



United Nations Development Programme

Project Document template for projects financed by the various GEF Trust Funds

Project title: Strengthening the climatic resilience of the drinking water sector in the South of Haiti		
Country(ies): Haiti	Implementing Partner (GEF Executing Entity): Helvetas	Execution Modality: Non-Governmental Organization
Contributing Outcome (UNDAF/CPD, RPD, GPD): Outcome: 3: Strengthened institutions to gradually ensure universal access to basic services; Outcome: 5: Reducing the risks of conflict and natural disasters, notably those linked to climate change.		
UNDP Social and Environmental Screening Category: <i>Moderate</i>		UNDP Gender Marker: GEN 2
Atlas Award ID: 00128390		Atlas Project/Output ID: 00122407
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Project duration in months: 60 months		
Planned start date: November, 2022		Planned end date: October, 2027
Expected date of Mid-Term Review: November, 2024		Expected date of Terminal evaluation: July, 2027
Brief project description: Brief project description: The Republic of Haiti is extremely vulnerable to climate change, particularly to the impacts of floods and droughts. For instance, between 1993 and 2012, Haiti experienced two droughts and 31 flood events. Reductions in freshwater availability in the country have been attributed to observed increases in the duration and intensity of drought periods, resulting in reduced water yield in springs, wells, and rivers. Reductions in groundwater resources are further compounded by an increase in the intensity of rainfall events, which, when coupled with extensive ecosystem degradation in critical recharge zones, reduce rainwater infiltration and		

subsequent aquifer recharge.

The proposed project will strengthen the resilience of vulnerable rural and peri-urban communities in the South-East (Sud-Est) Department of Haiti against projected impacts of climate change on drinking water availability and access, to be achieved through three interrelated components, specifically: i) improved understanding and awareness of the water sector's vulnerability to climate change; ii) strengthened regulatory and policy frameworks, as well as institutional capacities at national, regional and local levels for the improved management of drinking water under climate change conditions; and iii) identification and promotion of practices for the conservation, management and supply of drinking water adapted to climate change conditions.

FINANCING PLAN

GEF Trust Fund grant: LDCF	USD 4,504,563
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UNDP TRAC resources	USD 100,000
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1. Total Budget administered by UNDP	USD 4,604,563
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2. Total confirmed co-financing to this project not administered by UNDP	USD 30,470,000
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3. Grand-Total Project Financing (1)+(2)	USD 35,074,563
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SIGNATURES:

Signature:



James CADET, Minister of Environment

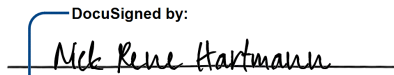


Agreed by Government
Development Coordination
Authority

Date/Month/Year:

21 novembre 2022

Signature:

DocuSigned by:


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Nick Rene HARTMANN, Resident Representative-
UNDP Haiti

Agreed by UNDP

Date/Month/Year:

21 novembre 2022

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List of Acronyms

AFOLU	Agriculture, Forestry and other land use
CAEPA	Water Supply and Sanitation Committee
CBA	Cost-Benefit Analysis
CBO	Community-Based Organisation
CC	Climate Change
CCA	Climate Change Adaptation
CEDAW	UN Committee on the Elimination of Discrimination Against Women
CNA	Capacity Needs Assessment
CSOs	Civil Society Organisations
CTE	Technical Operation Centre
DINEPA	National Directorate for Drinking Water and Sanitation
EbA	Ecosystem-based Adaptation
ENSO	El Niño Southern Oscillation
GAP	Gender Action Plan
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GoH	Government of Haiti
GSM	General Circulation Model
HDI	Human Development Index
INC	Initial National Communication
IP	Impact Pathway
IPC	Integrated Food Security Phase Classification
IPCC	Intergovernmental Panel on Climate Change
IWRM	Integrated Water Resources Management
LDC	Least Developed Country
LDCF	Least Developed Countries Fund
MARNDR	Ministry of Agriculture, Natural Resources and Rural Development
MoE	Ministry of Environment
MEF	Ministry of Economy and Finance
MPCE	Ministry of Planning and External Cooperation
MRPP	Metropolitan Region of Port-au-Prince
MTPTC	Ministry of Public Works, Transportation and Communication
NAPA	National Action Plan for Adaptation
NDC	Nationally Determined Contribution
NGOs	Non-Governmental Organisations
O&M	Operations and Maintenance
ONQEV	National Observatory on Quality of Environment and Vulnerability
OREPA	Regional Office for Drinking Water and Sanitation
PPG	Project Preparation Grant
PNAE	National Environmental Action Plan
PNCC	National Policy to Combat Climate Change
PNGRD	Disaster Risk Reduction Plan and Strategy
PPCR	Pilot Program for Climate Resilience
PSDH	Strategic Development Plan of Haiti
RCP	Representative Concentration Pathway
SAEP	Drinking Water Supply System

SHDI	Subnational Human Development Index
SNC	Second National Communication
SNRE	The National Service for Water Resources
ToT	Training of Trainers
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VA	Vulnerability Assessment
WASH	Water, Sanitation and Hygiene
WTP	Willingness-to-pay

II. DEVELOPMENT CHALLENGE

Geographic, Political, economic and social context

Haiti is situated in the Caribbean Archipelago and forms part of Hispaniola Island, together with the Dominican Republic. While the Dominican Republic occupies the east of Hispaniola, Haiti occupies the west, covering an area of 27,750 km², with land covering 27,560 km², and water 190 km²¹. The South-East (*Sud-Est*) Department is one of the 10 departments² of Haiti, with an area of ~2,000 km² and a population of ~633,000 — of which ~85% is rural³. The South-East Department is divided into eight river basins of differing sizes, draining into the Caribbean, with mostly steep topography and only a narrow littoral strip. There is a steep rainfall gradient between mountainous and more western areas of the Department. In mountainous areas, annual precipitation varies between 1,250 and 2,500 mm, and in the coastal strip, particularly the southeastern extreme of the area, annual precipitation ranges between 500 and 750 mm with strongly pronounced seasonal variations. Food security in Haiti relies heavily on rainfed, subsistence farming, and the majority of the arable countryside has been degraded by unsustainable farming practices, leading to severe erosion⁴. Women in Haiti are not only subsistence farmers but also take care of the household according to traditional and cultural norms. Haiti's overall GDP growth in the same period (1971–2013) averaged only 1.2% per year, significantly lower than the average of the Latin America and Caribbean (LAC) region. In addition to political instability, Haiti suffers GDP loss due to its economy and population being subjected to natural disasters — earthquake, hurricanes, floods and droughts — every year.

Baseline climate conditions

Haiti is characterised by a year-round hot and humid tropical climate and is subject to variability driven by the El Niño Southern Oscillation (ENSO). The country is divided into tropical rainforest and tropical monsoon climates with small areas of arid steppe and temperate climates (see Figure 2⁵).

Temperature : The average annual temperature in Haiti is 24.4°C (Figure 3) with monthly temperatures typically ranging between 19–28°C in winter and 23–33°C during summer (Figure 4). The size of the country allows for latitudinal variation in mean monthly temperatures. Still, temperatures are consistently high in the lowland areas, ranging between 15–25°C in winter and 25–35°C during the summer months.

Rainfall: The average annual rainfall in Haiti ranges between 1,400 and 2,000 mm, with uneven distribution across the country (Figure 5) while the average monthly rainfall ranges between 40 and 210 mm (Figure 6).

Extreme weather events: Between 1993 and 2012, the country experienced, two droughts, 26 hurricanes and 31 floods^{6,7} — 10 of which were directly attributed to hurricanes (Figure 7).

Observed and projected climate change and associated hazards

General trends of projected temperature and precipitation changes for Haiti over the 21st century indicate a warmer and drier climate. While temperature projections are more certain, rainfall uncertainty will increase along with rainfall variability in terms of both rainfall seasonality and the intensity of rainfall events⁸. These trends are projected to increase in intensity in the future (Figure 8).

¹ The World Factbook: Haiti <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html>

² In the administrative divisions of Haiti, the department is the first of four levels of government. Haiti is divided administratively into 10 departments, which are further subdivided into 42 arrondissements, 145 communes, and 571 communal sections.

³ <https://data.worldbank.org/country/haiti>

⁴ Kome, C., Reich, P., Lene, J., Libohova, Z., Monteith, S., Finnell, P., McVey, S., Scheffe, L., Southard, S., Bailey, S. and Rolfes, T., 2018, September. Soil information system: The pathway to soil and food security in Haiti. In *Global Soil Security: Towards More Science-Society Interfaces: Proceedings of the Global Soil Security 2016 Conference*, December 5-6, 2016, Paris, France (p. 57). CRC Press.

⁵ All figures relating to the baseline climate in Haiti are illustrated after Annex 15 towards the end of the document.

⁶ Resilient Productive Landscapes in Haiti (P162908). The World Bank (2018). Available at: <http://documents1.worldbank.org/curated/en/268321512771981483/pdf/Project-Information-Documents-Integrated-Safeguards-Data-Sheet-Resilient-Productive-Landscapes-in-Haiti-P162908-Sequence-No-00.pdf>

⁷ International Monetary Fund: Staff Country Reports. *Haiti 2012 Article IV Consultation and Fifth Review Under the Extended Credit Facility*. Available at: <https://books.google.co.bw/books?id=F1idLEME-tAC&pg=PT21&lpg=PT21&dq=haiti+1993+-+2012&source=bl&ots=2d9PMMbRri&sig=ACfU3U1rCv9LY-gTIm2I2p36kuySXDUBHA&hl=en&sa=X&ved=2ahUKEwji04zQv6nqAhVOPcAKHc1JAlkQ6AEwAXoECA8QAAQ#v=onepage&q=haiti%201993%20-%202012&f=false>

⁸ USAID. 2017. Climate Change Risk Profile: Haiti. Available at: https://www.climatechange.org/sites/default/files/asset/document/2017_Cadmus_Climate-Risk-Profile_Haiti.pdf

Temperature: The annual mean daytime temperatures for the Caribbean region show an increase of 0.19°C per decade over the period 1961–2010⁹. These warming trends are projected to continue into the future. Across the country, using IPCC Representative Concentration Pathways (RCP) scenarios 4.5 and 8.5, mean annual temperatures are projected to increase. Under RCP4.5, the mean annual country temperature increase is expected to be 0.52–1.14°C for the 2030s and 0.78–1.71°C for the 2050s. Under RCP8.5, mean annual temperature increase in Haiti falls between 0.64–1.24°C for the 2030s and by 1.11–2.16°C for the 2050s¹⁰.

Rainfall: Interannual (year to year) variability is a major feature of Haiti's historical rainfall record. This record does not show a linear trend compared with the temperature time series, but instead shows considerable interannual and decadal variability. The prevalence of the interannual timescale in the rainfall time series is typical of Caribbean rainfall¹¹. Accordingly, variations of annual rainfall in Haiti combine irregular, multi-decadal variability with insignificant variations, usually lasting for periods of approximately three or seven to nine years¹².

Projections suggest that from as early as the mid-2020s Haiti will experience a drying trend. From IPCC RCP4.5 and 8.5 ensemble median scenario¹³, rainfall projections are expected to follow a downward trend in the future, with average annual rainfall change estimated to ~-0.1mm/day in the 2030s¹⁴. The 2050s will experience rainfall decrease during the driest months (July-August), while the projections for the remainder of the year are more uncertain. Under RCP8.5, the annual projected decrease in precipitation is ~45mm¹⁵. However, while decreases in precipitation coupled with increases in temperature are likely to intensify the frequency and intensity of drought events country-wide, rainfall is expected to be more intense during the wet season¹⁶.

Extreme weather events: While the historical record of Atlantic hurricanes dates to the mid-1800s, and indicates other decades of high activity, there is uncertainty regarding frequency and intensity in the record prior to the satellite era (early 1970s). Consequently, the ability to assess longer-term trends in hurricane activity is limited by the quality of pre-satellite data¹⁷. However, measures of intensity, frequency and duration as well as the number of Category 4 and 5 storms since the early 1980s indicate a considerable increase in Atlantic hurricane activity since high-quality satellite data became available^{18,19,20,21}. The frequency and intensity of hurricanes and storms are projected to continue to shift under future climate change conditions. Specifically, estimates show that there will be: i) increased hurricane intensity of 5–10% and a related precipitation increase of 2% by 2050²²; ii) similar tropical storm/hurricane genesis, frequency and tracks compared to the very recent past (last two decades) but increased intensities (rainfall rates and wind speeds)²³; and iii) a relatively modest (~3%) but robust increase in the frequency of tropical storm tracks averaged over the 21st Century (2006–2100) compared with a baseline period of 1950–2005²⁴.

⁹ Campbell, J. D., M. A. Taylor, T. S. Stephenson, R. A. Watson, and F. S. Whyte, 2011: Future climate of the Caribbean from a regional climate model. *Int. J. Climatol.*, 31, 1866–1878

¹⁰ World Bank Group. 2019. Climate Knowledge Portal: Haiti Country Context

¹¹ IDB. 2015. Haiti: historical and future climatic changes. Available at: <https://publications.iadb.org/publications/english/document/Haiti-Historical-and-Future-Climate-Changes.pdf>

¹² Moron, V., Frelat, R., Jean-Jeune, P.K., and Gaucherel, C. 2015. Interannual and intra-annual variability of rainfall in Haiti (1905–2005). *Clim Dyn* 45:915–932.

¹³ An ensemble is a collection of model simulations characterizing a climate prediction or projection (IPCC AR5).

¹⁴ USAID. 2015. Climate Change Information Fact Sheet: HAITI.

¹⁵ USAID. 2015. Climate Change Information Fact Sheet: HAITI.

¹⁶ Cohen, Marc and Bhawan Singh, 2014. Climate Change Resilience: The Case of Haiti. Oxfam Research Reports

¹⁷ IDB. 2015. Haiti: historical and future climatic changes. Available at: <https://publications.iadb.org/publications/english/document/Haiti-Historical-and-Future-Climate-Changes.pdf>

¹⁸ Bell, G. D., Blake, E. S., Landsea, C. W., Kimberlain, T. B., Goldenberg, S. B., Schemm, J. and Pasch, R. J. 2012. [Tropical cyclones] Atlantic basin [in "State of the Climate in 2011"]. *Bulletin of the American Meteorological Society*, 93, S99–S105, State of the Climate.

¹⁹ Bender, M. A., Knutson, T. R., Tuleya, R. E., Sirutis, J. J., Vecchi, G. A., Garner, S. T. and Held, I. M. 2010. Modeled impact of anthropogenic warming on the frequency of intense Atlantic hurricanes. *Science*, 327.

²⁰ Emanuel, K. 2007. Environmental factors affecting tropical cyclone power dissipation. *Journal of Climate*, 20.

²¹ Landsea, C. W., and Franklin, J. L. 2013. Atlantic hurricane database uncertainty and presentation of a new database format. *Monthly Weather Review*, 141.

²² USAID. 2017. Climate Risk Profile: Haiti. Available at:

https://www.climatelinks.org/sites/default/files/asset/document/2017_Cadmus_Climate-Risk-Profile_Haiti.pdf

²³ 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>

²⁴ Karnauskas, K.B. 2018. Report on Climate Change Projections for the Trois Rivières Region of Haiti. UNDP.

Problem statement

The impacts of climate change are resulting in a considerable reduction in the availability of fresh water for rural communities and small urban centres in Haiti's South-East Department. These reductions are primarily driven by an increase in the duration and intensity of drought periods in combination with deforestation^{25,26}, resulting in reduced water yields in springs, wells, and rivers. Shortfalls in groundwater resources are further compounded by an increase in the intensity of rainfall events, which, when coupled with extensive ecosystem degradation in critical recharge zones, reduce rainwater infiltration and subsequent aquifer recharge. In addition to the impacts on aquifer recharge, changes in rainfall patterns are increasing the frequency of floods and landslides, which threaten critical water distribution infrastructure and increase the risk of water-borne diseases. These climate change-induced reductions in water availability will exacerbate baseline water deficits driven by increasing demand from a growing population. The impact pathways underlying the core climate change problem, compounded by non-climate drivers, are presented in the problem tree in (Figure 9) below.

Root causes

Haiti is one of the most climate-vulnerable countries globally, ranked 173rd out of 181 surveyed countries for Climate Readiness under the ND-GAIN index²⁷. Furthermore, this index lists Haiti as the 27th most vulnerable country to the impacts of climate change. According to the IPCC AR6 report²⁸, the frequency and intensity of heavy precipitation events have increased since the 1950s over most global land area for which observational data are sufficient for trend analysis, with human-induced climate change likely being the main driver. Therefore, human-induced climate change has contributed to increases in agricultural and ecological droughts in some regions due to increased land evapotranspiration. In addition to the abovementioned climate impacts, Haiti is vulnerable to earthquakes, which can constrain the resources available for recovery after extreme climate events. For example, a magnitude 7.0 earthquake struck the country in 2010 with an epicentre ~25 km west of the capital, Port-au-Prince, resulting in recovery costs nearing US\$14 billion — assessed as the worst in this region over the last 200 years. The earthquake was also estimated to have killed over 300,000 people, while leaving ~1.5 million left homeless. These natural disasters and extreme climatic events have further hampered the already challenged socioeconomic development of the nation. In addition to these natural hazards, the Haitian economy has been adversely affected by multiple shocks since mid-2018.

Underlying causes

Poverty and basic resource insecurity: The South-East department is one of the most vulnerable areas in the country to poverty, with a poverty rate of 39.6%²⁹. Additionally — as result of limited financial capital for development — only 25% of Haiti's population has access to basic water services, with 53% having limited access and 22% having no access, respectively³⁰. There are disparities regarding access between urban and rural areas in Haiti, particularly for access to improved water sources, where 62% of urban and 34% of rural residents have access to distributed water³¹, respectively. Accordingly, water supply in secondary villages in the South-East department serves only ~35.5% of the population³². Water requirements in rural areas are met through protected and unprotected springs and rivers, rainwater, wells, public fountains and the purchase of water buckets. Rural communities therefore depend heavily on unsafe water sources such as irrigation water, water run-off and river water, contributing to the spread of water-borne illnesses like cholera and typhoid³³. These vulnerabilities will be exacerbated by the impacts of climate change such as flooding through: i) the

²⁵ Singh, B. and Cohen, M., 2014. Climate Change Resilience: The Case of Haiti. Oxfam Research Reports. University of Montreal and Oxfam America

²⁶ CWS. 2016. Drought and climate change in Haiti. Available at: <https://cwsglobal.org/blog/drought-and-climate-change-in-haiti/>

²⁷ The ND-GAIN Index summarises a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

²⁸ <https://www.ipcc.ch/report/ar6/wg1/>

²⁹ IMF. 2014. Haiti Country Report 14/154: Poverty Reduction Strategy Paper. Available at: <https://sustainabledevelopment.un.org/content/documents/1451haiti.pdf>

³⁰ World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines. 2017. P.46. Available at: <https://www.who.int/mediacentre/news/releases/2017/launch-version-report-jmp-water-sanitation-hygiene.pdf>

³¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6154159/>

³² Knowles, R.B., Markley, B., Buckalew, J.O. and Roebuck, L.W., 1999. Water resources assessment of Haiti. US Army Corps of Engineers, 93.

³³ Singh, B. and Cohen, M.J. 2014. Climate Change Resilience: The Case of Haiti.

contamination of existing water supplies³⁴; and/or ii) the destruction of water supply and sanitation facilities, which reduces water security and results in the increased use of contaminated water for household use³⁵. The effect of such disasters was demonstrated during the 2010 post-earthquake recovery in Haiti, when limited access to sanitation and safe drinking water contributed to the 2010 cholera outbreak³⁶. Additionally, women and children are disproportionately at risk of negative health-related impacts when compared with men³⁷, as the former have a higher level of exposure to contaminated water because of gender roles in the home (including women's expected cooking and cleaning duties). Moreover, when displacement and relocation occur after a flooding event, women and girls are also exposed to a greater risk of gender-based violence (GBV) — including sexual violence. This outcome may be partially attributed to the breakdown of traditional societal protections in the aftermath of a natural disaster³⁸.

Food insecurity is also a national concern, with Integrated Food Security Phase Classification (IPC) projections for March to June 2020 estimating that ongoing socioeconomic difficulties will push 4.1 million people, or 40% of Haiti's population, into severe food insecurity (Phase 3 and above), including 1.2 million at emergency level (Phase 4)³⁹. As of 2020, the South-East Department has been classified as Phase 3 — indicating a state of crisis, with 50% of the population in need of immediate assistance⁴⁰. The threat of greater food insecurity, coupled with inadequate access to water resources, is expected to present a health crisis if these needs are not addressed under worsening climate conditions that will exacerbate the impacts of these baseline challenges.

