape management approach in the TR watershed • Trainings delivered to the CIWRMC (established under Sub-activity 3.2.1) and representatives from productive sectors (e.g. agriculture), land users and Sub-Catchment Water Resources User Associations (SCWRUAs)

	<p>on the climate-resilient IWRM plans will also be delivered focusing on the application of these plans in decision-making. The combined result of these actions will be the establishment and operation of an integrated governance framework that will contribute to preserving climate-resilient, sustainable land and water resources management beyond the lifetime of the project. During the implementation of Activity 3.2, considered efforts will be made to securing equitable representation, participation and leadership of women.</p>		
<p>Activity 3.3. Implement regular monitoring and evaluation of water resources at the catchment and sub-catchment levels to support the implementation of integrated water resources management (IWRM) plans</p>	<p>From project inception (Year 1), continuous health monitoring and impact evaluations will be undertaken and will continue throughout the implementation phase. By monitoring the evolution, frequency and location of flood-related illnesses from the start of the project, the impact of the project will be assessed once a sufficient time series of observations is completed. UNDP will commission an expert to undertake the health monitoring and impact evaluations of the EbA flood management solutions. The World Health Organisation (WHO) will provide technical support to this expert, as they are currently monitoring cases of water- and vector-borne diseases in Haiti and therefore have a pre-defined methodology that would allow comparison studies to be undertaken across watersheds. The contracted expert will undertake a baseline assessment of the prevalence of water- and vector-borne diseases within the TR watershed and analyse the impact of climate change-induced flooding on the spread of these</p>	<p>3.3.1. Commission an expert to undertake the health monitoring and impact evaluations of the EbA flood management solutions (Activity 1.2), supported by WHO.</p> <p>3.3.2. Undertake a baseline assessment of the prevalence of water- and vector-borne diseases — as well as monitor dry season baseflow — within the TR watershed, assisted by local representatives from SCWRUAs.</p> <p>3.3.3. Assess the effectiveness of EbA interventions (Activity 1.2) in reducing the spread of water- and vector-borne diseases.</p> <p>3.3.4. Generate lessons through the implementation of all project interventions and disseminate these lessons through the committees and councils established under Output 2</p>	<ul style="list-style-type: none"> • Expert contracted to undertake the health monitoring and impact evaluations of the EbA flood management solutions • Baseline assessment of the prevalence of water- and vector-borne diseases within the TR watershed • Assessment of the effectiveness of EbA interventions (Activity 1.2) in reducing the spread of water- and vector-borne diseases. • Workshops for the generation and dissemination of lessons learned

	<p>diseases. Following this assessment, the expert will report on her/his findings and provide the required health impact data to assess the health benefits of the EbA interventions implemented under the project. Simultaneously, this expert, assisted by representatives from SCWRUAs, will monitor dry season baseflow at four locations along the main stem of the Trois-Rivières (TR) river. This will be done to provide a stable indicator of the increased infiltration capacity of the soil because of forest rehabilitation and restoration activities to be implemented under Activity 1.2 of the project. The monitoring will facilitate an evidence-based assessment of these EbA solutions as effective measures for reducing the impacts of climate change-induced flooding in the TR watershed and for improving the health of the watershed's population. Finally, lessons generated through the implementation of all project interventions will be shared through the relevant committees and associations at the catchment and sub-catchment levels to inform adaptative management of these interventions under future climate change conditions.</p>		
<p>E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)</p>			
<p>200. Project-level monitoring and evaluation will be undertaken in compliance with the UNDP POPP and the UNDP Evaluation Policy. The Project Manager and Monitoring and Gender Officer, under the oversight of UNDP as the AE, will be responsible for monitoring the progress of all project activities against the outcome-based indicators presented in the Logical Framework (Section E of this Funding Proposal). Any delays or challenges experienced during the implementation phase will be communicated timeously to the Project Board and the UNDP Country Office by the Project Manager, so that any appropriate support and corrective measures required can be actioned efficiently. The Project Manager will also ensure that all project staff maintain transparency, responsibility and accountability in monitoring and reporting on project results.</p> <p>201. Monitoring and evaluation of project activities will be undertaken on an annual basis. The type of monitoring activities to be conducted during the implementation phase, as well as the responsible parties for undertaking these activities, are detailed in Annex 11: Monitoring and Evaluation (M&E) Plan. Such</p>			

activities include field observations, key informant interviews and focus group sessions. The costs associated with undertaking the necessary monitoring, assessments and engagements required to inform the project evaluations are presented in Annex 4: Detailed budget.