Deforestation and soil erosion: Haiti's landscape has been subject to widespread deforestation given that subsistence farmers often resort to charcoal production to supplement their income as a response to low yields, crop failure or unexpected expenses — particularly in extremely wet or dry years. As a result, most of the country's native forests have been harvested over time with minimal efforts of reforestation⁴¹. These practices have radically changed the country's natural landscape, as the large-scale removal of tree cover has decreased the soil's infiltration capacity and contributed to increased surface runoff during heavy rainfall events. This, in turn, has considerably increased flood frequency and intensity, with floods washing away fertile soils and causing sedimentation of riverbeds and blocking drainage infrastructure. Given a near-complete absence of embankments and levees, 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 lives⁴². For example, the Lamontagne de Jacmel section in the South-East Department is facing considerable erosion and soil degradation because of deforestation by local populations for fuel, income and land clearing needs⁴³. Accordingly, vulnerable communities in the South-East Department 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.

Social conflict over natural resources

Climate change undermines human security through reducing communities' access to natural resources — as well as by undermining the capacity of states to provide opportunities and services — that are required for sustaining their livelihoods, increasing the risk of violent conflict⁴⁴. Accordingly, the impacts of climate change in Haiti's the South-East Department have resulted in increased water and food insecurity, poverty and income insecurity, as well as increased social conflicts over the use of natural resources, ultimately resulting in a

³⁴ World Health Organization. N.d. Flooding and communicable diseases fact sheet. Available: https://www.who.int/hac/techguidance/ems/flood_cds/en/

³⁵ Associated Programme on Flood Management. 2015. Health and Sanitation Aspects of Flood Management. *Integrated Flood Management Tools Series*. Available: https://www.floodmanagement.info/publications/tools/Tools_23_Health_and_Sanitation_Aspects_of_Flood_Management.pdf

³⁷ World Health Organization, 2014. Gender, climate change and health. World Health Organization.

³⁸ International Federation of Red Cross and Red Crescent Societies. 2015. *Unseen, unheard: Gender-based violence in disasters*. Geneva, Switzerland.

³⁹ IPC Haiti Acute Food Insecurity Analysis 31/10/2019 <https://reliefweb.int/report/haiti/haiti-ipc-acute-food-insecurity-analysis-october-2019-june-2020>

⁴⁰ IPC. 2020. Acute Food Insecurity Analysis August 2020 – June 2021. Available at: <https://reliefweb.int/report/haiti/haiti-ipc-acute-food-insecurity-analysis-august-2020-june-2021>

⁴¹ 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>

⁴² OXFAM, Welt Hunger Life, NATHAT, and Cap-Haitien.

⁴³ <https://www.reforestation.com/en/reforestation-haiti>

⁴⁴ Barnett, J. and Adger, W.N., 2007. Climate change, human security and violent conflict. *Political geography*, 26(6), pp.639-655.

feedback loop of increasing human pressure on already degraded natural resources⁴⁵. These trends have also resulted in negative impacts on gender equality, as women tend to focus on agriculture and water collection. Therefore, the rehabilitation of watersheds, strengthening of water availability and participatory management of natural resources will help reduce conflicts and maintain social cohesion among the local populations of Haiti's South-East Department.

Immediate causes

Local water supply in the South-East Department is highly dependent on springs and rivers, often resulting in inadequate quality or availability because of its susceptibility to seasonal variations in runoff and the water table level. In the region's rural areas, water supply systems generally consist of water points equipped with handpumps, while spring catchments feed the piped systems of small towns, where water is delivered through fountains, kiosks and household connections. At present, several water distribution systems are not functional as a result of insufficient funds for operation and maintenance (O&M), while less than 10% are equipped with the necessary water cleaning technology, such as chlorination devices. Furthermore, some communities have no access to drinking water at all as a result of minimal network maintenance and drought-related decreases in the water flow — as in the cases of the K-Royer and Tiban drinking water supply systems in the South-East Department⁴⁶. These already-existing vulnerabilities are exacerbated by observed climate change impacts on water sources in Haiti, as unavailable or inadequate management of water infrastructure makes the agricultural regions — and the livelihoods that depend on them — particularly vulnerable to a changing climate⁴⁷. For example, the South-East Department has been severely affected by the 2013, 2015 and 2016 droughts in Haiti. During those events, Haiti's National Directorate for Drinking Water and Sanitation (DINEPA), observed that some sources had completely dried up while the flow rate had considerably reduced in general. Additionally, according to DINEPA, Haiti's water sources are not regularly monitored and measured, which is necessary for garnering the required knowledge on the seasonal and interannual variations in water flow in the Department.

Alignment with national policies, strategies and plans

The country's socioeconomic challenges have constrained efforts to combat the impacts of climate change in Haiti. However, in 2006, Haiti developed a National Action Plan for Adaptation (NAPA) and the country is implementing a set of activities arising from the NAPA and the Pilot Program for Climate Resilience (PPCR). There are ten priorities in Haiti's adaptation strategy, including: i) food security, ii) community resilience in coastal areas, iii) the fight against the destruction of biodiversity, and iv) environmental degradation. The Government of Haiti (GoH) has also ratified numerous international agreements and treaties, and developed local, regional and national strategies relevant to the proposed project. These policies, strategies and plans particularly relate to, *inter alia*, climate change adaptation, water resources and land management — including forests and agricultural land. Table 10 after Annex 15 provides an overview of the main policies, strategies, and plans in these sectors.

⁴⁵ Singh, B. and Cohen, M., 2014. Climate Change Resilience: The Case of Haiti. Oxfam Research Reports. University of Montreal and Oxfam America.

⁴⁶ More information on the challenges to water access in these sources as well as the relevant affected communities is available in the Site Selection Annex.

⁴⁷ Molnar, J.J., Kokoye, S., Jolly, C., Shannon, D.A. and Huluka, G., 2015. Agricultural development in northern Haiti: mechanisms and means for moving key crops forward in a changing climate. *Journal of Agriculture and Environmental Sciences*, 4(2), pp.25-41.

III. STRATEGY

Climate change is exacerbating existing pressures on drinking water resources in Haiti (Section II), negatively affecting the lives and wellbeing of vulnerable communities. The preferred solution is to increase water availability in target watersheds in the country's South-East Department by conserving critical water recharge zones and aquifers, while enhancing the climate resilience of water distribution and storage infrastructure to ensure reliable access to water resources for target communities. These interventions will be supported by strengthened institutional and regulatory systems to promote the sustainable management of water resources and infrastructure.

The proposed project will achieve the preferred solution through three interrelated components — specifically:

- Component 1 — Improved understanding and awareness of the water sector's vulnerability to climate change;
- Component 2 — Strengthened regulatory and policy frameworks, as well as institutional capacities at national, regional and local levels for the improved management of drinking water under climate change conditions; and monitoring;
- Component 3 — Identification and promotion of practices for the conservation, management and supply of drinking water adapted to climate change conditions.

Under these three components, the proposed project's climate change adaptation strategy will include: i) implementing on-the-ground interventions to improve aquifer recharge and climate-proof drinking water supply (such as agroforestry, the protection of water sources and aquifer recharge areas, percolation tanks and rainwater harvesting systems); ii) strengthening local capacities for climate-resilient water resource management through awareness raising and knowledge generation; and iii) developing support tools and strengthening technical/institutional capacities of decision-makers at the national and regional level to promote the mainstreaming of climate change into the planning and management of drinking water and associated natural resources in Haiti. These interventions will contribute to the disruption of several climate change Impact Pathways (IPs) identified in Section II, as discussed in greater detail in this section.

The proposed project will target vulnerable areas of the country's South-East Department, specifically the catchment areas, recharge zones and springs of the Cresson, Bodarie, Préchet, Cascade Pichon and K-Royer⁴⁸ Drinking Water Supply Systems (SAEPs). These five target SAEPs were selected according to a methodology⁴⁹ that was defined and developed collaboratively between the Government of Haiti (GoH), UNDP Haiti and consultants on the PPG Team. In summary, this methodology involved identifying strategic SAEPs within the department according to their regional socioeconomic and environmental relevance, gathering related data on these SAEPs, and then prioritising the SAEPs according to a multi-criteria analysis (MCA). Prioritisation was carried out according to five weighted (%) criteria, namely: i) community vulnerability to climate change (40%); ii) ecosystem vulnerability to climate change (20%); iii) number of potential beneficiaries (15%); iv) potential to build on past or ongoing projects (15%); and v) potential for support and buy-in (10%). Adaptation interventions to be implemented under the above project components will positively impact local communities in these areas by reducing their vulnerability and increasing their resilience to droughts and floods. By providing tools and developing capacities for the improved management of drinking water resources, project interventions will enable ~ 130,000 direct beneficiaries — reliant on the abovementioned drinking water sources — to benefit from more reliably available drinking water throughout the year under the context of increasingly long and intense drought periods that are expected to result from climate change (as discussed in Section II).

The components and related interventions outlined above form part of the proposed project's Theory of Change, which maps out the project's baseline problem, assumptions, barriers, risks, components, outputs, outcomes and objectives (Figure 1). The barriers to the project's preferred solution are discussed below, as well as how the project's interventions will disrupt the relevant climate change Impact Pathways. In addition, the assumptions for achieving the project's objectives — as well as details on how the project's outcomes and outputs support the GEF's climate change adaptation focal area objectives — are provided at the end of this section.

⁴⁸ More information on the geographical locations of these sources as well as the relevant affected communities is available in the Site Selection Annex (12a)

⁴⁹ More information on the site selection methodology is available in the Site Selection Annex (12a).

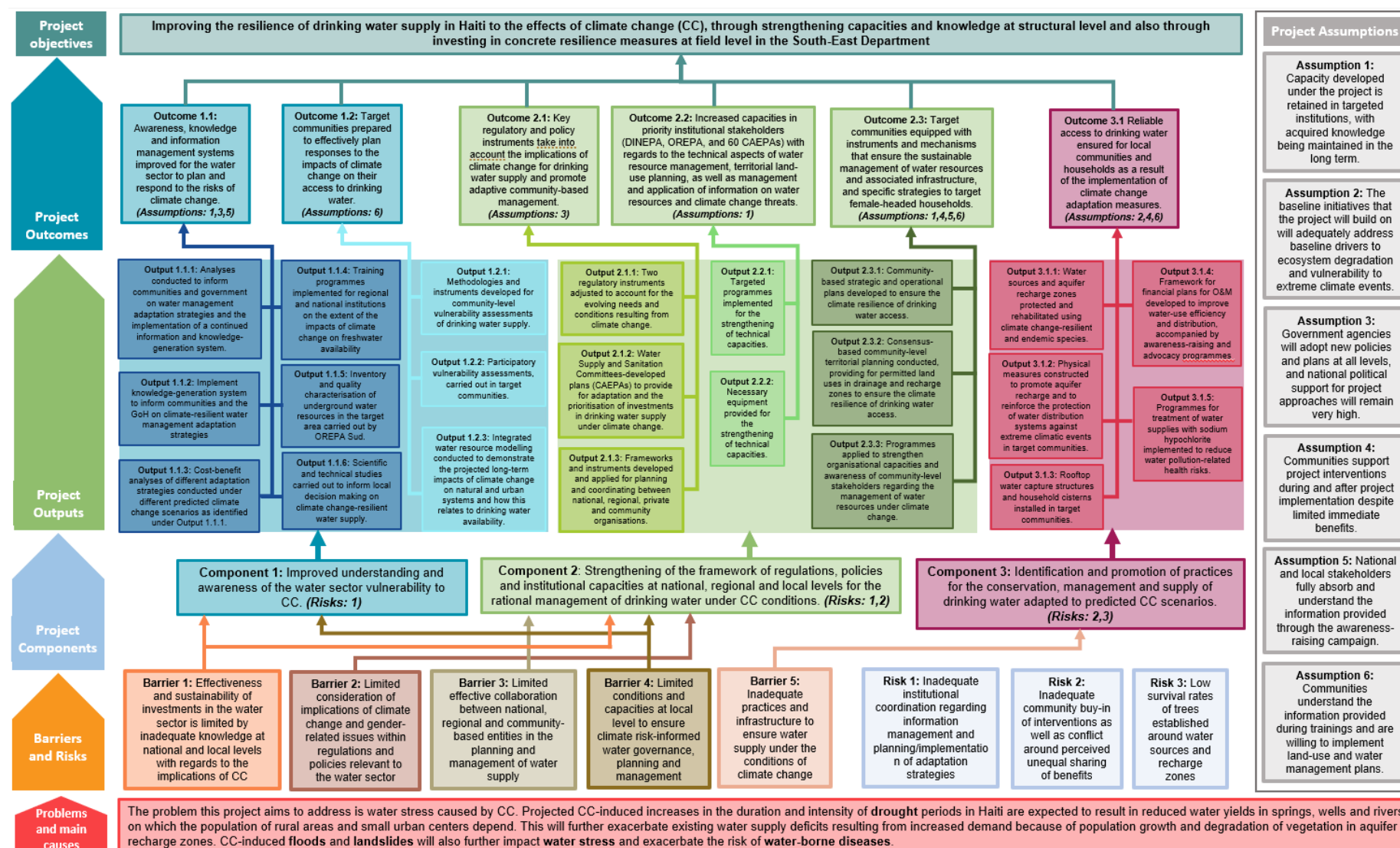


Figure 1. Theory of Change diagram for the proposed project indicating how the interventions will address the climate change problems, as well as the identified barriers, to achieve the project's objective of building climate resilience in the target communities. The descriptions of the project outputs have been abbreviated in the diagram, but the full descriptions are available in Section IV of the Project Document.

Barriers to the preferred solutions

There are several barriers to the preferred solution for addressing the challenges to drinking water availability in the target areas in Haiti in the face of climate change risks. These barriers are elaborated on below.

Barrier 1: Effectiveness and sustainability of investments in the water sector is limited by inadequate knowledge at national and local levels with regards to the impacts of climate change.

Currently, there is limited knowledge and understanding of how projected changes in climatic conditions will affect the availability of drinking water in Haiti. This remains a challenge despite the efforts of Haiti's national institutions — such as the National Observatory on Quality of Environment and Vulnerability (ONQEV) and the National Service for Water Resources (SNRE) — that are dedicated to the generation and management of information on water and other natural resources as well as the ongoing donor support to their necessary capacity development. At present, limited information includes the quantity, quality and spatial extent of water availability in the country, in addition to the relative cost-benefits of different adaptation options. While the abovementioned baseline initiatives will largely address the generation and management of information, the capacity for analysing, interpreting and applying the climate risk information as a support to effective evidence-based decision-making remains limited. Without this understanding, it is difficult to generate and replicate best practices for addressing the impacts of climate change on the drinking water sub-sector in Haiti, limiting the scope of additional investments.

Barrier 2: Limited consideration of climate change impacts and gender-related concerns within regulations and policies relevant to the water sector.

Despite the emergence of favourable regulations and policies in the environmental sector, these will not specifically address the challenge of water supply because it falls outside the Haitian Ministry of Environment's mandate. In addition, existing policies are unable to ensure that climate change impacts are taken into consideration in their formulation, planning and execution. This results in the risk that these instruments will progressively lose their relevance and context by not accounting for the threats, appropriate strategies, and technical solutions required to remain adequately responsive to changing climatic conditions.

In addition to the abovementioned environmental policy limitations, Haiti's current legislative frameworks also do not account for the interconnectedness of the impacts of climate change and gender dynamics in the water sector. Specifically, women are disproportionately affected by the impacts of climate change on the water sector because of the core role of collecting freshwater for household cooking and cleaning. For example, women that are forced to travel longer distances to collect freshwater as a result of drying resources are exposed to increased vulnerability to associated risks such as gender-based violence (GBV) and community conflict during water-scarce periods. In addition, there is minimal participation of women in decision-making positions in national and sub-national government. As detailed in Section II, ongoing national and international support is required to address the persistent gender inequity in Haiti, because the empowerment and protection of women is important to the country's economic and democratic development.

Barrier 3: Limited effective collaboration across national, regional and community levels in the planning and management of water supply

As mentioned under Barrier 1, the responsibilities for the generation and management of information are divided among several entities, including ONQEV (located in MoE), SNRE (located in MARNDR) and also DINEPA. These entities are additionally responsible for the planning, management and use of water and other natural resources in Haiti. However, these entities operate within a constrained policy and governance framework — as discussed in Barriers 1 and 2 — which has limited opportunities and incentives to coordinate efforts to address water resource-related climate risks. This has resulted in a lack of defined roles and responsibilities of institutions dealing with water management, which has led to uncoordinated efforts by donors and stakeholders and subsequent problems in planning, implementation and accountability. 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 resource 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 amplifies the trend of individual households prioritising private needs over sustainable community- or catchment-level management. This lack of vertical coordination and oversight is evident in line ministries providing minimal support to local communities. Although some ministries are present in rural communities, they are not very active, which leads to water user or farmer associations not having the resources and capacity to implement changes in conservation or productive practices for better managing water resources. While support has been provided by the World Bank Pilot Program for Climate Resilience (PPCR)⁵⁰ in the form of lessons learned, the necessary inter-institutional collaboration to enable this knowledge to inform the planning and implementation of adaptation strategies currently remains inadequate in practice. The key lessons learned from the PPCR relevant to improving the planning and management of climate resilient water supplies in Haiti are as follows:

1. Coordination across multiple sectors supported with leadership from the highest levels of government has been shown to be the most effective approach for shaping a program of resilient investments and facilitating scalability.
2. An evidence base of knowledge for future impacts is a critical factor for accelerating resilient development.
3. Funds leveraged at scale through formal MDB collaboration and Phase 2 grants and concessional loans is pivotal for country buy-in, with planning grants alone being insufficient.
4. Investments and policy reforms that goes beyond Phase 2 investment funds has been shown to advance partnering with bilateral and country-based funding sources, spur policy reforms, and further the incorporation of resilience at the national, regional and local levels.
5. Mandatory and documented stakeholder engagement builds ownership and support for the planning and investment selection process.
6. Periodic dedicated learning and exchange fora among PPCR pilot countries help build credibility and professionalism of participants while sharing practical experiences.
7. Upfront technical assistance and targeted advisory services has been critical for overcoming barriers to engaging the private sector on climate resilience.
8. Tracking overall national progress towards resilience through the 5 PPCR core monitoring and reporting resilience indicators is necessary for maximizing benefits.
9. National-level strategies linked with concrete investments ensures sustained engagement with countries.

Barrier 4: Limited conditions and capacities at local level to ensure climate risk-informed water governance, planning and management.

Although water committees — alongside several other community-based organisations⁵¹ — exist in many communities in Haiti, the impact of these organisations is limited with regards to ensuring the application of effective water or natural resource management practices to sustainably maintain the resilience of local water supplies. This is caused by a combination of conditions, including the absence of participatory and inclusive planning which is a fundamental principle of integrated water resource management approaches for climate resilience. Underlying factors for this include technical and financial capacity constraints at the municipal level, which 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. Moreover, there is limited technical knowledge amongst communities on how to adapt to climate change and increase resilience, particularly using nature-based solutions. For example, although communities are aware of a relationship between droughts and deforestation, there is limited awareness of the need for collective action on catchment-wide rehabilitation and shared water resource management. There is also no experience or incentive among water users to consider

⁵⁰ For more information on key lessons learned, see <https://climatefundsupdate.org/the-funds/pilot-program-for-climate-resilience-2/>

⁵¹ Several of these CBOs are established and/or supported by NGOs or Catholic churches.

sub-catchment scale water management in their household decision-making. This is because — within the context of poverty that is prevalent in rural Haiti — households make decisions in the interest of their own immediate survival first without necessarily considering the impact of those decisions on the sub-catchment and the long-term impacts on their own wellbeing. Owing to the above conditions, communities have limited capacity to resolve conflicts over local water resource use — and while these conflicts are a recognised problem at the policy level, there has been minimal on-the-ground actions to address the conditions that cause them to arise⁵².

Barrier 5: Inadequate practices and infrastructure to ensure water supply under the conditions of climate change.

Given the projected impacts of climate change on the runoff rates, spring yields and aquifer levels of water sources in Haiti, existing and proposed water supply systems will be unable to meet local water needs. In particular, communal water fountains may become unusable as they depend on springs that may dry up under the expected drought conditions. In addition, the capacities of reservoirs and tanks designed based on the current dry season durations are likely to be inadequate during the prolonged dry seasons — as discussed in Section II — that result from climate change. Similarly, wells may also dry up where the projected water table level reductions resulting from climate change were not considered in measuring their depth during initial construction. Moreover, current levels of household water consumption and agricultural water use may become more unsustainable as water yield decreases because of ineffective organisation among water users for planning and implementing adaptive water management options that would be necessary under the projected scarcity scenario without project interventions. These challenges are exacerbated inadequate operation and maintenance (O&M) of water distribution infrastructure, which contributes to the unavailability of drinking water.

The financing of the project is adequate and the project demonstrates a cost-effective approach to meet the project objectives.

The Project considered 2 alternative strategies to achieve the proposed outcomes:

Scenario 1: Focus only on the supply side of water management and water access issues. In this scenario the Project would invest in i) deskreview and elaboration of plans for interventions on the water distribution networks, ii) Inventory and quality characterisation of groundwater aquifers in the target, iii) civil engineering works to procure and install physical structures of the water distribution network which would total about 800,000 USD

Scenario 2: Implement a comprehensive approach by addressing watershed management upstream, water source protection as well as water supply and demand-side (management) for greater efficiencies. Investments include i) participative and inclusive consultation and awareness sessions informing communities and the GoH on water management adaptation strategies and climate-resilient water supply by means of a continuous information- and knowledge-generation system; and ii) performing cost-benefit analyses of different adaptation strategies developed as per the different predicted climate change scenarios identified, iii) training programmes implemented to strengthen community capacities and awareness — with specific strategies to target female-headed households for sustainable and equitable monitoring and usage of drinking water. The costs add up to 3,000,000 USD

These scenarios were considered from technical as well as cost-efficiency considerations. If evaluating short term minimum cost, scenario 1 is a clear winner. However, considering long term benefits and costs, scenario 2 is better as it promotes long term sustainability due to community-based and participatory climate-resilient water resource management and sustainable land-use planning. Therefore, choosing scenario 2 allows the implementation of a more comprehensive solution that will ensure the sustainability and the ownership by the population.

⁵² Stoa, R. B. 2017. Water Governance in Haiti: An Assessment of Laws and Institutional Capacities. *Tulane Environmental Law Journal*, 29(2), 243–286. Available at <https://www.jstor.org/stable/90008697>

Preferred approach to address impact pathways

The project's preferred solution components, aimed at addressing the impact pathways (IPs) and abovementioned barriers, is discussed in detail below. Figure 10 outlines a simplified version of the causal chain analysis discussed in Section II and presents how the proposed project's objectives will address climate change impacts by disrupting several IPs. Each IP disruption has been numbered and correlates with the relevant outputs of the project's components as described in further detail under the relevant subsections below. This section presents a summary of these interventions, with detailed descriptions of the project outcomes, their specific outputs and activities presented in Section IV. The project's overall approach for disrupting these impacts is by reducing surface water runoff and erosion through physical measures (IP 1), increasing freshwater availability through rainwater harvesting and storage (IP 2), localised improvement of drinking water quality (IP 3) and increased groundwater resource bases through better management of shared resources in Haiti's South-East Department (IP 4).

Component 1: Improved understanding and awareness of the vulnerability of the water sector to climate change

At present, the knowledge and understanding at both national and local levels of the impact of future extreme climate events on the availability of drinking water in Haiti is limited — particularly with regards to the quantity, quality, and distribution of available water sources. This has resulted in limited awareness of and knowledge on effective water management adaptation strategies, which increases the vulnerability of water supply to climate change impacts. As a result of this constrained knowledge — combined with limited technical and financial capacities among relevant government institutions to collect data on, monitor and manage natural resources in the South-East Department — assessments have not been conducted to adequately identify, quantify and prioritise the vulnerabilities of local drinking water supply.

Under Component 1 of this project, Least Developed Countries Fund (LDCF) resources will be employed to utilise natural resource data generated and managed by the National Observatory on Quality of Environment and Vulnerability (ONQEV) and National Service for Water Resources (SNRE) to analyse climate change impacts on Haiti's national drinking water supply under different future climate scenarios. These analyses will calibrate climate change projections using local hydrogeological and hydrometeorological data — assisting in identifying potential water management adaptation strategies to improve climate-resilient water supply in Haiti's South-East Department (disrupting IP 4). The analyses will also include gender-specific criteria to ensure the consideration of differentiated impacts of limited drinking water availability on men and women in the country.

The abovementioned analyses will furthermore be used to conduct technical studies — including integrated water resource modelling — which will produce technical recommendations on how to maximise the suitability of adaptation strategies for local ecological and social contexts in the South-East Department (ultimately disrupting IP 4). This knowledge will inform training programmes to strengthen the technical capacity of government institutions at national and local levels, ultimately resulting in effective, climate-sensitive decision-making related to drinking water supply. Moreover, this component will include the development and implementation of appropriate methodologies and instruments for community-level vulnerability assessments, which will support such assessments of drinking water supply in target areas in a participatory manner — including the assessment of gender-related vulnerabilities. These assessments will provide an inventory of available water sources in the South-East Department alongside an evaluation of the quality of these water sources. This assessment will comprise the eight river basins of South-East Department of Haiti, with the aim of covering all rural communities in the department while also including an identification of the least and most climate-vulnerable water resources in the area. Ultimately, this will improve community understanding of the adverse effects of climate change on the availability of drinking water and the related impacts on their livelihoods, in addition to providing a platform for informed decision-making for future adaptation.

The activities under Component 1 will address two of the barriers presented above, specifically:

- Barrier 1 — by developing analyses of the effects of climate change on drinking water supply under different scenarios, informing technical studies that will ultimately form the basis for training programmes that will raise the awareness and technical capacity of government institutions at a national level.
- Barrier 4 — by strengthening the technical capacities of government institutions at local levels through training programmes informed by technical studies on improved water resources management in the target watersheds.

Component 2: Strengthening of the regulatory and policy frameworks, as well as institutional and technical capacities, at national, regional and local levels for the improved management of drinking water under climate change; and monitoring.

There is currently limited consideration of climate change within regulatory frameworks related to Haiti's management of drinking water. Consequently, climate change impacts are inadequately accounted for in the provisions made for the management of watersheds and water supply systems and in identifying priority actions for natural resource-dependent sectors. The complex institutional frameworks for water resource management — currently divided among several institutions, including the Ministry of Environment (MoE), National Directorate for Drinking Water and Sanitation (DINEPA) and the Ministry of Natural Resources and Rural Development (MARNDR) — exacerbate these challenges, with constrained collaboration on the planning and management of water resources and related information systems. Combined with limited technical and financial capacities available within government institutions, these factors inhibit effective analysis, interpretation, and evidence-based decision-making regarding Haiti's natural resources.

At the local level, the absence of community-level participatory planning approaches regarding water resource management and Climate Change Adaptation (CCA) interventions limits the effectiveness of strategies for the sustainable management of water resources and associated infrastructure.

Under Component 2, LDCF resources will be used to develop technical reviews and recommendations for integrating climate change adaptation into two existing regulatory instruments, namely DINEPA and OREPA Sud, relating to the management of drinking water supply in Haiti. In addition, project resources will be used to minimise the risk of conflicting or duplicated efforts between national, regional, local and community organisations — including the private sector — engaged in natural resource management by developing and applying frameworks and mechanisms for improved planning and coordination. These interventions will be supported by context-specific training programmes on aquifer and land management, land-use planning as well as water conservation to strengthen the technical capacity of relevant stakeholders on CCA in the drinking water sector in the South-East Department (disrupting **IP 4**). To support the application of skills acquired through these training programmes, stakeholders will receive the necessary equipment for the effective implementation of adaptation measures to enhance freshwater availability, including groundwater-level meters, rainfall gauges, discharge measurement tools and other equipment as required for each target site.

Second, LDCF resources will be used to consultatively aid communities to carry out land-use planning with supplemental training programmes implemented to strengthen community capacities and awareness — with specific strategies to target female-headed households. This will result in improved climate resilience, cost-effectiveness and sustainability of water distribution networks and target sub-catchment areas through helping communities to sustainably and equitably monitor and use drinking water (disrupting **IP 4**).

Several barriers will be addressed by Component 2, specifically:

- Barrier 1 — by mainstreaming climate change impacts into national regulatory mechanisms through integration into two existing regulatory instruments (DINEPA and OREPA Sud). Training programmes accompanying these mechanisms will strengthen the technical capacities of relevant stakeholders to analyse, interpret and apply climate risk information in support of effective evidence-based decision-making.
- Barrier 2 — through the integration of climate change into regulations and policies related to the water sector.

- Barrier 3 — by implementing frameworks and instruments for improved planning and coordination between national, regional, local and community organisations.
- Barrier 4 — by increasing communities' capacity for water resource management through training on land and aquifer conservation, as well as on land-use planning approaches based on the theory and practice of agro-ecological zoning, agroforestry and integrated water resources management. These interventions will be enhanced by strategic and operational planning structures developed collaboratively between community representatives, DINEPA and relevant ministries.

Component 3: Promotion of practices for the conservation, management and supply of drinking water adapted to projected climate change scenarios

In 2010, ~25 of Haiti's watersheds were degraded by deforestation, largely driven by increasing population growth, agricultural expansion and fuelwood harvesting. This degradation has resulted in increased surface water runoff and reduced water infiltration into soils, particularly during extreme rainfall events. Consequently, the rate at which aquifers are recharged has been adversely impacted, compromising freshwater sources. These conditions have been exacerbated under climate change through an increase in the intensity of rainfall events, as well as increased rainfall variability and drought frequency. Resultantly, current and projected climate change impacts on Haiti's natural resources exacerbates communities' vulnerability to the disruption of freshwater resources because of their direct dependence on these sources for their household water supply. These communities are prevented from sufficiently adapting their livelihoods to the changing climatic conditions, as a result of not being adequately informed of the climate change impacts on their livelihoods.

Moreover, as a result of nominally enforceable regulations for the monitoring and management of land use within the drainage and recharge zones in Haiti's South-East Department, the land surrounding water sources is often degraded, which compromises aquifer recharge and subsequent water supply — particularly during drought periods. This is exacerbated by the impacts of more intense and frequent extreme rainfall events that are projected to occur under future climate change. These extreme rainfall events result in severe flooding, damaging water supply systems and sanitation infrastructure, which ultimately compromises communities' water quality and health. Additionally, water sources are often polluted by fertilisers and pesticides — as a result of agriculture-related activities occurring along watersheds — which further compromises water quality. Furthermore, local water distribution networks are poorly maintained because of limited financial resources, resulting in additional disruption to water supply to the relevant communities. Water supply is further impacted by overuse as consumption is not tracked and there is a limited willingness to pay for water under existing tariff systems in some communities because of conflict around the exact ownership of local resources. In addition to these challenges, no water pricing systems have yet been established in other water distribution networks in the South-East Department.

Component 3 will facilitate the use of LDCF resources to protect water sources and aquifer recharge zones through the conservation of these zones and the implementation of reforestation and agroforestry within the South-East Department's watersheds and eight river basins, resulting in: i) increased water availability for communities by improving water infiltration into soils; and ii) improved soil conservation and land management surrounding these watersheds (disrupting **IP 1**). This will support local communities whose livelihoods depend primarily on agricultural production. In addition, under Component 3 physical measures such as gabions and percolation tanks will be constructed to reduce surface water runoff and increase water infiltration into soils (disrupting **IP 1**), thereby improving aquifer recharge. Additionally, rainwater harvesting systems — such as rooftop water capture structures and cisterns — will be installed to capture and store water (disrupting **IP 2**), thereby reducing community members' reliance on groundwater resources and rivers, particularly during extended drought periods.

Moreover, frameworks for financial plans for O&M within will be developed for targeted water distribution networks — accompanied by awareness-raising and advocacy programmes — to improve water efficiency and distribution. Finally, LDCF resources under this component will be used to develop and implement a programme

for the treatment of water supply to improve the quality of drinking water and reduce health risks in the target communities (disrupting **IP 3**).

Component 3 will directly address:

- Barrier 5 — by increasing groundwater levels through implementing on-the-ground (agroforestry) and engineered (gabions, contour bunds etc) water-saving measures, ensuring more resilient water supply under future climate change conditions. The potential for unsustainable consumption levels under future scarcity scenarios will be reduced through metering systems, while availability of higher quality drinking water will be ensured through treatment programmes. Additionally, unsustainable land management practices (such as deforestation for charcoal production) will be reduced through EbA approaches that will promote more sustainable livelihoods for communities who depend on agricultural production.

Assumptions underlying the identified solutions

Several assumptions will need to be met for the proposed project's interventions to be sustainable and successful in the long term. These assumptions are outlined below.

- The baseline projects and initiatives that the proposed project will build on and complement will address baseline drivers to ecosystem degradation and vulnerability to extreme climate events.
- Through the project's capacity development, awareness raising and climate risk-informed planning outputs, human resources trained and institutional knowledge generated under the project will be retained in the targeted institutions and communities over the long term — ultimately upscaling climate-resilient water resource management in Haiti.
- Policies and plans developed by the project will be integrated into relevant government agencies at all levels, and national political commitment and support for the development of project approaches will remain very high.
- Communities and local organisations, particularly women, will be empowered through decentralised development of knowledge skills, roles and responsibilities. Accordingly, stakeholders will be incentivised to implement climate-resilient land-use and water management plans developed by the project, strengthening the impact of project interventions at all scales.
- The proposed project's exit strategy will ensure that state and non-state actors at all levels are incentivised to continue implementing and maintaining climate-resilient water resource management and adaptation solutions beyond the project's lifespan.

Alignment with GEF focal areas

The abovementioned interventions to be developed under the proposed project will contribute to two GEF-7 climate change adaptation focal area objectives, specifically: i) CCA-1 — reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation; and ii) CCA-2 — mainstream climate change adaptation and resilience for systemic impact. Specific project contributions to these focal area elements are described below.

CCA-1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation

By equipping communities with technologies such as water consumption monitoring systems (Output 3.1.4), Outcome 3.1 will increase the resilience of community water resources and infrastructure to climate change by

tracking and managing demand under future scarcity scenarios. In addition, Outcome 3.1 supports this focal area objective by using physical structures and agroforestry to protect and rehabilitate water sources and recharge zones (Output 3.1.1 and Output 3.1.2) as well as by installing household rooftop water harvesting systems (Output 3.1.3). These locally innovative and appropriate technologies for CCA will ultimately enhance community access to drinking water.

CCA-2: Mainstream climate change adaptation and resilience for systemic impact

The proposed project will contribute to mainstreaming CCA and resilience by and developing new water sector-related knowledge and information management systems (Output 1.1.2), as well as using existing environmental information managed by the National Observatory for Environment Quality and Vulnerability (ONQEV) and the National Service for Water Resource (SNRE) to strengthen regulatory and policy mechanisms focussing on climate change impacts on drinking water supply. For Outcome 1.1, this will involve adequate assessments to inform communities and the Government of Haiti (GoH) on water management adaptation strategies (Output 1.1.1 and Output 1.1.3), institutional training programmes (Output 1.1.4) and technical studies regarding adaptation management options as well as groundwater resource inventories (Output 1.1.5 and Output 1.1.6). Additionally, participatory vulnerability assessments will be developed and carried out in the target communities (Outputs 1.2.1 and 1.2.2) — informing water resource modelling that will ultimately allow communities to better plan and respond to the impacts of climate change on their drinking water supply.

Moreover, CCA and resilience will be mainstreamed under Outcome 2.1 through the adjustment of regulatory instruments (Output 2.1.1), the development of plans through Water Supply and Sanitation Committees (Output 2.1.2), and the development of frameworks for improved intra-organisational coordination. In addition, under Outcome 2.2 the technical capacities of priority institutional stakeholders regarding water resource management will be strengthened through targeted training programmes and provision of necessary equipment (Output 2.2.1 and Output 2.2.2). This will strengthen the enabling environment at institutional and technical levels necessary for achieving climate resilience in the water sector.

IV. RESULTS AND PARTNERSHIPS

Expected Results:

The overall objective of the proposed project is to strengthen the resilience of vulnerable rural and peri-urban communities in the South-East (Sud-Est) Department of Haiti against projected impacts of climate change on drinking water availability and access. This will be achieved through three interrelated project components that will be implemented at the national, regional and local scales in Haiti, including: i) improving understanding and awareness of the water sector vulnerability to climate change; ii) strengthening of the regulatory, policy and institutional capacity framework at national, regional, and local levels for the effective management of drinking water under climate change conditions; and iii) identifying and promoting practices for the conservation, management and supply of drinking water adapted to predicted climate change scenarios. Additionally, Ecosystem-based Adaptations (EbA) interventions will be implemented in the South-East Department of Haiti, which will be used as a pilot to collect best practices for dissemination to other departments in the country. Further details on these project components are provided below.

Component 1. Improved understanding and awareness of the water sector vulnerability to climate change

Outcome 1.1: Improved awareness raising and knowledge and information management systems for the water sector to plan and respond to the impacts of climate change.

This Outcome will focus on addressing ‘Barrier 1: Effectiveness and sustainability of investments in the water sector is limited by inadequate knowledge at national and local levels with regards to the impacts of climate change’. Currently, there is limited knowledge and understanding of how projected changes in climatic conditions will affect the availability of drinking water in Haiti. This remains a challenge despite the efforts of Haiti’s national

institutions, such as the National Observatory on Quality of Environment and Vulnerability (ONQEV) and the National Service for Water Resources (SNRE) to generate knowledge and information. In order to overcome this challenge, interventions under this Outcome will include *inter alia* i) determining the implications of different climate change scenarios on the availability of water at a national level; ii) informing communities and the GoH on water management adaptation strategies and climate-resilient water supply by means of a continuous information- and knowledge-generation system; and iii) performing cost-benefit analyses of different adaptation strategies developed as per the different predicted climate change scenarios identified. The abovementioned interventions will lead to the enhancement of Haiti's government institutions' understanding of the impacts of climate change and the subsequent vulnerability of Haiti's water sector to these impacts.

Further, there is currently limited information on the quantity, quality and spatial extent of water availability in the country. While the abovementioned initiatives will largely address the generation and management of information, the capacity for analysing, interpreting and applying the climate risk information as a support to effective evidence-based decision-making remains limited. In response, interventions under this Outcome also include i) training programmes for regional and national institutions on the extent of climate change impacts on freshwater availability; ii) an inventory and quality characterisation of groundwater aquifers in the target area carried out by OREPA Sud; as well as iii) scientific and technical studies on the impacts of climate change and options for adaptation management in the target area conducted. The latter interventions will facilitate an improved understanding of climate change which in turn will promote science- and evidence-based decision-making and governance of the water sector — specifically among institutions involved in the management of water and other natural resources such as DINEPA and OREPA Sud — to increase the resilience of both Haiti's vulnerable population and its water resources to the current and projected impacts of climate change. Implementation of the interventions under Outcome 1.1 will be underpinned by capacity building to improve these institutions' technical capacity to analyse, interpret and apply climate risk information, thereby enhancing the sustainable and adaptive management of Haiti's natural resources. Each output and related activities under Outcome 1.1 is detailed below and will be implemented at the national, regional and local scales.

Output 1.1.1: Assessments, with gender-specific criteria, carried out at the national level to demonstrate the implications of different climate change scenarios on the availability of water.

Despite the efforts of Haiti's national institutions, such as the National Observatory on Quality of Environment and Vulnerability (ONQEV) and the National Service for Water Resources (SNRE), knowledge and understanding at both national and local levels of how future climate changes will affect the availability of drinking water in Haiti is limited — particularly with regards to quantity, quality, and distribution of available water sources. This has resulted in minimal awareness of and knowledge on effective water management adaptation strategies to ensure resilient water supplies against climate changes. Under this output, LDCF resources will firstly be used to develop and convene two series of national-level training workshops for selected Government of Haiti (GoH) institutions⁵³ and officials to increase their technical capacity to conduct gender-responsive situational analyses of Haiti's water sector. The training workshops⁵⁴ will include representatives from the relevant institutions — to ensure and maximise cross-sectoral knowledge sharing. The workshops will equip government officials with the necessary tools to conduct an accurate assessment — including effective analyses and a comprehensive interpretation — of the current state of Haiti's water sector.