202. A project inception workshop will be held once the proposed project has been approved to: i) re-orient project stakeholders to the project strategy and discuss any changes in the overall context that may 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 project Logical Framework; iv) discuss reporting, monitoring and evaluation roles and responsibilities and finalise the M&E plan (Annex 11); v) review the financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and vi) plan and schedule Project Board meetings and finalise the first year annual work plan for the project. The final inception report will be shared with the UNDP Country Office, UNDP Regional Technical Advisor and Project Board for clearance. Once the report has been cleared by the relevant parties, it will be submitted to the GCF for approval. This will happen within six months after the Funded Activity Agreement (FAA) becomes effective.
203. An annual progress report (APR) will be prepared by the Project Manager, UNDP Country Office, and UNDP Regional Technical Advisor for submission to the GCF, Project Board and relevant project stakeholders. The Project Manager, supported by the Monitoring and Gender Officer, will ensure that the indicators included in the project Logical Framework are monitored annually and that the results from regular M&E activities are presented in the GCF APR. Any challenges and delays experienced during the implementation phase will be monitored by the Project Manager and reported in the GCF APR.
204. During the implementation phase, specific means of verification will be used to assess the: i) progress of project interventions towards achieving GCF Fund-level impacts and Fund-level outcomes; and ii) performance of interventions against the project performance indicators presented in Section E.5 of this Funding Proposal. A full-time Monitoring and Gender Officer will be employed to conduct and coordinate on-the-ground monitoring and evaluation (M&E) of the project and ensure that gender targets are met. The Monitoring and Gender Officer will design and operationalise a performance monitoring framework to track the project's progress towards achieving its targets. This will be achieved by: i) measuring the performance against the project indicators (Sections E.3–5) to evaluate the progress of the project; ii) reporting the project's performance to the National Steering Committee (NSC) and Project Management Unit (PMU); and iii) providing technical support to the Project Manager. Additionally, the Monitoring and Gender Officer will be responsible for overseeing and monitoring the application of gender-disaggregated indicators¹⁴⁰. At particular milestones (e.g. baseline, mid-term and project closure), the Monitoring and Gender Officer will undertake evidence-gathering exercises to verify the project's performance against the outcomes-based indicators presented in the Logical Framework, M&E Plan and Gender Action Plan. The results from this process will be presented in periodic reports developed by the Monitoring and Gender Officer, supported by the Project Manager. These reports will be submitted to the NSC and validated during the Independent Interim and Final Evaluations for the project, as described below.
205. UNDP will be responsible for managing the Independent Interim (mid-term) and Final Evaluations of the project, including the process for contracting these positions. For the Interim Evaluation, an independent consultant will be contracted to provide an assessment of project performance against its targets at the project's mid-term (end of Year 3). This will be an outcomes-based assessment and will include analysing whether the project is on track, what problems and challenges the project is encountering, and what corrective actions are required, so that the project can achieve its intended outcomes by project completion in the most efficient and sustainable way. Following this evaluation, the NSC will develop a management response to the evaluation recommendations along with an implementation plan for undertaking the required actions. It is the responsibility of UNDP to assess whether the agreed recommendations are being

¹⁴⁰ The project's gender targets as well as the associated gender-disaggregated indicators are presented in Annex 8: Gender Assessment and Action Plan.

implemented during the remainder of the project period. The completed Interim Evaluation report will be cleared by the UNDP Country Office as well as the UNDP Regional Technical Advisor and submitted to the Project Board for approval.