Following this capacity building, national hydrogeological and hydrometeorological data will be collected and analysed by these institutions — using existing environmental information managed by ONQEV and SNRE — to better understand the descriptive parameters of the major watersheds in Haiti. This information includes data on

⁵³Including National Directorate of Water Supply and Sanitation (DINEPA), Ministry of Environment (MoE), Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), Ministry of Planning and External Cooperation (MPCE), Ministry of Public Works, Transportation and Communication (MTPTC), National Observatory for Quality of Environment and Vulnerability (ONQEV), National Service for Water Resource (SNRE) and Ministry of Women's Conditions and Rights of Haiti.

⁵⁴ These workshops will be conducted within the third and fourth quarters of the first year of project implementation.

the surface area, runoff coefficient and length of hydraulic paths, as well as how atmospheric water systems affect the watersheds — particularly with regards to water supply and flood control. Complementary to these assessments, downscaled climate change scenario modelling will be conducted to visually demonstrate the current and projected impacts of climate change on water availability in Haiti. Using the respective outputs from the water sector situational analyses, hydrogeological and hydrometeorological data analyses, and the climate change scenario modelling, a series of engagement and sensitisation meetings will be convened to ensure the adaptation strategies to be implemented under the proposed LDCF project are gender-responsive and situationally relevant across the varying landscapes in Haiti.

Output 1.1.1 will be implemented by Helvetas in collaboration with the MoE with inputs from international and national specialists including an international Water Resources Advisor, the project's SES Specialist, a local Water Resources Advisor, and a local hydrogeologist. Indicative activities under this output include:

1. Activity 1.1.1.1: Develop and dispense a training programme to equip relevant national government institutions⁵⁵ with the necessary skills and knowledge to conduct situational analyses to generate gender-disaggregated and contextually relevant data on Haiti's the water sector. Two five-day workshops will be held for the purposes of this activity.
2. Activity 1.1.1.2: Relevant national government institutions (refer to footnote 103) to conduct situationally appropriate and gender-responsive analyses of Haiti's water sector.
3. Activity 1.1.1.3: Relevant national government institutions to collect and analyse hydrogeological and hydrometeorological data (using ONQEV and SNRE) and to conduct downscaled climate change scenario modelling which demonstrate the impacts of climate change on Haiti's water resources.
4. Activity 1.1.1.4: Five-day engagement and sensitisation meeting facilitated between relevant government institutions to ensure gender-responsiveness and situational relevance of climate-resilient adaptation strategies to be implemented under Components 2 and 3.

Output 1.1.2: A continuous information- and knowledge-generation and dissemination system implemented to inform communities and the GoH on water management adaptation strategies and climate-resilient water supply.

Following the generation of climate-related data under Output 1.1.1 and in line with Haiti's Nationally Determined Contributions (NDCs, 2015)⁵⁶— which prioritises information dissemination and awareness raising to educate its population on climate change impacts — LDCF resources under this output focusses on establishing and implementing an information- and knowledge-generation and dissemination system to inform communities, as well as policy- and decision-makers, on climate-resilient adaptation strategies for improved water management. The establishment of this system will involve extensive data collection, particularly related to, *inter alia*: i) global climate change and the associated hazards and impacts; ii) climate change impacts on Haiti, particularly on water availability; iii) available freshwater resources in Haiti; iv) non-climatic drivers of reduced water availability; v) integrated water resources management (IWRM); and iv) appropriate climate change adaptation strategies — as identified under Output 1.1.1. The data collected will also serve to inform the role of climate change in social conflicts over natural resources in Haiti, particularly water — these data can then subsequently be used to inform other water-related projects, such as the United Nations Peacebuilding Fund (PBF)⁵⁷ initiatives.

Through the information- and knowledge-generation system, distinct knowledge and information products will be designed for both local communities and government institutions, to ensure the information provided is contextually relevant and easily understandable to the different end-users. These knowledge and information products will be housed under the National Environmental Information System currently implemented and managed by ONQEV under MoE. To support the effectiveness of this information- and knowledge-generation system, a three-day training workshop will be convened for relevant technical officers from ONQEV on managing

⁵⁵ See footnote 52.

⁵⁶ Ministry of Environment. Contribution Prévue Déterminée au Niveau National (2015) Available at: http://www.un-gsp.org/sites/default/files/documents/cpdn_republique_dhaiti.pdf

⁵⁷ Trust Fund Factsheet – Peacebuilding fund. Available at <http://mptf.undp.org/factsheet/fund/pb000>

these systems, as well as on different dissemination tools that will ensure equitable access and improved awareness across Haiti.

Output 1.1.2 will be implemented by Helvetas in collaboration with the MoE with inputs from international and national specialists including an international Water Resources Advisor, an international Data Scientist, the project's SES Specialist, and the project's Community Liaison Specialist. Indicative activities under this output include:

1. Activity 1.1.2.1: Compile technical gender-disaggregated and contextually relevant data related to, *inter alia*: i) global climate change and the associated hazards and impacts; ii) climate change impacts on Haiti, particularly on water availability; iii) currently available freshwater resources in Haiti; iv) drivers of reduced water availability; and v) IWRM
2. Activity 1.1.2.2: Design contextually relevant knowledge and information products appropriate for both community and government stakeholders.
3. Activity 1.1.2.3: Three-day training workshop for ONQEV technical officers on managing information- and knowledge-generation systems.

Output 1.1.3: Cost-benefit analyses of different adaptation strategies developed as per the predicted climate change scenarios identified under Output 1.1.1.

Considering the limited climate change-related technical capacities, as well as the compounded impact of limited financial resources in the GoH, the country is not adequately capacitated to conduct analyses on the most appropriate adaptation strategies to be implemented to build communities' resilience. Consequently, it is fundamental to prioritise expenditure that will maximise situationally relevant benefits to targeted communities. To this end, LDCF resources will be used to assist the Ministry of Environment (MoE) in benefiting of a detailed cost-benefit analysis (CBA) on the adaptation strategies to be implemented by the proposed project to enable the contextual prioritisation of interventions and investments geared towards building the resilience of Haiti's population while maintaining support for climate-resilient development planning. Training workshops will be convened for representatives from the relevant government institutions⁵⁸ in each of Haiti's 10 departments to equip them with the necessary skills and knowledge to interpret the CBA results to promote the scalability of evidence-based decision-making related to other development priorities across multiple sectors in Haiti. To optimise the learning experience and ensure that the content of the training workshops is relevant to the contexts of the representative government institutions, the training cohorts will comprise representative from the MoE, National Directorate for Drinking Water and Sanitation (DINEPA), Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), Ministry of Planning and External Cooperation (MPCE) and Ministry of Public Works, Transportation and Communication (MTPTC). Finally, recommendations will be made on the feasibility and contextual relevance adaptation strategies within different socioeconomic contexts in Haiti to inform decision-making related to water resources management in each of the departments. In conjunction with the technical studies conducted under Output 1.1.6 (below), the CBAs will facilitate improved governance and decision-making related to the management of water and other natural resources.

Output 1.1.3 will be implemented by Helvetas in collaboration with the MoE, with inputs from international and national specialists including a local Water Resources Advisor and the project's Community Liaison Specialist.

Indicative activities under this output include:

1. Activity 1.1.3.1: Conduct a gender-responsive and contextually appropriate cost-benefit analysis (CBA) on adaptation strategies to be implemented by the proposed project.
2. Activity 1.1.3.2: host a five-day training workshop in each of Haiti's 10 departments for decision-makers in each department to equip representatives from relevant government institutions with the necessary skills and knowledge to interpret the CBA results.

⁵⁸ Including, *inter alia*, National Directorate of Water Supply and Sanitation (DINEPA), Ministry of Environment (MoE), Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), Ministry of Planning and External Cooperation (MPCE) and Ministry of Public Works, Transportation and Communication (MTPTC).

3. Activity 1.1.3.3: Develop recommendations for feasible adaptation strategies within different socioeconomic contexts in Haiti to inform decision-making related to water resources management.

Output 1.1.4: Training programmes implemented for regional and national institutions on the extent of climate change impacts on freshwater availability — including methodologies and application of vulnerability assessments (as developed under Output 1.2.1 below) and adaptation solutions.

Despite the commitment of the GoH to address the impacts of climate change on Haiti, notably via policies and plans — such as *inter alia*: i) the National Policy to Combat Climate Change (PNCC, 2019); ii) the National Adaptation Plan of Action (NAPA, 2006; 2017); the Nationally Determined Contribution (NDC, 2015); and iii) the First and Second National Communications (INC and SNC, 2001; 2013) — knowledge and understanding within national and regional government institutions of climate change impacts on Haiti's freshwater resources remains limited. In addition to enhancing climate change awareness (Output 1.1.3), LDCF resources under the proposed project will be directed towards the development of a training programme. This programme will be implemented for regional and national institutions within Haiti — specifically DINEPA, MoE, MARNDR and their regional entities within the South-East Department of Haiti — to be equipped with the necessary knowledge and skills for: (i) improved understanding of climate change impacts on Haiti's freshwater availability; (ii) developing methodologies to design contextually appropriate vulnerability assessments; and (iii) identifying locally-relevant adaptation solutions. The training programme will incorporate the findings of Outputs 1.1.1, 1.1.3, as well as 1.1.6 to ensure a contextualised understanding of the vulnerability of Haiti's water sector to climate change impacts and the appropriate adaptation options to enhance the sector's climate resilience.

A training of trainers (ToT) approach will be used to enable the representatives from DINEPA, MoE and MARNDR to subsequently conduct three-day workshops to disseminate knowledge and skills — acquired through the ToT programme — to institutions at a local level, such as Water Supply and Sanitation Committees (CAEPAs) and Technical Operation Centres (CTEs) in Haiti's South-East Department. This local focus will, in turn, support the development and application of methodologies for the vulnerability assessments (VA) developed and conducted under Outcome 1.2. In addition, by establishing a ToT programmatic approach across the different levels of Haiti's government institutions, the project aligns with and supports the objectives of the Decentralisation Decree, which aims to empower local governments and designate them with the authority to adequately address specific environmental concerns.

Output 1.1.4 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with inputs from an international Water Resources Advisor. Indicative activities under this output include:

1. Activity 1.1.4.1: Develop and dispense a ToT programme for regional and national institutions.
2. Activity 1.1.4.2: Host three five-day local-level workshops led by representatives from MoE, DINEPA and MARNDR trained via the ToT programme to disseminate the content of the ToT programme to CAEPAs and CTEs throughout the South-East Department of Haiti.

Output 1.1.5: Inventory and quality characterisation of groundwater aquifers in the target area carried out by OREPA Sud.

Limited human, operational and financial capacity have compromised certain functions of the DINEPA and OREPAs — including OREPA Sud — such as conducting regular and extensive assessments of available groundwater resources in Haiti. Consequently, there is limited knowledge on the availability and characteristics of groundwater resources in the South-East Department, as well as on the impacts of climate change on these resources. Under this output, LDCF resources will be channelled towards assisting the DINEPA and OREPA Sud in conducting an inventory of the groundwater resources in the South-East Department of Haiti — building on the already-existing inventory maintained by the MoE. This stocktake will involve extensive data collection on the descriptive

parameters of the groundwater resources, including their specific storage capacity, yield, transmissivity⁵⁹ and offtake volumes, where necessary. Assessments based on pollution indices of these groundwater resources will also be undertaken to determine the water quality. In addition, an inventory of the plant and forest cover — including endangered species — within the catchment areas of these resources will be conducted to better evaluate the extent of degradation within these zones. In combination, these activities will enable accurate identification of groundwater resources that are highly vulnerable to shifting rainfall patterns, offtake volumes as well as anthropogenic-driven degradation. These activities will also enable the identification of appropriate adaptation strategies for highly vulnerable water resources, as well as suitable measures for establishing water distribution systems.

Output 1.1.5 will be implemented by Helvetas in collaboration with the MoE and DINEPA inputs from a local hydrologist and a local biodiversity expert. Indicative activities under this output include:

1. Activity 1.1.5.1: Establish an inventory on available groundwater resources and aquifer recharge zones in the South-East Department of Haiti.
2. Activity 1.1.5.2: Establish an inventory on the plant and forest cover of the catchment areas in the South-East Department of Haiti.
3. Activity 1.1.5.3: Conduct groundwater assessments to determine water quality and to evaluate the extent of degradation of the catchment zones. Ten water testing kits as well as two laptops pre-loaded with necessary software to the water test kits will be acquired to conduct the water quality analyses.

Output 1.1.6: Scientific and technical studies on the impacts of climate change and options for adaptation management in the target area conducted, informing local decision-making on climate-resilient water supply.

Compounding the limited capacities of water regulatory bodies in Haiti to function adequately (such as DINEPA and OREPA Sud), limited knowledge on the impacts of climate change on water resources in the South-East Department has inhibited the identification of appropriate climate change adaptation (CCA) interventions to reduce the vulnerability of water supply and distribution to climate hazards, as well as to facilitate improved adaptive management of water sources. To this end, LDCF resources will be used to conduct science-based technical studies to assess the contextual suitability of the adaptation strategies to be implemented under Components 2 and 3 of the proposed project. This will allow to effectively build the climate resilience of the South-East Department in terms of water availability. To ensure that the studies are context-specific and comprehensive, appropriate methodologies, based on the results from the interventions implemented under Outputs 1.1.1, 1.1.3 and 1.1.4, for conducting these studies will be developed and validated by relevant government institutions involved in the management of water and other natural resources. While these studies have a specific focus on the South-East Department of Haiti, they will provide technical recommendations on ecologically, socially, and contextually appropriate adaptation strategies for implementation in other regions of Haiti. The methodologies and recommendations developed under this output will contribute to the information- and knowledge-management system established under Output 1.1.2 to inform and promote replication of evidence-based multi-sectoral decision-making.

Output 1.1.6 will be implemented by Helvetas in collaboration with the MoE and DINEPA with inputs from a local hydrologist supported by the project's SES Specialist. Indicative activities under this output include:

1. Activity 1.1.6.1: Develop methodologies using results from Outputs 1.1.1, 1.1.3 and 1.1.4 for conducting scientific and technical studies to determine fine-scale climate change impacts on water availability in the South-East Department of Haiti.
2. Activity 1.1.6.2: Conduct scientific and technical studies to determine fine-scale climate change impacts on water availability in the South-East Department of Haiti.
3. Activity 1.1.6.3: Develop technical recommendations on the adaptation strategies to be implemented under the proposed project within the context of Haiti's South-East Department.

⁵⁹ This refers to the degree to which groundwater can flow through the width of the aquifer in which it lies.

Outcome 1.2: Target communities⁶⁰ prepared to effectively plan responses to climate change impacts on their access to drinking water.

Similar to Outcome 1.1, Outcome 1.2 will focus on addressing challenges listed under Barriers 1 and 4, but on a local scale. While community-based organisations currently operate across Haiti, these institutions often have limited technical and organisational capacity, as well as constrained social and institutional sustainability. These capacity constraints limit these organisations' ability to resolve water-related conflicts or ensure that existing or proposed norms of water or natural resource management are applied to ensure the sustainability and resilience of water supply. To overcome these barriers, Outcome 1.2 will develop methodologies and instruments for community-level vulnerability assessments (VAs) of drinking water supply, followed by conducting climate change VAs in the project's target communities. Results from the VAs will be compiled and analysed to increase the awareness of local communities of climate change, providing them with the foundational tools to improve their understanding of their climate vulnerability while assisting them to effectively enhance their climate resilience. Further, under this outcome, integrated water resource modelling studies will be conducted at a national scale to demonstrate the projected long-term impacts of climate change on biodiversity, ecosystems and urban systems, as well as the relationships between these aspects and drinking water availability at the local landscape level. The information obtained from these modelling studies will thereby contribute to decrease the paucity of knowledge and limited understanding of the effects of projected climatic changes on the availability of drinking water in Haiti. Moreover, both the information obtained from the VAs and the modelling exercises will be used for adequately implementing interventions under Components 2 and 3, such as agroforestry interventions and the installation of rooftop water-harvesting systems. Each output and related activities under Outcome 1.2 is detailed below.

Output 1.2.1: Methodologies and instruments developed for community-level vulnerability assessments (VAs) of drinking water supply.

The limited capacities of the DINEPA and OREPA Sud have not allowed for reliable assessments of the current and future needs of the communities in the South-East Department, which subsequently hinders the accurate identification, quantification and prioritisation of vulnerabilities in terms of local drinking water supply. Using LDCF resources, methodologies will be developed for conducting assessments to analyse the vulnerability of the target communities to the climate change impacts on drinking water availability. Based on the ToT programmes conducted under Output 1.1.4, training programmes and workshops will be convened by national- and regional-level institutions for local-level institutions in target communities — such as CAEPAs, CTEs and Community-Based Organisations (CBOs). These workshops will focus on developing locally appropriate and gender-responsive methodologies for conducting VAs to account for the differentiated gender, cultural and situational vulnerabilities of communities within the South-East Department. To ensure the effectiveness of these methodologies, they will incorporate the findings of the situational analyses of Haiti's water sector and of the climate change scenario modelling conducted under Output 1.1.1. In addition, the methodology development will involve identifying stakeholder engagement modalities that are gender responsive, to facilitate community buy-in, as well as equitable participation and representation of women and men in the assessments' findings.

Output 1.2.1 will be implemented by Helvetas in collaboration with the MoE and DINEPA with support from MARNDNR representatives. Indicative activities under this output include:

1. Activity 1.2.1.1: Convene one five-day workshop to enable local institutions (CAEPAs, CTEs and CBOs) to develop contextually appropriate and gender-responsive methodologies for conducting climate change VAs in the project's target communities (refer to footnote 107). Appropriate gender-responsive community engagement modalities will also be identified during the workshops to ensure equitable participation and representation of women and men in the assessments' findings.

⁶⁰ This refers to communities reliant on the Cresson, Bodarie, Préchet, Cascade Pichon, and K-Royer Drinking Water Supply Systems (SAEPs).

2. Activity 1.2.1.2: Develop appropriate gender-responsive methodologies for conducting community-level climate change VAs in the project's target communities.

Output 1.2.2: Participatory climate change vulnerability assessments (VAs) carried out in the project's target communities.

Following the development of methodologies and instruments for community-level vulnerability assessments (VAs) of drinking water supply (under Output 1.2.1), LDCF resources will be used under Output 1.2.2 to conduct community-level VAs in the target communities. The VAs will be conducted by representatives of relevant local institutions (trained under Output 1.2.1) in the South-East Department of Haiti, and will involve: i) the identification and analysis of climate hazards experienced in the target communities; ii) analyses of critical facilities⁶¹, including their vulnerability to climate hazards as well as their proximity to these communities; iii) mapping and analyses of the target communities' vulnerabilities to climate hazards; iv) an assessment of the primary economic sectors in these communities and the vulnerability of their operations to climate hazards; v) analyses of the natural environment and ecosystems and their vulnerabilities to climate hazards; and vi) mapping contextually appropriate adaptation options across the target communities.

Stakeholder workshops will be held to obtain the necessary community inputs and maximise community engagement, particularly with regards to adequately assessing the climate change impacts on community members. Gender-responsive stakeholder consultation workshops — including with CBOs and representatives from local institutions — will be convened to facilitate discussions with these stakeholders, enabling them to document their observed environmental, economic, and social changes over time. Moreover, surveys with gender-specific criteria will be conducted to provide for granular details on communities' climate vulnerability and to collect the required quantitative data to accurately map community vulnerability. These surveys will inform the subsequent VA reports that will be developed in collaboration with local government institutions and agencies, CBOs, community representatives and local authorities to facilitate community buy-in and ownership. Community engagements promoted during the development of these VAs will also support the development of community-level strategic and operational plans to be developed under Output 2.3.1.

Output 1.2.2 will be implemented by Helvetas in collaboration with the MoE and DINEPA with support from representatives of local organisations (CAEPAs, CTEs and CBOs) and the project's SES Specialist. Indicative activities under this output include:

1. Activity 1.2.2.1: Conduct series of workshops for gender-responsive stakeholder consultations and community-level surveys in the project's target communities. Five five-day workshops will be held for the purpose of this activity.
2. Activity 1.2.2.2: Conduct gender-responsive and contextually-relevant VAs, informed by findings from Activity 1.2.2.1.

Output 1.2.3: Integrated water resource modelling conducted to demonstrate the projected long-term impacts of climate change on biodiversity, ecosystems, and urban systems, as well as the relationships between these aspects and drinking water availability at the landscape level.

The current limited technical and financial capacities among relevant water regulatory bodies in Haiti has led to minimal data collection as well as monitoring and management of natural resources. Consequently, scientific understanding of current and projected climate change impacts on water availability in Haiti is lacking. To this end, LDCF resources will be used to conduct surveys to collect data on the current water uses and volumes in the South-East Department of Haiti. Based on this data, as well as on the inventory and assessments of groundwater resources conducted under Output 1.1.5, integrated water resource management models will be developed to analyse the projected water demands of the South-East Department and the associated implications for the

⁶¹ Critical facilities in this context refers to hospitals, clinics, fire and police stations and similar service facilities.

department's available water resources. Additional modelling will be conducted to further demonstrate the impacts of climate change on natural ecosystems and urban systems, as well as the relationship between these two systems and their impacts on water availability. The models will also assess the adaptation strategies to be implemented under the proposed LDCF project, in a locally contextual manner, to demonstrate which adaptation solutions — considering ecological, social, and economic variables — will provide optimal measures to improve climate-resilient water supply. These activities will inform the development of technical recommendations on an integrated water resources management (IWRM) approach to support adaptive and sustainable water governance and decision-making.

Output 1.2.3 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from international and local experts including an international Climate Change Modelling Specialist and a local Water Resources Advisor, as well as representatives of local organisations (CAEPAs, CTEs and CBOs). Indicative activities under this output include:

1. Activity 1.2.3.1: Conduct surveys to collect data on water usage volumes in the South-East Department of Haiti.
2. Activity 1.2.3.2: Conduct integrated climate change water resource modelling on long-term water availability and demand in the South-East Department of Haiti. The modelling exercise will also project long-term impacts of climate change on biodiversity, ecosystems, and urban systems.
3. Activity 1.2.3.3: Develop technical recommendation on IWRM approaches for the South-East Department of Haiti.

Component 2. Strengthening of the regulatory, policy and institutional capacity framework at national, regional, and local levels for the effective management of drinking water under climate change conditions

Outcome 2.1: Key regulatory and policy instruments adjusted to consider the implications of climate change for drinking water supply and promote adaptive community-based management, knowledge generation and dissemination; and monitoring.

Project Outcome 2.1 aims to address Barriers 1–4, to enable effective and sustainable management of drinking water supply at Haiti's national, regional and local levels under current and projected climate conditions. This will primarily be achieved by promoting an adaptive management approach — based on scientific evidence garnered under Outcomes 1.1 and 1.2. Currently, the sustained relevance of existing GoH policies are threatened because they are unable to ensure the consideration of climate change impacts in their formulation, planning and execution. In response, the interventions under Outcome 2.1 will: i) establish an enabling environment to mainstream climate change and gender considerations into relevant national and local policy instruments and management plans (specifically DINEPA and OREPA Sud); ii) strengthen technical capacities of relevant government institutions for sustainable and integrated water resources management (IWRM); and iii) establish appropriate mechanisms to enable community-based adaptation planning and sustainable management of water resources. These interventions will ensure national policies and plans account for the evolving local contextual needs and conditions resulting from climate change, particularly affecting water supply — by enabling standardised provisions and approval criteria for establishing and managing water distribution networks — resulting in the sustainability, effectiveness and locally appropriateness of GoH plans and policies.

The sustainability of project interventions will further be secured by their adaptive management resulting from implementing the project's monitoring and evaluation (M&E) system, to capture and disseminate lessons learned during project implementation for use in upscaling of interventions. Finally, Outcome 2.1 will facilitate improved coordination among institutions involved in the management of drinking water supply, to effectively and efficiently address climate change impacts in Haiti. The specific outcomes and associated outputs designed to ensure the achievement of Component 2's objectives are detailed below.

Output 2.1.1: Two regulatory instruments adjusted to account for the evolving contextual needs and conditions resulting from climate change.

There has from efforts from the GoH to mainstream climate change considerations into planning and long-term development, notably with the Strategic Development Plan of Haiti (PSDH, 2012) and the National Policy to Combat Climate Change (PNCC, 2019). The PSDH (2012) and the PNCC (2019)⁶² aim to *inter alia*, promote improved governance with respect to integrating climate change in planning processes at different administrative scales and in the national budget. Despite these efforts, consideration of climate change within regulatory frameworks related to the management of drinking water in Haiti has been limited. Resultantly, the impacts of climate change currently have minimal influence on the provisions made for the establishment and management of watersheds and water supply systems, as well as on identifying priority actions for natural resource-dependent sectors. LDCF funds under this output will be used to facilitate revisions of the frameworks of two regulatory instruments — DINEPA and OREPA Sud — relating to the management of drinking water supply in Haiti to consider the impacts of climate change on water resources, as well as the differentiated impacts of water availability on men and women. Mainstreaming climate change and gender considerations into these frameworks will enable the development of standardised provisions and approval criteria for establishing and managing water distribution networks and priorities for action in different sectors. Existing frameworks will be reviewed to identify relevant entry points to effectively mainstream climate change and gender considerations into the framework. Recommendations on the identified entry points and appropriate revisions will be developed in alignment with international best practices. These recommendations will include, *inter alia*, guidelines relating to the monitoring, management, and conservation of ecosystems — particularly those surrounding catchment areas — as well as revisions on planning and budgeting processes. Additionally, criteria matrices will be developed as a decision-making tool for DINEPA and its regional entities to ensure standardised approval of and provision for the establishment and management of water distribution systems.

Output 2.1.1 will be implemented by Helvetas in collaboration with the MoE and DINEPA with support and input from an international Environmental Law and Legislation Consultant. Indicative activities under this output include:

1. Activity 2.1.1.1: Conduct gap and reviews assessments of selected regulatory and policy frameworks to identify entry points for climate change and gender mainstreaming, and develop technical recommendations for integrating climate change and gender considerations into abovementioned regulatory and policy frameworks.
2. Activity 2.1.1.2: Develop standardised matrices for DINEPA and its regional entities to guide the identification of appropriate adaptation solutions and prioritisation of investments.
3. Activity 2.1.1.3: Two three-day workshops with representatives from DINEPA and its regional entities to validate technical recommendations and to revise frameworks to include climate change and gender considerations.

Output 2.1.2: Strategic plans revised by sub-national regulatory institutions to prioritise adaptation interventions based on evaluations of climate change impacts on water supply vulnerability.

Similar to the revisions to the frameworks of DINEPA and OREPA Sud Output 2.1.1, LDCF resources under this output will be channelled towards revising strategic plans previously developed by DINEPA and its regional entities to be implemented in the target communities. In particular, the strategic plans will be revised to incorporate the findings of the water sector situational analysis and climate change modelling (Output 1.1.1) as well as the adaptation strategies appraised under Outputs 1.1.3 and 1.1.6. Each strategic plan will be revised based on the scientific and technical findings specific to the target community to ensure they are locally appropriate.

Under this output, UNDP TRAC resources will be used to facilitate the finalization of the ESMF, and the implementation of the project's monitoring and evaluation (M&E) system, so as to capture and disseminate lessons learned during project implementation, thereby enabling the adaptive management of project interventions, as well as ensuring the sustainability of project interventions. The lessons learned as part of this

⁶² The PNCC aims to, *inter alia*, ensure integration of climate change considerations into national, regional and local development planning and budgeting.

M&E plan will feed into the continuous information- and knowledge-generation system implemented under Output 1.1.1 so as to encourage scaling-up of project interventions at national and international scales. Finally, the project's mid-term evaluation (MTE), terminal evaluation (TE), as well as the design of the project's exit strategy will also be done as part of this Output.

Output 2.1.2 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from an international Monitoring and Evaluation (M&E) Expert as well as a local M&E expert. Indicative activities under this output include:

1. Activity 2.1.2.1: Review strategic plans for the South-East Department of Haiti to identify entry points for integrating climate change and gender considerations, as well as findings of analyses conducted under Outputs 1.1.1, 1.1.3 and 1.1.6.
2. Activity 2.1.2.2: Revise abovementioned plans to integrate climate change and gender considerations, as well as findings of analyses conducted under Outputs 1.1.1, 1.1.2 and 1.1.3.
3. Activity 2.1.2.3: Design a local scale monitoring and evaluation (M&E) plan, and to ensure the implementation of the project's M&E plan.
4. Activity 2.1.2.4: Design and conduct project mid-term evaluation (MTE) and terminal evaluation (TE), as well as the exit strategy.

Output 2.1.3: Frameworks and instruments developed and applied for planning and coordination between national, regional, private and community-based organisations.

The management of water and other natural resources, as well as the associated generation and use of information, are divided among several institutions in Haiti, including the Ministry of Environment (MoE), National Directorate for Drinking Water and Sanitation (DINEPA) and the Ministry of Natural Resources and Rural Development (MARNDP). At present, limited coordination on the planning and management of water resources and related information systems exist between the abovementioned institutions. To this end, LDCF resources will be used to improve coordination among institutions involved in the management of drinking water supply. The project will build on existing initiatives implemented by Helvetas through the REGLEAU project⁶³ to strengthen existing coordination mechanisms within local governance structures in the Baint, La Vallée de Jacmel, Jacmel, and Marigot communities in the South-East Department. Specifically, the project will upscale these interventions to other communities in the department and establish coordination mechanisms among national, regional, and local institutions — including NGOs and CBOs — involved in the management of drinking water. This aligns with the objectives of the PNCC, which include encouraging coordination between relevant institutions in efforts to address Haiti's vulnerability to climate change. These coordination mechanisms will be institutionalised by developing an implementable framework — within DINEPA's mandate — to promote effective multi-sectoral water-related planning and management.

Output 2.1.3 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from an international Environmental Law and Legislation Consultant. Indicative activities under this output include:

1. Activity 2.1.3.1: Identify coordination and planning gaps among national, regional, and local government institutions involved in water resource management.
2. Activity 2.1.3.2: Develop a framework to guide the development of institutionalised coordination mechanisms and mechanisms for national-regional and regional-local coordination and planning.
3. Activity 2.1.3.3: Convene three-day training workshop — for representatives of DINEPA and its regional entities, CAEPAs, CTEs, CBOs and NGOs — to develop an implementable framework on national-regional and regional-local coordination and planning mechanisms.

⁶³ Swiss Federal Department of Foreign Affairs. International Cooperation. Projects: Strengthening local governance of water and sanitation in Haiti (REGLEAU, 2016–2022). Available at: <https://www.dfae.admin.ch/countries/haite/fr/home/cooperation-internationale/projets.html/content/dezaprojects/SDC/en/2017/7F09609/phase1?oldPagePath=/content/countries/haite/fr/home/internationale-zusammenarbeit/projekte.html>

Outcome 2.2: Increased capacities in priority institutional stakeholders (DINEPA, OREPA Sud, CAEPAs and CTEs) with regards to the technical aspects of water resource management, territorial land-use planning, as well as management and application of information on water resources and climate change threats.

Outcome 2.2 of the proposed project aims to improve effective and sustainable planning and management for water supply in Haiti's South-East Department, particularly under current and future climate change. This will be achieved by developing technical capacities — following Capacity Needs Assessments (CNAs) — of relevant government institutions on IWRM under Output 2.2.1 to ensure climate-resilient water resource management and sustainable land-use planning by improving data access and management within these institutions. Similar to Output 1.1.4, a Training of Trainers (ToT) approach will be used to provide target communities with continued support to ensure the institutional sustainability of capacity-building initiatives and facilitate the empowerment of local institutions. The ToT programme will also include elements to facilitate the operationalisation of the regulatory body of the water sector of Haiti, the National Institute of Water Resources (INARHY)⁶⁴. This institute's main objective will be to implement the GoH's water management and distribution policies and ensure their effective application to ensure sustainable water supply for Haiti's vulnerable communities.

The abovementioned training programmes will be supported by providing the necessary equipment — such as groundwater metering devices, rainfall gauges and discharge measurement devices — to the relevant government institutions under Output 2.2.2, followed by training on operating this newly acquired equipment to ensure climate data is effectively managed and applied. The specific outcomes and associated outputs designed to ensure the achievement of Outcome 2.2's objectives are detailed below.

Output 2.2.1: Targeted programmes implemented to strengthen technical capacity of relevant institutions to incorporate climate change data into planning and management.

Institutions and organisations at a national, regional and local scale in Haiti involved in water resources management and conservation, as well as in land-use planning and management currently lack the technical capacities to incorporate climate change data into their day-to-day operations, thereby hindering the ability of the Haitian population to adapt and be resilient against the impacts of a changing climate. Contributing to the technical capacity building conducted under the REGLEAU project, Output 2.2.1 of the proposed LDCF project focusses on developing and implementing a training programme on: i) climate-resilient water resource management; ii) sustainable and equitable land-use planning⁶⁵; and iii) management and application of information on water resources and climate change threats for DINEPA, OREPA Sud, and CAEPAs, CTEs, and CBOs in the target communities. To inform the design of the training programme, capacity needs assessments (CNAs) will first be conducted for the relevant institutions.

Similar to Output 1.1.4, the training programme will adopt a Training of Trainers (ToT) approach under which, subsequent to being trained, the national and regional institutions will host training workshops for CAEPAs and CTEs in the target communities. This ToT approach will provide continued support the institutional sustainability of capacity-building initiatives, in addition to promoting the objectives of the 2006 Decentralisation Decree aimed at empowering local institutions. Finally, the ToT programme will also include components to facilitate the operationalisation of the regulatory body of the water sector of Haiti, the National Institute of Water Resources (INARHY), as per the August 2020 Decree establishing the revised aims and objectives of the MoE (see footnote 92).

Output 2.2.1 will be implemented by Helvetas in collaboration with the MoE and DINEPA , with support and input from an international Water and Resources Advisor. Indicative activities under this output include:

⁶⁴ Other government institutions involved in land-use planning — such as the MARNDR and the MPCE — will be consulted during the implementation of this output. More details are available in the Stakeholder Engagement Plan (Annex 8).

⁶⁵ Other government institutions involved in land-use planning — such as the MARNDR and the MPCE — will be consulted during the implementation of this output. More details are available in the Stakeholder Engagement Plan (Annex 8).

1. Activity 2.2.1.1: Conduct technical capacity needs assessments (CNAs) for DINEPA, OREPA Sud, CAEPAs and CTEs on climate-resilient water resource management, sustainable territorial land-use planning, management and application of information on water resources and climate change threats.
2. Activity 2.2.1.2: Develop and implement a ToT programme on climate-resilient water resource management, sustainable territorial land-use planning, management, and application of information on water resources and climate change threats. Three five-day workshops will be held to dispense the ToT programme to DINEPA, OREPA Sud, CAEPAs and CTEs.

Output 2.2.2: Equipment provided to support the efficient application of technical capacity developed by training workshops.

Combined with currently limited capacity of DINEPA, OREPA Sud, CAEPAs, CTEs, and CBOs to mainstream climate change in planning and management of natural resources, the country's minimal financial resources available to invest in the improvement of natural resources monitoring, planning and management also hinder the ability of the Haitian people to adequately adapt to the threats of climate change, notably in terms of drinking water supplies. Consequently, to support the outcomes of training programmes (Outputs 1.1.4 and 2.2.1) implemented for DINEPA, OREPA Sud, as well as the targeted CAEPAs and CTEs, LDCF resources will be used to procure the necessary equipment — such as groundwater metering devices, rainfall gauges and discharge measurement devices — to enable the efficient application of newly acquired technical skills within these institutions, as well as providing training to ensure the effective implementation of technical skills in operating this equipment. Given that several CAEPAs and CTEs experience considerable financial and operational limitations, CAEPAs and CTEs in the target communities will be prioritised with equipment to enable the sustainable monitoring, management, and distribution of water resources within these communities. The procurement of the necessary equipment will be accompanied by training workshops on their appropriate use and maintenance.

Output 2.2.2 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from a local Hydrologist as well as the project's Community Liaison Specialist. Indicative activities under this output include:

1. Activity 2.2.2.1: Procure the equipment required for strengthening technical capacities of relevant government institutions. For the purpose of this activity, groundwater metering devices, discharge measurement devices and rainfall gauges (127 units in total) will be procured. Further, 10 laptops pre-loaded with software compatible with the abovementioned devices and gauges will also be procured.
2. Activity 2.2.2.2: Convene one-day training workshop in each SAEP for CAEPAs and CTEs in the target communities on adequate use of equipment, as necessary.

Outcome 2.3: Target communities equipped with instruments and mechanisms that ensure the sustainable management of water resources and associated infrastructure, as well as specific strategies to target female-headed households.

To address Barriers 1–4, project Outcome 2.3 promotes an adaptive management approach to enable effective and sustainable management of drinking water supply at national, regional and local levels under current and projected climate conditions. This management will primarily be achieved by strengthening technical capacities of relevant government institutions for sustainable and integrated water resources management (IWRM) and establishing appropriate mechanisms to enable community-based adaptation planning and sustainable management of water resources.

In line with the adaptation interventions identified and appraised in Outcome 1.1, Output 2.3.1 will support community-based water resource management in target communities to enhance the climate resilience of both the communities and the availability of their water resources. To achieve this, community-level decision-making groups will be established to align community expectations and interests and facilitate continued engagement and participation of community members, ensuring the sustainability and effectiveness of project interventions. Complementary gender-responsive strategic and operational plans aimed at identifying priority adaptation actions

and investment needs will be developed to enable community-based water resource management for building climate resilience. The establishment of these groups and plans will facilitate community buy-in, securing the social sustainability of the plans and their impact beyond the lifespan of the project.

To further ensure long-term and sustainable development in Haiti's South-East Department, the watershed programme under the PSDH (Output 2.1.1) prioritizes reforestation activities to protect watersheds. Reforestation, combined with agroforestry activities, will reduce extreme degradation of important drainage basins and recharge zones and reduce surface water runoff and improve infiltration of rainwater in the SAEPs' catchments, thereby increasing groundwater resources and sustaining the livelihoods of the target communities. Through a Training of Trainers (ToT) programme under Output 2.3.2, technical capacity and skills pertaining to EbA and agroforestry initiatives will be developed where necessary to improve communities' climate resilience. These ToT programmes will be implemented in a consultative and participatory manner to facilitate the target communities' input of their traditional knowledge of agroforestry for land management, strengthening the appropriateness of interventions.

Output 2.3.3 will strengthen the organisational capacities of community-level water governance structures — such as CAEPAs and CTEs — to support the adoption of an integrated water resources management (IWRM) approach to facilitate sustainable and equitable management of water resources in the target SAEPs. By contributing to the monitoring and management of land-use practices, the community-driven IWRM approach within the SAEPs' catchment areas and recharge zones will manage non-climatic impacts on the ecosystems surrounding these areas. The specific outcomes and associated outputs designed to ensure the achievement of Outcome 2.3's objectives are detailed below.

Output 2.3.1: Community-based strategic and operational plans, with gender-specific criteria, developed to ensure the climate resilience of drinking water access.

Efforts to build resilience through participatory planning by establishing a bottom-up approach towards developing watershed management plans have been scarce. For instance, The National Watershed Policy was put in place over 20 years ago, thereby leading to minimal community-level participatory planning approaches implemented with regards to water resources management and CCA interventions. This has resulted in limited effectiveness of community-level approaches for the sustainable management of water resources and associated infrastructure, as well as limited community buy-in into climate-resilience natural resource management. To remedy the situation, LDCF resources will be used to facilitate the establishment of five community-level decision-making groups, each comprising of representatives from the beneficiary communities of each targeted SAEP. More specifically, each decision-making group will include representatives from, *inter alia*: i) community leadership; ii) farmers, both subsistence and commercial; iii) women's groups; and iv) youth groups. The decision-making groups will serve to align community expectations and interests — taking into account the differentiated livelihoods of upstream and downstream communities — as well as to facilitate continued engagement and participation of community members in the project activities. Additionally, they will uphold the role of community representatives in activities, as necessary. Moreover, the community-level decision-making groups will be responsible for the creation of community enterprises where necessary, to allow adopters of agroforestry practices (see Outputs 2.3.2 and 3.1.1) to have easy market access to offload produce emanating from high-value tree species in their plantations. The community enterprises will be mandated with the task to systematically reinvest a portion of the revenues from the sales into additional financial packages (see Output 3.1.1) to help farmers adopt agroforestry practices beyond the proposed project's lifespan.

Further, in this output, gender-responsive strategic and operational plans aimed at identifying priority adaptation actions and investment needs will be developed to enable community-based water resource management for building climate resilience. In line with the adaptation interventions identified and appraised in Outcome 1.1, this output will support community-based water resource management in target communities to enhance the climate resilience of both the communities and the availability of their water resources. These strategic and operational plans will draw on the outputs of the cost-benefit analyses and technical studies conducted under Outcome 1.1,

while also including specific details on: i) potential funding options; ii) the timelines for the adaptation actions; and iii) the respective responsible stakeholders.