206. An independent consultant will be contracted by UNDP to conduct the Final Evaluation Report at the end of project implementation. UNDP will be responsible for overseeing the Final Evaluation Report, which is a summative evaluation. This evaluation will include an independent assessment of the project's overall performance against standard evaluation criteria (e.g. strategic relevance, effectiveness, efficiency, likelihood of impact and sustainability), as well as against the project indicators presented in the Logical Framework. This evaluation will be based on inter alia documentaries of evidence, field observation visits and key informant interviews. Following completion of the evaluation, the Final Evaluation report will be developed and shared with the UNDP Country Office as well as the UNDP Regional Technical Advisor for clearance. Once the report has been cleared, it will be submitted to the Project Board for approval.

207. The UNDP Country Office will include the planned project evaluations in the UNDP Country Office evaluation plan. All evaluation reports, including responses to feedback received from the public, will be uploaded in English to the UNDP Evaluation Resource Centre (ERC)¹⁴¹. The UNDP Country Office will retain all M&E records for this project for up to eight years after project financial closure to support ex-post evaluations.

¹⁴¹ available at: www.erc.undp.org.

RISK ASSESSMENT AND MANAGEMENT

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

Please describe financial, technical, operational, macroeconomic/political, money laundering/terrorist financing (ML/TF), sanctions, prohibited practices, and other risks that might prevent the project/programme objectives from being achieved. Also describe the proposed risk mitigation measures. Insert additional rows if necessary.

For probability: High has significant probability, Medium has moderate probability, Low has negligible probability

For impact: High has significant impact, Medium has moderate impact, Low has negligible impact

Prohibited practices include abuse, conflict of interest, corruption, retaliation against whistleblowers or witnesses, as well as fraudulent, coercive, collusive, and obstructive practices

Selected Risk Factor 1

Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>High</u>

Description

Low survival rates of crops and trees planted during the project makes stabilisation of slopes ineffective, hampering improvement in soil conservation measures.

Mitigation Measure(s)

Risk mitigation measures will include:

- Specifically selecting and using robust (ideally indigenous) species that are well adapted to local conditions, with high levels of fire resistance and good re-sprouting capacity;
- Providing technical assistance to households implementing agroforestry;
- Involving the community in planning at the inception stage to foster ownership and promote long-term monitoring and protection of planted sites;
- Practicing participatory planning for reforestation activities; and
- mobilising civil society to raise awareness of the importance of monitoring and protection of ground cover for ecosystem service provision.

Selected Risk Factor 2

Category	Probability	Impact
<u>Other</u>	<u>Medium</u>	<u>High</u>

Description

Weak land-tenure, -use and -management systems prevent or delay implementation if agreements with landowners or communities cannot be reached.

Mitigation Measure(s)

Ownership of project interventions will be supported by the development of Community Land Use Plans (under Activity 1.1), including assessing land-tenure and prioritising areas for interventions based on community recommendations and agreements.

Since modifying the legislative framework for non-climate related aspects of land management is not within the scope of the project, other risk mitigation measures include:

- ensuring the involvement and participation of target communities in the TR watershed at the inception and planning stage to establish trust and support in the validation of land ownership;
- using the consultation process during the assessment phase as a platform to address concerns and increase buy-in of communities;
- encouraging community involvement in IWRM at the sub-catchment level, helping to work towards more sustainable agricultural and sub-catchment management practices; and
- capitalising upon top-down (e.g. establishment of the Water Act) and bottom-up (e.g. establishment and capacitating of sub-catchment Water Resource Users' Associations (WRUA)) approaches to land and water resources management to ensure that local needs and experiences are considered during project implementation.

Selected Risk Factor 3		
Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>High</u>
Description		
Limited uptake of project interventions by target communities because of a preference towards fulfilling the immediate need for sustenance through conventional agricultural techniques over long-term climate action.		
Mitigation Measure(s)		
<p>Risk mitigation measures will include:</p> <ul style="list-style-type: none"> • building community interest by engaging Haitian civil society organisations (CSOs) and working with community governance systems and associations to raise awareness of the challenges and impacts of climate change on environmental degradation and food security; • training and knowledge sharing initiatives to facilitate capacity building and ownership; and • emphasising the introduction of more sustainable farming systems (i.e. agroforestry), sustainable (sub-) catchment management and IWRM, as well as food security and nutrition interventions, which are designed to be inclusive. • Working with community members in monitoring the project's indicators to establish a link between project action and benefits. 		
Selected Risk Factor 4		
Category	Probability	Impact
<u>Governance</u>	<u>Low</u>	<u>Medium</u>
Description		
Inadequate national focus on adaptation measures because of other development pressures affecting the sustainability of the proposed project beyond GCF involvement.		
Mitigation Measure(s)		
<p>Risk mitigation will consider:</p> <ul style="list-style-type: none"> • building resilience into watershed management is increasingly becoming a national priority and is expected to develop into a sustained focus on adaptation in Haiti; and • a participatory and inclusive processes to help institutionalise climate change adaptation and ensure the sustainability of the integrated management approach. • Embedding the project within national policy efforts including water management and the National Adaptation Plan process 		
Selected Risk Factor 5		
Category	Probability	Impact
<u>Other</u>	<u>Medium</u>	<u>High</u>
Description		
Continued overexploitation and unregulated land-use and -tenure renders soil conservation measures redundant, causing increasing degradation and permanent losses in soil fertility.		
Mitigation Measure(s)		
<ul style="list-style-type: none"> • Through an integrated flood management planning approach, the project is intended to address environmental degradation partially and indirectly by framing regulations pertaining to land-use in areas directly impacted by climate change. • Additionally, improved institutional capacity will also contribute to reducing degradative practices through better planning, policy decision-making and natural resource-management capacities. • The risk will further be mitigated by shifting practices and garnering buy-in of the local community through consultations to promote active involvement in sub-catchment IWRM, participation in crop/tree planting activities and building awareness of climate change impacts by mobilising the CSOs. 		
Selected Risk Factor 6		

Category	Probability	Impact
<u>Governance</u>	<u>Low</u>	<u>Low</u>
Description		
Weak coordination between stakeholders, climate initiatives and implementation partners reduce the effectiveness of IWRM approaches in Haiti.		
Mitigation Measure(s)		
<p>The risk will be mitigated by promoting coordination through the strategic identification of established multi-stakeholder groups, including the WRUAs at sub-catchment level and the CIWRMC at catchment level. Coordination between these groups will be strengthened through workshops and knowledge-sharing initiatives aimed at: i) building awareness of activities being undertaken; ii) developing best practices to draw from; iii) synchronising efforts; and iv) replicating successes from each project.</p> <p>Risk will further be reduced by involving multiple actors in supporting catchment IWRM, including NGOs, private development organisations and community-based organisations. The participation of these entities will complement the relevant stakeholders within MoE and other relevant sector ministries, contributing towards coordination and integration of interests, needs and perspectives.</p> <p>The project will report regularly to the Technical Secretariat of the National Committee on Climate Change to ensure alignment with the GoH own Climate Strategies including the country's National Adaptation Plan. The project will also shares result with development partners and agencies through the the various donor groups for the environmental sector and for disaster risk reduction.</p>		
Selected Risk Factor 7		
Category	Probability	Impact
<u>Other</u>	<u>Medium</u>	<u>High</u>
Description		
Extreme weather event and/or natural disaster during project implementation and/or operations inhibits or delays progress.		
Mitigation Measure(s)		
<p>Mitigation measures include:</p> <ul style="list-style-type: none"> land-use plans taking these risks into account; accelerating project execution during non-peak wet weather periods; and choosing tree varieties and timing of planting to favour fast-growing species during the first planting cycle to shield crops and newly planted seedlings from extreme weather events. 		
Selected Risk Factor 8		
Category	Probability	Impact
<u>Governance</u>	<u>Medium</u>	<u>High</u>
Description		
Socio-political instability undermines envisaged project outputs because of disruptions and changes in national priorities and government operations.		
Mitigation Measure(s)		
<p>This risk will be mitigated by ensuring a continuity of process through:</p> <ul style="list-style-type: none"> Ensuring outreach to new officials/political administration at both local and national levels based on technical results to allow for an easy transition. mainstreaming integrated flood governance into the institutional framework at multiple levels and amongst diverse jurisdictions and mandates; defining roles and responsibilities and developing clear standard operating procedures (SOPs) for implementing stakeholders, this includes working through NGOs, and Responsible Parties such as Heifer with local presence and with clear knowledge on how to address instability at a territorial level when working with communities; 		