A community-based and gender-responsive approach to developing and implementing these plans — including the selection of adaptation options by the community members through a rigorous participatory approach — will be adopted to facilitate community buy-in. By enabling community members to contribute to enhancing their resilience to climate impacts, the social sustainability of the plans and their impact will be further ensured beyond the lifespan of the project.

Output 2.3.1 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from the project's Community Liaison Specialist. Indicative activities under this output include:

1. Activity 2.3.1.1: Establish community-level decision-making groups in the target communities reliant on the five target SAEPs (refer to footnote 108).
2. Activity 2.3.1.2: Conduct community-level stakeholder consultative workshops on community adaptation needs.
3. Activity 2.3.1.3: Conduct three-day community-level stakeholder consultative workshops in each SAEP on proposed adaptation strategies in target communities.
4. Activity 2.3.1.4: Develop and implement community-based strategic and operational plans, with the support of regional (e.g. OREPA Sud) and local (such as the CAEPAs, CTEs and CBOs) government stakeholders.

Output 2.3.2: Consultative and consensus-based community-level engagement on land-use planning conducted, and training programmes developed, for sustainable land uses in drainage and recharge zones to ensure the climate resilience of drinking water recharge.

The watershed programme under the PSDH (as mentioned in Output 2.1.1) highlights the use of reforestation activities based on agro-ecological zoning to protect watersheds as a priority action to support and ensure long-term and sustainable development in Haiti. In line with this programme — and also based on existing local land-use plans developed under the Ministry of Planning and External Cooperation (MPCE) — reforestation and agroforestry activities will be developed (see Output 3.1.1) to reduce extreme degradation of important drainage basins and recharge zones within the five target SAEPs. However, there are currently minimal enforceable regulations for the monitoring and management of land use within drainage and recharge zones in Haiti. To this end, LDCF resources will be used to conduct a series of engagement with the targeted communities to determine current land uses within the target catchments, including gazette and un-gazetted land uses, thereby allowing for the identification the most suitable zones for the reforestation interventions to be implemented⁶⁶.

The development of agroforestry and reforestation technical packages — in collaboration of the Department of Forests and Renewable Energies (DFER), of the MoE — and the identification of suitable zones for the establishment of community-managed agroforests will also be done under this output. The abovementioned technical packages — developed and informed by forestry and agronomic applied research, as well as by the input of the target communities' traditional knowledge of agroforestry — will contain:

1. a range of indigenous and climate-resilient species suitable for planting in the target catchment areas;
2. an accompanying planting arrangement to avoid competition between fast-growing and/or pioneer species, and later succession species;
3. a list of tree-crop combinations that increase farm revenue;
4. advice on landscaping at the farm plot level;
5. a list of low-maintenance climate-resilient (particularly in terms of water use) high-value crop species;

⁶⁶ See Output 3.1.1. for information relating to the mitigation of environmental and social risks pertaining to the reforestation and agroforestry interventions.

6. advice on market access and price support for produce emanating from the agroforestry activities — the use of low-maintenance climate-resilient high-value crop species (such as coffee, cocoa, and cassava) will compensate for the loss of revenue during the period when the trees are not producing revenue; and
7. advice on a phased approach to sequentially adopt agroforestry practices to minimise loss of revenue.

This output will be extensively underpinned by a Training of Trainers (ToT) programme designed to firstly equip DFER and MoE Departmental Directorate staffs with the necessary knowledge and skills to enhance the awareness and knowledge of communities about ecosystem-based adaptation (EbA) initiatives — particularly pertaining to agroforestry initiatives — to improve their climate resilience. Secondly, the ToT programme will serve to enhance the knowledge, understanding and applicability of the abovementioned reforestation and agroforestry technical packages. Finally, the ToT programmes will be implemented in a consultative and participatory manner to facilitate the communities' input of their traditional knowledge of agroforestry as a land-management practice.

The interventions under this output support the priorities identified under Haiti's National Action Plan for Adaptation (NAPA), specifically: i) watershed management; and ii) the protection and conservation of water resources. To ensure community buy-in and consensus of permitted land uses, these land-use plans will be developed collaboratively and in consultation with CBOs, community representatives and local institutions. The community consultations will also focus on determining the current land uses — both gazetted and un-gazetted — within the target SAEPs.

Output 2.3.2 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from a local Agroforestry Expert, the project's Community Liaison Specialist, and the project's SES Specialist. A National consultant in collaboration with DFER will be responsible for the development of the technical packages. Indicative activities under this output include:

1. Activity 2.3.2.1: Determine current land uses within the target catchments, including gazette and un-gazetted land uses.
2. Activity 2.3.2.2: Identify the most suitable zones for the reforestation and agroforestry interventions to be implemented under Output 3.1.1.
3. Activity 2.3.2.3: Develop agroforestry technical packages for communities reliant on agriculture for their livelihood in the target catchment areas. Fifteen training workshops will be organised by the national consultant to assist in the development of the technical packages.
4. Activity 2.3.2.4: Develop and implement a ToT programme on the usage of reforestation and agroforestry technical packages for DFER and MoE Departmental Directorate staffs stationed within the communities reliant on the five target SAEPs for water. Three five-day work sessions will be organised to dispense the ToT programme to the DFER and MoE officers.

Output 2.3.3: Programmes implemented to strengthen organisational capacities and awareness of community-level stakeholders and organisations — reflecting gender-specific differences and promoting the equitable management of water resources and supply infrastructure under climate change conditions.

Sustainable and equitable management of water resources and water supply infrastructure — including monitoring the condition of water resources — is currently inadequate because of limited technical and organisational capacities among community-level stakeholders and organisations. This is further exacerbated by the minimal consideration of issues related to gender and social inclusion in the sanitation sub-sector. To this end, LDCF resources will be used towards activities that will strengthen the organisational capacities of community-level water governance structures — such as CAEPAs and CTEs — to support the implementation of the community-level land-use plans developed under Output 2.3.2. Given the varying land uses in and around the catchment areas and recharge zones of the five target SAEPs, an integrated water resources management (IWRM) approach will be adopted to facilitate sustainable and equitable management of water resources. IWRM — in line with Haiti's Nationally Determined Contributions (NDCs) — will be supported by the establishment and implementation of biannual multi-stakeholder forums (MSFs) comprising DINEPA, OREPA Sud, target CAEPAs, CTEs, CBOs, NGOs, as well as community representatives, including farmers, as a platform for effective dialogue between these

stakeholders. Four MSF clusters will be established to ensure adequate representation of the targeted beneficiaries in discourses which affect them. The clusters will be divided as: i) Cluster one — SAEP Cresson stakeholders and beneficiaries; ii) Cluster two — SAEP Mirliton stakeholders and beneficiaries; iii) Cluster three — SAEPs Cascade Pichon and Pr chet stakeholders and beneficiaries; and iv) Cluster four — SAEP K-Royer stakeholders and beneficiaries. In addition to promoting institutional sustainability, the IWRM approach will reduce competition between the varying land uses and contribute to the monitoring and management of land-use practices within catchment areas and recharge zones to control non-climatic impacts on the ecosystems surrounding these areas.

Indicative activities under this output include:

1. Activity 2.3.3.1: Assist DINEPA in conducting a gap analysis on the organisational capacity of community-level institutions involved in water resource management in the target communities.
2. Activity 2.3.3.2: Develop and convene a five-day training workshop in each SAEP on contextually relevant and gender-responsive IWRM for community-level water governance structures.
3. Activity 2.3.3.3: Establish MSFs in target communities.

Component 3. Identification and promotion of practices for the conservation, management and supply of drinking water adapted to predicted climate change scenarios

Outcome 3.1: Reliable access to drinking water ensured for target communities and households as a result of the implementation of climate change adaptation measures.

To address the inadequate practices and infrastructure to ensure water supply under the conditions of climate change (Barrier 5), on-the-ground interventions will be implemented under Outcome 3.1 to improve drinking water availability in the South-East Department of Haiti, enhancing the climate resilience of the project's target communities. These interventions will build on the previous investments and lessons learned in Haiti and specifically in the South-East Department, such as the DINEPA-implemented AECID programme (2009–2021) and the DINEPA-implemented REGLEAU project (2018–2030), as well as on international best practices in adaptive water management options and conservation.

Among the abovementioned on-the-ground interventions, the EbA approaches — primarily reforestation — under Output 3.1.1 will result in increased water infiltration on slopes⁶⁷ as well as improved soil conservation and land management in these areas⁶⁸. Complementary agroforestry interventions, using high-value tree species, will ensure direct benefits for upstream communities in the recharge zones — that rely on agriculture for their livelihoods — combined with the ecosystem services provided to downstream communities, thereby achieving community buy-in of interventions, promoting their sustainability. Interventions under Output 3.1.2, such as constructing gabions, percolation tanks, contour bunds and septic tanks, will improve aquifer recharge and protect important water distribution infrastructure from climate change impacts, such as flooding and erosion, improving their resilience to these changes. Similarly, the stored rainwater resulting from climate-resilient rainwater harvesting systems installed under Output 3.1.3, will reduce community members' reliance on seasonal rainfall and groundwater resources — particularly during extended drought periods — while also providing local access to water in communities where water distribution networks are not fully operational⁶⁹.

Ultimately, these outputs will lead to more sustainable water supply for household and agricultural use under future climate change conditions, as a result of improved planning and the implementation of adaptive water management options by water users. For the above interventions to be effective, the target SAEPs will require sustainable operations and management (O&M) of water distribution infrastructure, to contribute to the availability of drinking water. This will be achieved by establishing a financial plan that will include a monitoring

⁶⁷ See 'SWAT Assessment' (Annex 12c).

⁶⁸ Ibid.

⁶⁹ See Site Selection Annex (12a).

and tariff system under Output 3.1.4. The financial plan will fund O&M plans that will also be developed under this output, to ensure adequate reinvestment of the tariffs. To improve their effectiveness, these monitoring and tariff systems will be accompanied by tailored awareness-raising campaigns on water supply and the need for tariff systems, to promote the uptake of these systems. Finally, following water quality assessments, water treatment programmes using hypochlorite will be established under Output 3.1.5. Given the vulnerability of Haiti's water distribution networks to climate change impacts, these programmes will assist with addressing the prevalence of cholera outbreaks following extreme weather events.

Output 3.1.1: 4,540 ha of aquifer recharge zones rehabilitated within the five target SAEPs⁷⁰ — of which 700 ha is restored through agroforestry.

Despite the environmental and watershed programmes under the territorial refoundation⁷¹ of the PSDH, specifically regarding: i) establishing a network of protected areas; ii) restoring degraded ecosystems; iii) ensuring sustainable management and use of forests; and iv) protecting watersheds by using reforestation plans based on agro-ecological zoning, it is estimated that ~25 of Haiti's watersheds are currently considered as degraded⁷². This degradation attributed to, *inter alia*, fuelwood harvesting, increasing population growth, and agricultural expansion and has resulted in increased surface water runoff and reduced water infiltration into soils during rainfall events. Consequently, the rate at which aquifers are recharged has been adversely impacted thereby compromising freshwater supply for the communities dependent of these aquifers. Under this output, LDCF resources will be used for interventions that involve the rehabilitation of water sources and aquifer recharge zones by using ecosystem-based adaptation (EbA) approaches the target SAEPs. Reforestation and agroforestry were selected as the preferred EbA approaches for this intervention because they allow for improved ecological and hydrological functioning without physical or economic displacement in the targeted communities. These EbA approaches will ultimately result in: i) increased water infiltration on slopes⁷³; ii) improved soil conservation and land management in these areas⁷⁴; and iii) more sustainable livelihoods for target communities who depend on agricultural production.

The reforestation and agroforestry interventions will be implemented at target sites identified under Outputs 2.3.2 and 2.3.3. Implementation of the ESMF and subsequent management actions will be fulfilled by the Project SES Specialist to ensure that no physical and economic displacement occurs in the target communities as a result of these interventions during project implementation, as well as after project closure. To further ensure that project interventions do not lead to any physical or economic displacement, reforestation activities under this Output will only be implemented in currently unoccupied degraded areas of the recharge zones where economic activities or settlements previously occurred — as identified under Output 2.3.2 after extensive community consultation. Target community members and farmers will be incentivised to reforest the abovementioned degraded areas by means of a Cash4Work (CFW) programme implemented under Output 3.1.1 below. The CFW programme will be done using local contractors who will employ, organise, and oversee locally recruited workers to plant the trees. The local contractors will also organise the transport of saplings from a nursery to the planting sites, as well as the machinery needed to prepare the slopes for planting in the target catchment areas. The Project SES Specialist will ensure that any activity being done as part of the CFW programme is fully compliant with the ESMF. Further, Local Foresters from the DFER in collaboration with the project staffs will be tasked to ensure the sustainability of the reforestation activities by conducting quarterly site visits in the areas where trees have been planted to manage tree sapling mortality and replace with new saplings where necessary.

⁷⁰ More information on the geographical locations of these sources as well as the relevant affected communities is available in the Site Selection Annex.

⁷¹ One of the four main pillars of the approach of the Strategic Development Plan of Haiti (PSDH), the others being: i) economic; ii) social; and iii) institutional refoundation. More details on the PSDH and its subsidiary programmes are available in Section II.

⁷² UNEP in Haiti. 2010 Year in Review.

⁷³ See 'SWAT Assessment' (Annex 12c).

⁷⁴ Ibid.

The abovementioned agroforestry interventions will be carried out using high-value species⁷⁵, management models and techniques — all identified under Outputs 2.3.2 and 2.3.3 — that are contextually appropriate. The use of high-value species for agroforestry interventions will ensure direct benefits for upstream communities in the recharge zones — that rely on agriculture for their livelihoods — in addition to the ecosystem services provided to downstream communities, thereby promoting sustainability through community buy-in. The agroforestry interventions' sustainability and replicability will further be ensured through training of community 'agroforestry farmer champions' who will act as first adopters, co-developers and trainers, to ensure upscaling of the agroforestry practices in the wider community. The 'farmer champions' will be trained by DFER and MoE Departmental Directorate staffs who will be equipped with the necessary skills and knowledge on situationally-appropriate agroforestry practices by the ToT programme implemented under Output 2.3.2. Training to 'farmer champions' will be dispensed through workshops series led by the extension office workers, and hosted by CBOs, in the communities reliant on the five target SAEPs for drinking water access. Trained farmer champions will then receive one-off financial packages to facilitate the adoption promotion of agroforests across the recharge zones of the five target SAEPs. To ensure sustainability of the agroforestry interventions, farmers will be encouraged to adopt agroforestry practices in a phased approach, wherever possible, in order to complement income emanating from current agricultural practices, rather than replacing the latter practices all at once. Farmers having received one-off financial packages will be encouraged by means of awareness-raising campaigns to allow community enterprises managed by the community-level decision-making groups established under Output 2.3.1 to reinvest a portion of the revenues from the sales of produce emanating from agroforestry practices into additional financial packages to help more farmers adopt agroforestry practices beyond the proposed project's lifespan, as well as to allow for the complete phase out of unsustainable agricultural practices in the watersheds.

The results of this output align with the best practices and lessons learnt identified under the GEF-funded project entitled 'Increasing resilience of ecosystems and vulnerable communities to climate change and anthropogenic threats through a ridge-to-reef approach to biodiversity conservation and watershed management' — relating to watershed management using an EbA approach, will be replicated across the target aquifer recharge zones.

Output 3.1.1 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from a local Agroforestry Expert, the project's Community Liaison Specialist, the project's SES Specialist and DFER staffs from the MoE. Indicative activities under this output include:

1. Activity 3.1.1.1: Establish a nursery for tree seedlings to be dispensed for the reforestation and agroforestry interventions⁷⁶. Tree seedlings for both the reforestation and agroforestry interventions will be provided free of charge.
2. Activity 3.1.1.2: Establish a Cash4Work programme to facilitate the implementation of reforestation interventions, using reforestation technical package (developed under Activity 2.3.2.3) in suitable degraded areas (identified under Output 2.3.2) to increase the tree cover in ~3,840 ha of degraded in the recharge zones of the five target SAEPs.
3. Activity 3.1.1.3: Promote agroforestry practices through extensive community consultation over at least 700 ha in the target catchment areas using the technical packages developed under Activity 2.3.2.3.
4. Activity 3.1.1.4: Host and dispense two five-day workshops to train 'agroforestry farmer champions' on the usage of agroforestry technical packages (developed under Activity 2.3.2.3) on contextually appropriate agroforestry practices.
5. Activity 3.1.1.5: Promote and establish of at least 700 ha of agroforests, through extensive community consultation and awareness raising, across the recharge zones of the five target SAEPs.

Output 3.1.2: Gabions⁷⁷, percolation tanks⁷⁸, contour bunds⁷⁹ and, septic tanks constructed to promote aquifer recharge and to reinforce the protection of the five target Drinking Water Supply Systems (SAEPs).

⁷⁵ While not necessarily native, only non-invasive high value tree species will be used, to avoid any possibility of ecosystem degradation and economic displacement from this intervention.

⁷⁶ While non-native high value tree species may be used for agroforestry interventions, reforestation interventions will only be implemented using indigenous species, as per the reforestation technical packages developed under Output 2.3.2.

Severe flooding as a result of extreme rainfall events — which are projected to increase in frequency and intensity — causes extensive damages to water supply systems and sanitation infrastructure, compromising water provision and quality. Furthermore, the degradation of several of Haiti's watersheds because of deforestation⁸⁰ has resulted in higher overland flow speed and decreased water infiltration into soils, consequently increasing surface water run-off during extreme rainfall events. As a result, the rate at which aquifers recharge is also reduced, further compromising the freshwater production of the aquifer-fed water sources. To this end, project resources under this output will be used to construct physical measures, such as gabions, percolation tanks and contour bunds — at strategic points within the five target SAEPs — to reduce surface water runoff and increase water infiltration into soils, consequently improving aquifer recharge and protecting important water distribution infrastructure from climate change impacts through preventing damage to these systems caused by flooding and erosion. The interventions under this output will complement the ongoing initiatives by OREPA Sud pertaining to the rehabilitation and extension the Cassedan SAEP⁸¹ in the South-East Department of Haiti. Appropriate physical measures will be selected according to site-specific conditions and requirements based on surveys carried out in vulnerable communities to identify high risk points in the local water distribution network. The interventions of this output align with the adaptation priorities identified within Haiti's NAPA, specifically: i) watershed management and protection; ii) the promotion and preservation of natural resources; iii) water resource conservation and protection; and iv) construction and rehabilitation of infrastructure. Similar as in Output 3.1.2, implementation of the ESMF and subsequent management actions will be fulfilled by the Project SES Specialist to ensure that no physical and economic displacement occurs in the target communities as a result of these interventions during project implementation, as well as after project closure.

Output 3.1.2 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from a local Water Resources Advisor. Indicative activities under this output include:

1. Activity 3.1.2.1: Conduct surveys to identify priority high-risk sites in the five target SAEPs⁸².
2. Activity 3.1.2.2: Increase the capacity of water governance institutions (MoE, DINEPA, MARNDR) to procure and install physical structures to improve the resilience of the target SAEPs against climate change impacts.
3. Activity 3.1.2.3: Procure and install gabions, percolation tanks, contour bunds and septic tanks at sites identified under Activity 3.1.2.1 to increase resilience of aquifer recharge zones and water distribution infrastructure against climate change.

Output 3.1.3: Rooftop water harvesting systems and household cisterns installed in 350 households in target communities.

Approximately 56% of the population of the South-East Department obtains their drinking water from springs, 20% from communal water fountains, 12% from household water tanks — connected to piped water systems — and 6% from rivers. While water is generally free, high levels of dependence on springs and rivers result in water supply that is typically of poor quality and unreliable because of seasonal variations in runoff and the groundwater table level. In rural areas, the water supply systems generally consist of water points equipped with handpumps, while small towns are served with gravity-fed piped systems supplied by spring catchments, from which water is delivered through standposts, kiosks and household connections. In addition, DINEPA's performance monitoring

⁷⁷ A gabion refers to a cage, cylinder or box filled with rocks, concrete, or sometimes sand and soil and is mostly used for temporary flood walls, silt filtration from runoff, and stabilising shorelines.

⁷⁸ A percolation tank is an artificial reservoir submerging a land area with adequate permeability, so that surface runoff is made to percolate and recharge the groundwater storage.

⁷⁹ Contour bunds involve the placement of lines of stones or soil along elevations in the landscape to capture and hold rainfall before it can become runoff.