- undertaking capacity building initiatives at various levels looking to empower local government and mid level technical officials that are less vulnerable to political disruptions. These actions allow technical work to continue despite social and political upheavals;
- focusing on ensuring buy-in and participation of vulnerable communities by mobilising local CSOs to raise awareness on climate change, climate impacts and adaptation strategies and creating local trainers. Working at community level as well as mobilizing community associations has proven effective to ensure transformative action on the ground despite economic and social disruptions.
- Enhancing community and local governance structures around common objectives that result in clear value adds and hence improve buy in from local actors for the development of project outputs.
- Enabling local structures to enhance local capacities and resilience.
- Ensuring outreach to new officials/political administration at both local and national levels based on technical results to allow for an easy transition.

Selected Risk Factor 9

Category	Probability	Impact
Other	Medium	Medium

Description

Insecurity within the country may seep into project sites particularly in Bassin Bleu and Gros Morne and cause delays in the implementation of project activities.

Mitigation Measure(s)

An initial conflict analysis has been prepared by the project and included within the project's ESMF. The analysis and the project's ESFM provided guidelines for the development of Security Plans and Conflict Assessments that will be developed as part of the activity level EISAs/ESMFs during the project's first year and will result in activity specific management plans per grouped areas. To reduce the potential of project beneficiaries or staff being targeted by illegal actors, the project has avoided the provision of direct cash benefits focusing more on community based benefits (capacity building, agroforestry inputs, enhanced associative capacity, etc.). In terms of mobility, UNDSS rules will be used and strictly adhered to by the project particularly during internal travel and security issues will be continuously monitored to allow for adaptive management in case it is required. Procurement strategies will favor local purchases to avoid any potential danger in the transport of project equipment and its delivery to project sites. In addition, a logistics and operations officer has been foreseen by the project to ensure that logistics take into account insecurity risks when planning the delivery of project activities and on the ground missions. The project's community based approach will allow for the project to ensure strong community buy in and enhance social capital, this approach will help develop community informed practices in the implementation of project activities to avoid potential security risks while creating an opportunity to maximise the peacebuilding potential of the project.