⁸⁰ UNEP in Haiti. 2010 Year in Review.

⁸¹ OREPA Sud. 2021. Rehabilitation and extension work of the Cassedan SAEP, Marigot Commune.

⁸² More information on the geographical locations of the sources of the target SAEPs, as well as the relevant affected communities, is available in the Site Selection Annex (12a)

system, which monitors roughly half of the Department's water supply systems, estimates that 41% of the standposts and 45% of the kiosks do not deliver water.

Current and projected climate changes (see Section II) will exacerbate the already existing challenges in terms of water supply to the communities of the South-East Department. To this end, under this output, LDCF resources will be directed towards the installation of rainwater harvesting systems — including rooftop water capture structures and cisterns. Stored rainwater will reduce community members' reliance on seasonal rainfall and groundwater resources — particularly during extended drought periods — while also providing local access to water in communities where water distribution networks are not fully operational⁸³. The storage capacity of cisterns will be designed to account for prolonged dry periods when water would otherwise not be available. Training workshops will be hosted by CAEPAs and CTEs to equip target community members with the necessary knowledge and skills for the appropriate use and maintenance of these systems, while the installation of rainwater harvesting technologies will be climate-proofed to increase their resilience to extreme weather events — through the selection of appropriate materials and structural planning.

Output 3.1.3 will be implemented by Helvetas in collaboration with the MoE and DINEPA . Indicative activities under this output include:

1. Activity 3.1.3.1: Identify 350 priority households in areas where water distribution networks are not fully operational within the five target SAEPs.
2. Activity 3.1.3.2: Procure and install rooftop water harvesting systems and household cisterns in priority households identified under Activity 3.1.3.1.
3. Activity 3.1.3.3: Convene a one-day training workshop in each SAEP to equip recipient household members with the knowledge for appropriate use and maintenance of rainwater harvesting equipment and household cisterns.

Output 3.1.4: Framework for financial plans for O&M of the five target SAEPs to improve water-use efficiency and distribution, accompanied by awareness-raising and advocacy programmes.

Currently, several of the target communities do not pay for water provision, predominantly because of the minimal financial capacity within the communities, as well as cultural and societal beliefs that water is a free commodity. As a result, water consumption volumes remain unmonitored, allowing for the unsustainable use of water resources and limited information for effective management. The effectiveness of SAEPs' water supply is also disrupted by the creation of illegal piping connections within the target communities, driven by communities' water supply needs. Under this output, LDCF funds will be used to develop an O&M framework based on lessons learned from existing efforts of Helvetas as part of the REGLEAU project, specifically relating to rehabilitation of SAEPs. In addition, willingness-to-pay (WTP) assessments will be conducted among the target communities. Moreover, Project Social Impact Assessments (PSIAs) will be conducted determine the social impacts that the implementation of water tariffication systems may have on the target communities of the project.

Based on the abovementioned lessons learned, PSIAs, as well as WTP assessments, equitable financial plans — focussing specifically on the South-East Department — for O&M of the five target SAEPs will be developed. This financial plan will include a monitoring and tariff system to promote the sustainability of the O&M of the SAEPs. Additionally, water consumption metering systems will be installed to ensure sustainable and equitable water use and distribution under future scarcity scenarios. The financial plan will fund O&M plans that will also be developed under this output, to ensure adequate reinvestment of the tariffs. However, seed funding — by government institutions, donors, or loans — will be required to operationalise the physical elements of the SAEPs before the tariff system can be implemented. Implementation of the ESMF and subsequent management actions will be fulfilled by the Project SES Specialist to ensure that financial plans developed as a result of interventions under this output do not result in unequal access to water during project implementation, as well as after project closure. The

⁸³ See Site Selection Annex (12a).

abovementioned monitoring and tariff systems will be accompanied by rigorous awareness-raising campaigns tailored to the target communities for education on: i) the need for tariff structures; ii) efficient water uses and the impacts of unsustainable water use; and iii) alternative water supply resources. Finally, lessons learnt from the financial plans for O&M frameworks developed and implemented under this Output will feed into the information- and knowledge-generation system established under Output 1.1.2. These lessons can then subsequently be used to by national, as well as other regional water governance bodies in Haiti, to facilitate the replication of interventions being implemented under Outputs 3.1.2 and 3.1.3 of the proposed project.

Output 3.1.4 will be implemented by Helvetas in collaboration with the MoE and DINEPA with support and input from an International Applied Anthropologist and the project's Community Liaison Specialist. Indicative activities under this output include:

1. Activity 3.1.4.1: Design and implement awareness-raising campaigns and advocacy programmes in target communities for water consumption monitoring systems, including efficient water uses.
2. Activity 3.1.4.2: Conduct a 'willingness-to-pay' assessment and PSIAs in target communities within the five target SAEs.
3. Activity 3.1.4.3: Develop and implement framework for the sustainable O&M of the five target SAEs based on lessons learned from Helvetas and the WTP assessment, which will include the installation of water consumption metering systems.

Output 3.1.5: Programmes for treating water supplies with sodium hypochlorite implemented to reduce water pollution-related health risks.

Flooding as a result of extreme rainfall events, which are projected to increase in frequency and intensity (see Section II), causes extensive damages to water supply systems and sanitation infrastructure, compromising water provision and quality, as well as the health of communities. Moreover, because of agriculture-related activities occurring upstream in the recharge zones, water sources are often polluted by fertilisers and pesticides, further compromising the quality of water. Under this output, LDCF resources will be used to establish drinking water treatment programmes for the five target SAEs in the South-East Department to improve the quality of water supplied to the beneficiary communities. The water treatment programme will involve the use of sodium hypochlorite — a chlorine compound used for water purification — to ensure that the quality of drinking water is on par with the water quality standards stipulated by DINEPA. The water treatment systems will be managed by the regional office of DINEPA. Attention will be paid to the quality of the products and the dosage to be used. The interventions of this output will build on the existing DINEPA initiatives to improve water service provision in Haiti through three 'Water Sanitation' projects implemented at a national scale. The three projects by the DINEPA aim to improve water service provision in Haiti by:

- establishing a strengthened human resources system through the creation of professional and technical training programmes in Haiti to enable the establishment of a sustainable sanitation system (2021–2026);
- creating an enabling environment for the regulation of water and sanitation services in the context of environmental health (2019–2024); and
- creating and maintaining an environment conducive to the mainstreaming of gender and social aspects in the sanitation sub-sector, in particular by taking into account the specific needs of women, in accordance with the general gender policy of the GoH (2021–2024).

The scope and extent of the water treatment programme will be informed by an inventory of available water treatment systems in the South-East Department — to be conducted under this Output — as well as on the water quality assessments conducted under Output 1.1.5. Given the vulnerability of Haiti's water distribution networks to climate impacts, the water treatment programmes will assist with addressing the prevalence of cholera outbreaks following extreme weather events.

Output 3.1.5 will be implemented by Helvetas in collaboration with the MoE and DINEPA, with support and input from a local Water Resources Advisor. Indicative activities under this output include:

1. Activity 3.1.5.1: Assist DINEPA in establishing an inventory of available water treatment systems in the five target SAEPS; and to develop and implement water treatment programmes for target water supply systems.
2. Activity 3.1.5.2: Develop and implement water treatment programmes for target water supply systems.

Partnerships:

Several ongoing projects address the same or similar development challenges that form the baseline for the proposed project, which the project will collaborate and build on during implementation. Specifically, collaboration with ongoing initiatives will broaden the impact of project interventions, avoid duplication of efforts, and enable the sharing of lessons learned throughout implementation. The details of these projects and their alignment with the proposed project are described in 3 below, including the objectives, outcomes and budgets of the baseline projects, as well as the co-financing potential for the outcomes of the proposed project. Co-financing was identified through extensive discussions with key institutions, donor agencies and organizations in Haiti. These discussions helped identify synergies between the interventions, sites, and beneficiaries of the proposed project.

At the time of preparation of the project document, there were no GEF-funded projects or ongoing GCF initiatives in the proposed project area. However, the LDCF project will work on possible synergies with any GEF project that comes to the area during the implementation of this project. The project will also develop coordination/synergies with the projects listed in Table 1 below that will still be running during project implementation. For those that will come to an end, this project will be able to capitalize on the actions implemented and the lessons learned. This will help avoid duplication of actions and better address future interventions.

Table 1. Baseline projects and their alignment with the proposed project.

Project title	Implementation period	Funding (US\$)	Implementing Agency/ Executing Entity	Description	Alignment with the proposed LDCF project
*Water supply, sanitation and hygiene project in urban, peri-urban and rural areas in Haiti's Greater Northern Region ⁸⁴ , Inter-American Development Bank (IDB)	2019–2025	125 million		The objective of this project is to improve the living conditions of households in Haiti's Greater Northern Region by: i) strengthening water supply, sanitation and hygiene (WASH) sector regulation as well as technical and commercial management of the technical operation centres (CTE); and ii) increasing access to water and sanitation services for urban and rural residents as well as improving their hygiene practices. <u>Target location:</u> Northern region (numerous locations) <u>Actors:</u> IDB, AECID, DINEPA, OREPA Nord (North)	Through Outcomes 2.2 and 2.3, the proposed project will build on the best practices and replicate the technical and institutional capacity — as well as the associated infrastructure — strengthening local-level water resource management structures such as the CTE, to support and implement sustainable use and management of water and other natural resources.
*Port-au-Prince water and sanitation project III ⁸⁵ , Inter-American Development Bank (IDB)	2018–2022	30 million	DINEPA	This project forms part of a series of projects funded by the IDB promoting water and sanitation investments in the Metropolitan Region of Port-au-Prince (MRPP) and is based on the knowledge that additional investments are required to improve water service provision in the capital city. The objectives of this project are to: i) continue improving the financial situation of the CTE of Port-au-Prince to ensure that it does not operate at a loss; and (ii) reduce the number of households in the MRPP without access to potable water services. <u>Target location:</u> MRPP <u>Actors:</u> IDB, DINEPA, OREPA West (Ouest)	The proposed LDCF project will build on lessons learned on water and sanitation investments (Outcome 3.1), particularly best practices on appropriate mechanisms and instruments which support implementation of improved water sanitation mechanisms the context of the South-East Department of Haiti.
*Strengthening local governance of water and sanitation in Haiti (REGLEAU) ^{86, 87} , Swiss Government	2016–2022	12.3 million ⁸⁸	Helvetas Swiss Intercooperation/Ministry of Environment (MoE)	The objective of REGLEAU is to improve the living conditions of local populations in Haiti by increasing the availability and improving the quality of drinking water and sanitation services. The project aims to achieve this by, <i>inter alia</i> : i) strengthening institutional and technical capacities of sub-national governance in the Haitian communities of Baint, La Vallée de Jacmel, Jacmel and Marigot, located in the South-East Department; ii) strengthening existing coordination mechanisms to facilitate improved communication and accountability among actors involved in drinking water and sanitation; and iii) disseminating information and raising awareness on strategies and approaches aimed at improving drinking water and sanitation. The project encourages the	The efforts of REGLEAU strongly aligns with the proposed outcomes of the LDCF project. By addressing the additionality related to climate change impacts on natural resources, particularly drinking water availability, the proposed project will build on the institutional and technical efforts of REGLEAU to strengthen IWRM and coordination among relevant

⁸⁴ Inter-American Development Bank. Project. HA-L1135: Water supply, sanitation and hygiene project in urban, peri-urban and rural areas in Haiti's Greater Northern Region. Available at: <https://www.iadb.org/en/project/HA-L1135>

⁸⁵ Inter-American Development Bank. Project. HA-L1103: Port-au-Prince water and sanitation project. Available at: <https://www.iadb.org/en/project/HA-L1103>

⁸⁶ Swiss Federal Department of Foreign Affairs. International Cooperation. Projects: Strengthening local governance of water and sanitation in Haiti (REGLEAU). Available at: <https://www.dfae.admin.ch/countries/haite/fr/home/cooperation-internationale/projets.html/content/dezaproyets/SDC/en/2017/7F09609/phase1?oldPagePath=/content/countries/haite/fr/home/internationale-zusammenarbeit/projekte.html>

⁸⁷ Swiss Federal Department of Foreign Affairs. International Cooperation. Swiss Embassy in the Republic of Haiti. Available at: <https://www.dfae.admin.ch/dam/countries/countries-content/haite/fr/Factsheet-REGLEAU-FR.pdf>

⁸⁸ CHF11,280,000

Project title	Implementation period	Funding (US\$)	Implementing Agency/ Executing Entity	Description	Alignment with the proposed LDCF project
				engagement of local authorities, communities, and the private sector to effectively manage water and sanitation services. <u>Target location:</u> South-East Department of Haiti (Bainet, La Vallée de Jacmel, Jacmel, and Marigot) <u>Actors:</u> DINEPA, Southern Regional Office for Drinking Water and Sanitation (OREPA Sud), Ministry of Environment (MoE), local governments, Helvetas	stakeholders. The proposed project will also build on best practices identified for improving drinking water and sanitation to facilitate enhanced awareness and knowledge on the impacts of climate change on water resources (Outcome 1.1) and drinking water and sanitation.
Sustainable rural and small towns water and sanitation project (EPARD) ⁸⁹ , World Bank	2015–2021	50 million	GoH	Implemented by DINEPA, the Ministry of Economy and Finance (MEF) and Laroche Essentielle Outsourcing Services (LEOS), this project's objectives are to: i) increase access to improved water supply and sanitation in targeted rural areas and small towns in zones affected by cholera; ii) strengthen water and sanitation service delivery mechanisms at the local level; and iii) improve capacity to respond rapidly and effectively to emergencies, such as extreme weather events and disease outbreaks. The project will promote a shift from a project to a programmatic approach and contribute to the delivery of more sustainable water supply and sanitation services to rural and small-town communities. An estimated 300,000 direct beneficiaries are aimed to be impacted, including 150,000 gaining access to improved water sources, 50,000 benefitting from improved sanitation and 100,000 benefitting from small repairs and expansions. <u>Target location:</u> Nationwide, including the southern region <u>Actors:</u> DINEPA, OREPAs, CAEPAs, several GoH ministries and agencies, LEOS	By promoting aquifer recharge and reinforcing the protection of water distribution infrastructure in Outcome 3.1, the proposed LDCF project will support the interventions of EPARD by enabling improved and resilient water supply to communities in the South-East Department.
Bilateral Programme ⁹⁰ , Spanish Agency for International Cooperation for Development (AECID)	2009–2021	100 million	AECID/ National Directorate for Drinking Water and Sanitation (DINEPA)	The Bilateral Programme fulfils part of AECID's overarching objective in the WASH sector to promote access to water as a human right by improving and expanding water coverage as well as access to drinking water and sanitation, ensuring their sustainability through the integrated management of the hydrological cycle. This programme is structured into two main components: i) promoting access to drinking water and sanitation; and ii) strengthening the institutional capacity of national institutions responsible for drinking water and sanitation sector reforms. <u>Target location:</u> Nationwide (all 10 departments), including the Metropolitan Region of Port-au-Prince (MRPP) and 10 prioritised cities. <u>Implementing partners:</u> AECID, AECID Water and Sanitation Cooperation Fund (FCAS), DINEPA, OREPAs.	The proposed project will build on lessons learned on sustainable and IWRM (Outcome 2.3), particularly best practices on appropriate mechanisms and instruments which support improved water resource management in the Haitian context.

⁸⁹ World Bank. Project and Operations: Haiti Sustainable Rural and Small Towns Water and Sanitation Project. Available: <https://projects.worldbank.org/en/projects-operations/project-detail/P148970>

⁹⁰ AECID. Sectors of Cooperation: Water and sanitation. Available at: <https://www.aecid.ht/fr/secteurs/eau-et-assainissement>

Table 2. Climate change focused projects that are complementary to the proposed LDCF project.

Project title	Implementation period	Funding (US\$)	Implementing Agency/ Executing Entity	Description	Alignment and complementarity
*Increasing resilience of ecosystems and vulnerable communities to climate change and anthropogenic threats through a ridge-to-reef approach to biodiversity conservation and watershed management ⁹¹	2016–2021	51.8 million	UNDP/MoE	This project — funded by GEF and supported by UNDP — aims to enhance the resilience of vulnerable communities and ecosystems in Haiti to the impacts of climate change by: i) enabling improved watershed management through the promotion of ecosystem-based adaptation (EbA); and ii) investing in improved conservation of coastal and marine ecosystems. <u>Target location:</u> Trois Baies (N), Baradères (SW), Cayemites (SW), Marigot – Anse à Pitre (SE) <u>Actors:</u> UNDP, MoE, MARNDR, other GoH ministries, agencies and committees	The proposed project will build on the best practices of this project to effectively promote EbA, particularly in Outcome 3.1, which involves using agroforestry to protect water catchment areas and aquifer recharge zones to ensure improved infiltration and reduced degradation of these areas.
Integrating climate change risks into national development planning processes in Haiti (NAP) ⁹² , GCF	2019–2023	2.8 million	UNDP/Government of Haiti (GoH)	This Readiness Project is financed by the GCF and supported by UNDP. Its aim is to strengthen institutional and technical capacities for the iterative development of a National 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 outcomes, 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. <u>Target location:</u> Nationwide <u>Actors:</u> UNDP, GoH, non-governmental organisations (NGOs), community-based organisations (CBOs), civil society organisations (CSOs) and the private sector	The proposed LDCF project will particularly build on the strengthened coordination mechanisms for multisectoral adaptation planning by mainstreaming CCA into regulatory and policy frameworks relevant to water resource management (Outcome 2.1), as well as strengthening institutional and technical capacities for improved water resource management and territorial land-use planning under current and projected climate change conditions (Outcomes 2.2 and 2.3).
Binational programme Haiti-	2019–2022	7,500,000 EU;	GIZ/GoH	By building capacity for binational cooperation, this project aims to facilitate disaster risk reduction as well as the sustainable management	The proposed project will adopt and build on best practices identified for

⁹¹ <https://www.thegef.org/project/increasing-resilience-ecosystems-and-vulnerable-communities-cc-and-anthropic-threats-through>

⁹² GCF. Readiness Proposal: Haiti. Available at: <https://www.greenclimate.fund/sites/default/files/document/readiness-proposals-haiti-undp-adaptation-planning.pdf>

Dominican Republic: Environment, Climate Change and Disaster Risk Reduction component ⁹³		German Government		of natural resources through CCA interventions. The first outcome of the project is the improved protection of communities living in the Pedernales river watershed — located in Anse-à-Pitre, Thiotte — against climate threats. This involves capacity building for early warning and prevention and attenuation of threats through local and community-based risk management. The outcome also includes improved water access in the area. The second outcome is the decreased degradation of natural resources for enhanced community access to environmental services, through the reforestation and rehabilitation of recharge zones in the watershed, particularly the restoration of riparian forests and the conservation of gullies. Other interventions under this second outcome include the production of endemic species in nurseries and soil conservation. <u>Target location:</u> Pedernales river watershed (Haiti and Dominican Republic), Anse-à-Pitre, Thiotte <u>Actors:</u> GIZ; Ministry of Planning and External Cooperation (MPCE); MoE (including the Directorate of Climate Change), MARNDR	improved natural resources management (Outcome 2.2) and the rehabilitation of recharge zones in watersheds (Outcome 3.1).
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⁹³ Binational programme Haiti-Dominican Republic: Environment, Climate Change and Disaster Risk Reduction component https://www.dropbox.com/s/1vlvtatuvrme2fe/2020-01%20fact%20sheet%20UE-Bassin%20Versant%20Pedernales_fr.pdf?dl=0

Several co-financings are foreseen in the framework of this project. Table 3 below gives details on the different sources of funding:

Table 3. Sources of co-financing

Co-financing source	Co-financing type	Co-financing amount	Included in project results?	If yes, list the relevant outputs
UNDP TRAC	Grant	100,000	Yes	<i>The UNDP co-financing will be used to implement the activities of component 2 of the project. It will contribute to the capacity building of DINEPA and the MoE.</i>
Government of Haiti (MoE)	In Kind	350,000	No	
Interamerican Development Bank (IDB)	In Kind	30,000,000	No	
Helvetas	In Kind	120,000	No	

Risks:

To ensure the effectiveness and positive impact of the proposed project, the project risks and their consequences, as well as their mitigation measures are identified in Table 4 below and elaborated on in the UNDP Risk Register (Annex 6). The list of project risks has been expanded since the original PIF to be more specific and comprehensive. Table 4 also includes risks identified in the social and environmental screening exercise done during the PPG stage. The full SESP is annexed to the ProDoc in Annex 5.