GCF POLICIES AND STANDARDS

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

208. This project has completed the UNDP social and environmental screening procedure undertaken to ensure it complies with UNDP's Social and Environmental Standards. The social and environmental risk category for this project is: Moderate (Category B). A detailed risk assessment undertaken for the project Social and Environmental Risk Procedure (SESP), as well as the Environmental and Social Management Framework (ESMF), are presented in Annex 6.
209. UNDP will be responsible for the ESMF, ensuring it is adequate and followed. The PMU will be responsible for the revision or updates of the ESMF document during project implementation and will ensure timely corrective actions are taken, as identified. Any non-conformances to the ESMF are to be noted in environmental inspections and logged into the register. Depending on the severity of the non-conformance, the Site Supervisor may specify a corrective action on the site inspection report. The ESMF and its procedures are to be reviewed at least every year by UNDP staff and the MoE. The objective of the review is to update the document to reflect knowledge gained during project delivery/construction and to reflect new knowledge and changed community standards (values).
210. The progress of all corrective actions will be tracked using the register. Any non-conformances and the issue of corrective actions are to be advised to UNDP. UNDP and the MoE will also release updates on the project on a regular basis to provide interested stakeholders with information on project status. Updates may be via a range of media, for example print, radio, social media or formal reports, and all material must be published in English and Haitian Creole (Kreyòl) as appropriate. A publicised telephone number will be maintained throughout the project to serve as a point of contact for enquiries, concerns, complaints and/or grievances. All enquiries, concerns, complaints and/or grievances will be recorded on a register and the appropriate manager will be informed.
211. The project has the potential to cause low to moderate environmental and social impacts. The Project's design has avoided all high-risk environmental and social impacts and favoured a wholly climate resilient infrastructure approach to flood management, eschewing high-risk grey infrastructure for flood control. Furthermore, the project does not require any land acquisition and/or resettlement, does not promote the use of pesticides and fertilisers, prohibits the use of alien invasive species in planting, and promotes diverse agroforestry systems and reforestation that will not only build climate resilience and food security, and decrease the impact of floods, but also provide significant environmental and social co-benefits.
212. When undertaking the risk assessment, all activities were assessed, with an emphasis on those with the potential for some adverse risk, specifically Output 1, Activity 1.2 which involves the project's physical interventions (agroforestry and reforestation) financed by GCF. Potential risks identified include: i) the possibility that activities reproduce discriminations against women based on gender, due to existing structural inequalities and roles in agriculture and decision-making; ii) the possibility that activities lead to the unintentional increased use of pesticides and fertilisers in agroforestry systems because of improved income; and iii) a low risk that there is a possibility of child labour use in the promoted agroforestry systems. Specific measures for each environmental and social risk are discussed along with mitigation measures in the ESMF.
213. The preparation of the ESMF included public consultation as part of the Stakeholder Engagement Plan. The full Stakeholder Engagement Plan is appended as part of the proposal in Annex 7: Stakeholder Engagement Plan, which includes the full list of stakeholders consulted, and a summary of the consultations. The project was discussed with a wide range of stakeholders including relevant government departments, industry groups, NGOs, and individual community members (including marginalised groups) and was approved by the Government of Haiti. These extensive on-the-ground consultations undertaken during the design of the project (as well as during the earlier interventions that this project complements and up-scales) closely informed overall project design and the ESMF, and it is expected that consultations with affected communities and beneficiaries will continue. It is anticipated that based on the communities' needs, the projects will be fully accepted.

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

214. A Gender Assessment and Action Plan (GAAP) was developed for this project in order to provide an overview of the issue of gender in Haiti, with a specific focus on the gender differentiated impacts of climate change and how this information can be used to design a gender-sensitive adaptation intervention. The GAAP identifies gender issues relevant to the project interventions and situated in the Haitian context, across elements such as use and access to resources, gender-differentiated roles in employment and livelihoods, and roles in political decision

making. The Gender Action Plan specifically describes opportunities for gender mainstreaming in the project design so that the proposed project interventions address gendered climate resilience across the household, community and institutional levels.

215. Haiti ranks third globally on the Long-Term Climate Risk Index¹⁴², demonstrating its extreme vulnerability to climate change — to which women are especially vulnerable. Widespread deforestation and soil degradation have so severely impacted the island's environment that it can no longer provide critical ecosystem functions, such as mitigating the effects of heavy rain and flooding. This has progressively increased human vulnerability to climate change. Extreme climate events, such as tropical storms and hurricanes, are expected to increase in frequency and intensity, while rainfall is expected to become more erratic across seasons¹⁴³. In an already denuded and degraded landscape, this increased rainfall engenders severe erosion and landslides, flash flooding, and sedimentation of river channels¹⁴⁴.
216. Climate change impacts are not gender-neutral and many of the consequences of climate-induced impacts are more severe for women, and other socio-economically marginalised groups, given their specific livelihood circumstances. In relative terms, women lack access to productive resources, and this has impacts on their health, food security and safety in the context of flooding and other extreme climate events. The additional socio-cultural barriers limiting participation and movement outside the household sphere is worsened by phenomena such as flooding, drought and erratic rainfall. These constraints cause women to have to work much harder to secure food and water, and generate additional income through livelihoods which, in turn, diminishes their ability to advance out of poverty, particularly when they have, for example, lost their land due to the impacts of flooding during cyclone events.
217. Gender equality and women's empowerment are not addressed in most of Haiti's strategy or action plan documents for climate change and disaster risk management^{145, 146}. Flooding has cumulative livelihood effects that unfairly impact women and exacerbate gender inequality. In Haiti, women are disproportionately represented among the poor and there is a significant portion of women-headed households, so impacts such as crop loss, animal drowning, destroyed homes, health risks or displacement and loss of life resulting from floods ultimately affect women to a higher extent. Yet, during these extreme flooding events, the importance of grassroots organisation and mobilisation of women's groups during disaster relief efforts has been unparalleled and critical, demonstrating the resilience of Haitian women in the face of extreme adversity.
218. Over 40% of households in Haiti are headed by women, and this percentage has been on the rise since 2007^{147, 148}. Today, there are more women living under extreme poverty than men, with a large proportion residing in rural areas¹⁴⁹. Most of Haiti's population is rural, and two-thirds of this population is dependent on agriculture; with women comprising a significant portion of the labour force involved across all aspects of agricultural processes¹⁵⁰.
219. To address gender dimensions within the project design and implementation, the Gender Action Plan will account for:
- specific strategies to include/target female-headed households;
 - differing conservation incentives faced by women;
 - identification of gaps in gender equality through the use of sex-disaggregated data enabling the gender action plan to close those gaps, devoting resources and expertise for implementing such strategies, monitoring the results of implementation, and holding individuals and institutions accountable for outputs that promote gender equality;
 - advocacy and awareness that is adjusted to most effectively reflect gender-specific differences; and
 - the inclusion of a Gender Specialist position/provision of advice within the project to implement gender-related activities.

¹⁴² German Watch, Global Climate Risk Index 2020. https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf.

¹⁴³ Ibid.

¹⁴⁴ IUNC 2011 gender action plan.

¹⁴⁵ USAID (2016).

¹⁴⁶ Shadow Report (2011).

¹⁴⁷ IHSI, enquête, emploi, économie informelle, 2010.

¹⁴⁸ MCFDF 2015. Statistiques de Genre: Comprendre pour mieux agir.

¹⁴⁹ MCFDF 2015. Statistiques de Genre: Comprendre pour mieux agir.

¹⁵⁰ USAID (2016).

220. Gender benefits through this project have been optimised by promoting the full involvement of women in decision-making regarding integrated flood management at the community and institutional levels, as well as promoting women as the stewards of agroforestry systems, playing key roles in the selection of species and transformation of products. In addition, as during the design of the project, strong efforts will continue to be made during implementation to ensure the equitable participation of women. Additionally, going forward beyond the implementation phase, equal participation of women will be pursued and achieved in ongoing management and water governance especially on the Water Governance Committees.
221. During project implementation, qualitative assessments will be conducted on the gender-specific benefits that can be directly attributed to the project. This will be incorporated in the annual Project Implementation Report, Mid-Term Report, and Terminal Evaluation. Indicators to quantify the achievement of project objectives in relation to gender equality will include men and women who had access to affordable solutions, number of men and women employed from the jobs created by the project, training opportunities, knowledge management and information dissemination.
222. The stakeholder consultations and engagement of women's organisations promote gender equality at the local as well as the national level. The involvement of women's organisations in the project design aided in identifying relevant gender issues within the country's social context, as well as in implementing and monitoring the gender aspects of the project.

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

223. The financial management and procurement of this project will be guided by UNDP financial rules and regulations available [here](#)¹⁵¹. Further guidance is outlined in the financial resources management section of the UNDP Program and Operations Policies and Procedures (POPP) available [here](#). UNDP has comprehensive procurement policies in place as outlined in the 'Contracts and Procurement' section of UNDP's POPP. See [here](#).
224. The project will be implemented following the full-support National Implementation Modality (NIM) following the UNDP's POPP guidelines available [here](#)¹⁵². UNDP will ascertain the national capacities of the implementing partner by undertaking an evaluation of capacity following the Framework for Cash Transfers to Implementing Partners (part of the Harmonized Approach to Cash Transfers - Harmonized Approach to Cash Transfer ([HACT](#))). All projects will be audited following the UNDP financial rules and regulations noted above and applicable audit guidelines and policies.
225. The Full Support to NIM guidelines are a formal part of UNDP's policies and procedures, as set out in the UNDP POPP. The NIM guidelines were corporately developed and adopted by UNDP and are fully compliant with UNDP's procurement and financial management rules and regulations.
226. The national executing entity MoE (also referred to as the national 'Implementing Partner' in UNDP terminology), is required to implement the project in compliance with UNDP rules and regulations, policies, and procedures (including the NIM guidelines). In legal terms, this is ensured through the national Government's signature of the UNDP Standard Basic Assistance Agreement (SBAA), together with a UNDP project document which will be signed by the Implementing Partner to govern the use of the funds. Both of these documents require compliance. During implementation, UNDP will provide oversight and quality assurance in accordance with its policies and procedures, and any specific requirements in the Accreditation Master Agreement (AMA) and project confirmation to be agreed with the GCF. This may include, but is not limited to, monitoring missions, spot checks, facilitation and participation in project board meetings, quarterly progress and annual implementation reviews, and audits at project level or at implementing partner level on the resources received from UNDP.

¹⁵¹ In line with UNDP National Implementation (NIM) Guidelines, the Government is responsible for the management and procurement of the Project to achieve project outputs. Government regulations, rules and procedures apply to project implementation to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. UNDP Financial Regulations section 16.05 state:

- "The administration by executing entities or, under the harmonized operational modalities, implementing partners, of resources obtained from or through UNDP shall be carried out under their respective financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP.

- Where the financial governance of an executing entity or, under the harmonized operational modalities, implementing partner, does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition that of UNDP shall apply."

The project will be audited in accordance with UNDP policies and procedures on audits, informed by and together with any specific requirements agreed in the AMA. According to the current audit policies, UNDP will be appointing the auditors. In UNDP, scheduled audits are performed during the project cycle as per UNDP assurance/audit plans, based on the implementing partner's risk rating and UNDP's guidelines. A scheduled audit is used to determine whether the funds transferred to the implementing partner were used for the appropriate purpose and in accordance with the work plan. A scheduled audit can consist of a financial audit and/or an internal control audit.

G.4. Disclosure of funding proposal

Note: The Information Disclosure Policy (IDP) provides that the GCF will apply a presumption in favour of disclosure for all information and documents relating to the GCF and its funding activities. Under the IDP, 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. Information provided in confidence is one of the exceptions, but this exception should not be applied broadly to an entire document if the document contains specific, segregable portions that can be disclosed without prejudice or harm.

Indicate below whether or not the funding proposal includes confidential information.

☒ **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) ([template provided](#))
- ☒ 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 ([template provided](#))
- ☒ Annex 5 Implementation timetable including key project/programme milestones ([template provided](#))
- ☒ Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
[\(ESS disclosure form provided\)](#)
 - ☐ 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 ([template provided](#))
- ☒ Annex 9 Legal due diligence (regulation, taxation and insurance)
- ☒ Annex 10 Procurement plan ([template provided](#))
- ☒ Annex 11 Monitoring and evaluation plan ([template provided](#))
- ☒ Annex 12 AE fee request ([template provided](#))
- ☒ Annex 13 Co-financing commitment letter, if applicable ([template provided](#))
- ☒ 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 ([template provided](#))
- ☒ Annex 16 Map(s) indicating the location of proposed interventions
- ☐ Annex 17 Multi-country project/programme information ([template provided](#))
- ☐ 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 22 Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)¹⁵³
 - ☐ Eligibility Criteria
 - ☐ Beneficiary Calculation Worksheet
 - ☐ Results Framework sheet

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

¹⁵³ Annex 22 is mandatory for mitigation and cross-cutting projects.