Table 4. Project risks, consequences thereof, as well as proposed mitigation measures.

Identified risk and consequence	Risk Category	Risk rating (L/M/S/H), including impact and probability (I and P, rated 1–5) ⁹⁴	Proposed mitigation measures
Civil unrest and general safety conditions could impede project implementation.	Political	I = 4 P = 3 High	The risk is not under the project control. One of the key measures to address the risk is postponing and stopping all project activities in the project area if the security situation deteriorates.
Insufficient institutional buy-in and coordination in relation to information management and the design and implementation of adaptation strategies	Social	I = 2 P = 3 Moderate	Local stakeholder engagement during the PPG phase includes the identification of project “champions”, ideally within regional government(s) capable of lobbying for coordination and buy-in among entities of central government. The project will build up existing institutionalised environmental information databases managed by ONQEV and SNRE to implement a continuous information and knowledge-generation system (Output 1.1.3). This system will support coordinated water governance and related decision-making. The adaptation strategies identified under Output 1.1.1 will undergo a cost-benefit analysis (Output 1.1.2) and in addition to an appraisal by technical and scientific studies to ensure that the strategies are both locally appropriate and feasible within Haiti’s context. In addition to strengthening institutional capacities, the project will also facilitate improved planning and

⁹⁴ The risk rating levels include Low, Moderate, Substantial or High (L/M/S/H) and are identified from a Risk Matrix that uses risk impact and probability, rated from 1 (Negligible) to 5 (Extreme).

			coordination between national, regional and local government institutions involved in the management of water and other natural resources to ensure adaptation interventions are optimised.
Financial unsustainability of water resilience measures as a result of inadequate buy-in of local community members to water charging systems	Social	I = 4 P = 4 High	The implementation of activities related to improving the sustainability of water supply will involve a participatory design of water tariff systems, including prior awareness raising of the costs of resilience measures, the implications of not implementing such systems, and the relative costs of the alternatives (such as the purchase of water from tanker trucks).
Low survival rates of trees established around water sources and recharge zones	Social	I = 3 P = 2 Low	The reforestation and agroforestry interventions to be established under the proposed project will involve the use of reforestation and agroforestry technical packages, which include detailed information on and climate-resilient plant and crop species. The proposed project will also utilise farmers' and communities' knowledge on appropriate plant species to use for these forests.
The potential outcomes of the project may be sensitive or vulnerable to potential impacts of climate change, especially those associated with increase in rainfall.	Environmental	I = 3 P = 2 Moderate	Activities during the PPG phase include a thorough inventory of potential site-specific hazards, including information provided by local communities and climate experts. Project implementation activities will be timed to not coincide with periods of the year when extreme weather events are more prevalent. Provision will be made in workplans and budgets to allow for weather-related interruptions to ensure that the project remains on schedule. Project interventions are designed to address the impacts of future climate change and to be resilient to climate change hazards themselves.
The proposed project could potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services.	Environmental	I = 3 P = 2 Low	Before the implementation of reforestation and agroforestry interventions, thorough inventories and scientific studies will be conducted in the project's target sites. The results of these inventories, combined with the reforestation and agroforestry packages will limit the risk of environmental damage caused by this project. For instance, the reforestation technical packages will stipulate that these interventions can only be done with species indigenous to the region.
The proposed project could potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services.	Social	I = 3 P = 2 Moderate	The Project SES Specialist (see Annex 7) will be responsible for the adequate implementation of the Gender Action Plan (GAP) during project activities.

Potential unlawful and unfair treatment of workers contracted under the Cash4Work programme for reforestation activities.	Social	I = 4 P = 3 High	The Project SES Specialist (see Annex 7) will be responsible for the adequate implementation of the SESP and the ESMF during the relevant project activities.
The resurgence of new variants of COVID-19, impacts the implementation of project activities	Sanitary	I = 2 P = 3 Moderate	Workshops, trainings and meetings will be held virtually or in a mixed format. For activities that require bringing people together, COVID-19 protective materials will be used, and physical distance will be respected.

As per standard UNDP requirements, the risks detailed in Table 4 above will be monitored quarterly by the Project Manager/Coordinator. The Project Manager will report on the status of the risks to the UNDP Country Office who will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. 5). Management responses to critical risks will also be reported to the GEF in the annual PIR.

COVID-19 impacts:

In addition to the various risks identified in Table 4 above, the implementation of some project activities could be affected by the resurgence of COVID-19 in the project target areas. Indeed, with the outbreak of the COVID-19 pandemic, the risks of postponement and delay in the implementation of certain activities that require the gathering of stakeholders and/or beneficiaries is imminent. This situation requires the adoption of certain strategies to mitigate these risks. The mitigating actions include : organising meetings and workshops in a virtual or mixed manner, carrying out activities with limited manpower, respecting physical distancing measures, wearing protective equipment against COVID-19, etc.

Stakeholder engagement and south-south cooperation:

Table 5. Stakeholder engagement and South-South cooperation within the proposed project.

Stakeholder group	Description or example	Indicative roles and responsibilities	Role and responsibilities in decision-making and implementation
National government, ministries and agencies	- Ministry of Environment (MoE) - Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) - National Directorate for Drinking water and Sanitation (DINEPA)	This stakeholder group will support project implementation and provide co-financing to the project. MoE, MARNDR and DINEPA have signed a cooperation protocol for the development of the project. They will mainstream climate change adaptation and sustainable water management principles into their policies and strategies and benefit from capacity development under the project. Other relevant ministries will be consulted as needed.	Roles and responsibilities related to the management and generation of information related to natural resources, as well as the planning, management and use of water, land, forests and other natural resources is divided between several entities, including MoE, MARNDR and DINEPA. MoE is mandated to develop and establish appropriate measures for the Haiti's environmental protection and management
South-East Department (regional) government and agencies	- Regional Office for Drinking Water and Sanitation (OREPA) Sud - DDE – SE - DDA – SE - Departmental delegation (Délégation départementale)	This stakeholder group will support project implementation, including mainstreaming climate change adaptation and sustainable water management principles into their policies and strategies. These stakeholders will also benefit from capacity development under the project.	
Local governing bodies	- Boards of the Municipal Sections (CASEC) - Assemblies of the Communal Sections (ASEC) - Town Hall (Mairie)	This stakeholder group will support project implementation, including mainstreaming climate change adaptation and sustainable water management principles into their	

	• Technical Operating Centre (CTE) • Municipal Agricultural Office (BAC) • Environmental Monitoring Brigade (Briarde de surveillance environnementale)	policies and strategies. These stakeholders will also benefit from capacity development under the project.	
Local communities	• Drinking Water Supply and Sanitation Committees (CAEPAs)	Local communities and local community-based water management organisations are the direct beneficiaries of the project. Buy-in from this stakeholder group into the project interventions is necessary, as without their support and participation, the interventions will not be successful. They will benefit from awareness raising campaigns, capacity-building programmes and interventions for improved drinking water access, such as community plans for the sustainable management of drinking water, reforestation around aquifer recharge zones, the installation of rooftop rainwater capture systems and domestic cisterns.	CAEPAs are responsible for managing drinking water supply systems in rural areas, small towns, and marginal urban neighbourhoods.
Non-governmental organisations (NGOs) and civil society organisations (CSOs)	• Comité Protos Haïti • CARE • Action contre la faim • ASSODLO • GRET en Haïti • Inter Aide • Solidarités international • World Vision • Plan Haiti • LEOS Foundation • ACTED • Welt Hunger Hilfe Haiti (Agro Action Allemande, AAA) • COOPI • CROSE • Malteser International • HAAMES • Helvetas • ACDI/VOCA	These agencies are already supporting and implementing related activities at some project sites. They have the potential to provide general partnership support to project implementation, as well as sharing experiences, best practices and lessons learned for related interventions in the project area.	These stakeholders provide implementation support of activities in several local communities. They are involved in varying areas of intervention, <i>inter alia</i> : i) water and sanitation services, including water resources management; ii) reforestation; iii) water governance; iv) conservation of natural resources; and v) disaster risk reduction and management. CSOs and NGOs will be directly involved in project implementation through <i>inter alia</i> promoting community participation in project activities, research assistance, coordination and representation of local communities, and networking and coordination with other CSOs and NGOs to best achieve the desired outcomes of the project. CSOs and NGOs will also contribute to advocating principles of social justice and equity within the project implementation, and will be encouraged to engage with other similar organisations contributing to the project. Moreover, CSOs and NGOs will be active participants in project implementation by taking part, where necessary, in the provision of trainings and capacity building, through the provision of technical knowledge to beneficiaries, advising beneficiaries on how to take advantage of goods and services catalysed by the project, as well as planning, organisation and implementation of project activities. The participation of CSOs and NGOs during project implementation may also be extended to monitoring and evaluation of project activities.

Women's groups and organizations working on gender equality	• Fanm-Deside • Asosyasyon Fanm Vanyan Pichon (AFVP) • Association de Femmes Volontaires de Tuff (AFVT) • Rezo Fanm GranGozye (REFAG) • Fédération Ma Femme • Femme en Action Macary (FAM) • Fédération des Associations de Femmes Progressistes en Action pour le Progrès (FAFPAD) • Mouvement des Organisations de Femmes pour l'Avancement de Bell-Anse (MOFAB) • Asosyasyon Fanm Aktif Fon Janèt (AFAF)	Women are affected differently by the impacts of climate change on water resource management and access (see 'Pre-assessment of gender context' below). They can benefit from capacity development under the project. The project will make every effort to contribute to national efforts to improve the status of women and improve gender balance by mainstreaming gender considerations into climate change adaptation strategies and policies.	Gender-based organisations ensure the equitable participation and representation of women and girls in activities implemented in local communities, as well as equitable benefit from these activities. Additionally, these stakeholders ensure that gender dynamics are considered in activities that are implemented.
International organisations	• UNDP Haiti Office and other UN agencies • GEF Focal Point • Interamerican Development Bank (IDB) • Spanish Agency for International Development Cooperation (AECID) • Pan American Development Fund en Haïti (PADF) • Red Cross • World Food Programme Haiti (PAM) • Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) • Food and Agriculture Organisation (FAO) • Other multilateral agencies	These stakeholders, specifically UNDP, IDB and AECID, will provide co-finance, guide the project and ensure it is implemented effectively. By collaborating with these stakeholders, both their initiatives and the project will benefit from best international knowledge and practices through knowledge sharing.	
Private sector actors	• Local small and medium-sized private enterprises such as Culligan and Aquafin	The private sector involved in drinking water in Haiti will be consulted during the development of the project as an important stakeholder for the project's activities, such as water treatment.	

In addition, to bring the voice of Haiti to global and regional fora, the project will explore opportunities for meaningful participation in specific events where UNDP could support engagement with the global development discourse on water management and climate change. The project will furthermore provide opportunities for regional cooperation with countries that are implementing initiatives on *drinking water climatic resilience* in geopolitical, social and environmental contexts relevant to the proposed project in *Haiti*.

Gender equality and Women's Empowerment:

During the PPG phase, a gender analysis was conducted to identify and highlight the differentiated gender experiences and barriers to achieving gender equality, particularly with regards to water management, use and access in the South-East Department of Haiti. The analysis includes findings on women's: i) roles and responsibilities at a household level; ii) participation in productive activities at a community level; iii) access to resources; and iv) participation and responsibilities in decision-making and management of water resources. A summary of the findings of the gender analysis, along with the recommendations to address gender-related inequalities and promote women and youth empowerment, are included below.

Gender Analysis

Roles and responsibilities of women in households

In Haiti, the collection of water for household needs is predominantly the responsibility of women and girls, while men provide food. As a result, limited availability of freshwater resources affects women disproportionately, particularly because considerable time is spent travelling long distances to water sources and collecting water, which adversely affects women and girls’ personal safety and health. In addition, the time available to dedicate to education, productive economic opportunities, and being in decision-making positions is reduced. Women are also the primary caregivers in their households and are responsible for cooking and caring for both children and elders, responsibilities that are dependent on water availability.

Women's access to resources

Men and women’s access to resources differs across several communities in Haiti’s South-East Department. For example, in the commune of Vallée de Jacmel, access to resources such as land and water are the same for women as for men, but in the communes of Grand Gosier, Belle-Anse, Marigot and Anse-à-Pîtres, water is more accessible to women while land is more accessible to men. Women's access to water is mostly influenced by the availability of freshwater sources and the distance required to travel to collect water. However, this often increases their vulnerability to risks associated with travelling extensive distances to reach water sources, including conflict among communities during water-scarce periods. Regarding access to land, men often have easier access to land resources than women, as a result of cultural norms and beliefs upheld in most of the target communities. Women have more access to financing and credit resources than men, particularly because women engage in more local market trade activities, such as charcoal production, livestock and crop farming.

Women's participation and responsibilities in decision-making and management of water resources

There is minimal participation of women in decision-making positions in national and sub-national government agencies in the South-East Department. However, while women's overall participation in decision-making roles is less than men, it has been observed that this is also relatively dependent on whether there are women who uphold authoritative roles within communities. For example, there is considerable community-level participation of women in the commune of Jacmel Valley, where the mayor is a woman, whereas communes where women are not in high-ranking positions — such as Grand Gosier and Thiotte — women participate far less. The amendment of the Constitution of Haiti in 2012 instituted a 30% quota for women in public services, which means the appointment of at least one woman to local and municipal boards. While this obligation is often met, women are mostly appointed to low-ranking roles within these boards. This is also evident in the Water Supply and Sanitation Committees (CAEPAs), which are responsible for the management of drinking water supply in rural areas and settlements.

Potential impact of the project on women and other vulnerable groups

Considering the central role and involvement of women in drinking water supply in Haiti — and particularly the South-East Department — the interventions of the proposed project will positively impact women, the youth and other vulnerable groups. Increased availability of safe drinking water through improved aquifer recharge and diversified water sources (Outcome 3.1), will reduce the amount of time women and girls spend collecting water in other communities and enable more time for productive activities. The proposed project will also facilitate improved participation of women and strengthen gender-responsive climate change adaptation measures within several communities in the South-East Department — ensuring that women and the youth’s differential vulnerability to climate change and the associated impacts on drinking water availability are considered.

Gender Action Plan (GAP)

Following the gender analysis, a GAP was developed to ensure that the proposed project does not perpetuate gender inequalities and promotes women and youth empowerment in the project outcomes. Table 6 below provides a summary of the main elements of the GAP per outcome and output. A more detailed GAP is provided as Annex 10.

Table 6. Specific gender actions per output.

Project Outcome	Project Output	Gender Action	Indicators and Targets	Responsible	Timeline
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				Stakeholder	
Outcome 1.1: Improved awareness raising and knowledge and information management systems for the water sector to plan and respond to the impacts of climate change.	Output 1.1.1: Assessments, with gender-specific criteria, carried out at the national level to demonstrate the implications of different climate change scenarios on the availability of water.	Conduct research analysis on gender and climate change adaptation and management in the water sector	Indicators: Number of relevant studies and strategies conducted with clear gender considerations Target: Gender considerations are assessed and integrated in scenarios as specific chapters / paragraphs in all relevant national policy documents and regulatory framework, studies	DINEPA, UNDP	Year 1 and Year 2
	Output 1.1.2: A continuous information- and knowledge-generation system implemented to inform communities and the GoH on water management adaptation strategies and climate-resilient water supply.	Include gender dimension in all strategies and scenarios procurement announcements and terms of references with implementing partners Mainstream gender in all subsequent energy projects	Indicator: Percentage of scenarios and strategies with gender dimension. Target: At least 80% of all scenarios and strategies.		
	Output 1.1.3: Cost-benefit analyses of different adaptation strategies developed as per the predicted climate change scenarios identified under Output 1.1.1.	Provide training and sensitization for relevant regional and national institutions targeted at addressing the gendered impacts of climate change within the water sector.	Indicators: Percentage of women and youth taking part in training programmes Number of women becoming a trainer. Target: At least 30% of people trained are women and youth At least 2 women are trainers of the different training to be provided.	Project Coordination Unit	Year 1 to Year 5
	Output 1.1.4: Training programmes implemented for regional and national institutions on the extent of climate change impacts on freshwater availability — including methodologies and application of vulnerability assessments (as developed under Output 1.2.1 below) and adaptation solutions.	Support scientific research on gender and climate change resistant water supply.	Indicators: Number of studies with clear gender considerations conducted Target: Gender aspects are assessed and integrated in all reports and documents.	DINEPA, UNDP	Year 1 and Year 2
	Output 1.1.5: Inventory and quality characterisation of groundwater aquifers in the target area carried out by OREPA Sud.	Create an inventory of all water resources within target area.	Indicator: Number of women involved in the activity. Target: At least 2 women.	DINEPA, UNDP	Year 1 and Year
	Output 1.1.6: Scientific and technical studies on the impacts of climate change and options	Science-based technical studies will be conducted to assess the suitability of the adaptation	Indicator: Number of concrete methodologies/recommendations with clear gender considerations	DINEPA, UNDP	

	for adaptation management in the target area conducted, informing local decision-making on climate-resilient water supply.	strategies identified under Output 1.1.1 to effectively build the climate resilience of the South-East Department in terms of water availability, as well as evaluate their appropriateness to the context of this department	Target: At least 2 methodologies and/or recommendations with gender considerations		
Outcome 1.2: Target communities prepared to effectively plan responses to the impacts of climate change on their access to drinking water.	Output 1.2.1: Methodologies and instruments developed for community-level vulnerability assessments of drinking water supply.	Develop gender assessment methodology and tools for vulnerability assessment for water supply	Indicator: Developed gender assessment instrument and methodology Target: 100% complete by Year 1.	DINEPA, UNDP	Year 1
	Output 1.2.2: Participatory vulnerability assessments, carried out in xx target communities.	Support participatory vulnerability assessment in targeted communities.	Indicators: Percentage of women and youth consulted in the vulnerability assessment. Number of households headed by women consulted in the assessment Target: At least 20% of the community members consulted are women. At least 40% of households headed by women, are included in vulnerability assessment	DINEPA, UNDP	Year 1
	Output 1.2.3: Integrated water resource modelling conducted to demonstrate the projected long-term impacts of climate change on biodiversity, ecosystems and urban systems, as well as the relationships between these aspects and drinking water availability at the landscape level.	Conduct a comprehensive impact assessment study and modelling of climate change of climate change on biodiversity, ecosystems and urban systems, as well as the relationships between these aspects and drinking water availability at the landscape level with gender dimension.	Indicator Complete Modelling and Assessment Report. Target: 100% complete by Year 1.	DINEPA, UNDP	Year 1 and Year 2
Outcome 2.1: Key regulatory and policy instruments take into account the implications of climate change for drinking water supply and promote adaptive community-based management, Knowledge generation and dissemination	Output 2.1.1: Two regulatory instruments adjusted to account for the evolving needs and conditions resulting from climate change.	Update relevant national regulations on climate change to ensure they are gender sensitive	Indicators: Number of relevant regulations with clear climate change and gender considerations Target: Climate change and gender aspects integrated into the frameworks of at two water governance regulatory instruments (DINEPA and OREPA Sud) as specific paragraphs or chapters.	DINEPA, UNDP	Year 1 to Year 4
	Output 2.1.2: Strategic plans revised by sub-national regulatory institutions to prioritise adaptation	Ensure adequate representation of women and young people in the committee and the	Indicators: Number of women and youth aged 36 or lower Target:	DINEPA, UNDP	Year 1 to Year 3

	interventions based on evaluations of climate change impacts on water supply vulnerability.	development of the plans is done in an inclusive manner. The prioritisation of adaptation intervention should take into account the needs of women and young people.	At least 40% of committee members are women and/or youth.		
	Output 2.1.3: Frameworks and instruments developed and applied for planning and coordinating between national, regional, private and community organisations.	Mainstream gender in all subsequent water policies, plans and projects	Indicators: Percentage of water policies, plans and projects with gender dimensions. Target: At least 40% of all relevant water sector policies, plans and projects.	DINEPA, UNDP	Year 1 an Year 3
Outcome 2.2: Increased capacities in priority institutional stakeholders (DINEPA, OREPA, and 60 CAEPAs) with regards to the technical aspects of water resource management, territorial land-use planning, as well as management and application of information on water resources and climate change threats.	Output 2.2.1: Targeted programmes implemented to strengthen technical capacity of relevant institutions to incorporate climate change data into planning and management	Build the technical, managerial and regulatory capacity of key institutional stakeholders particularly women.	Indicators: Number of people trained. Percentage of women taking part in capacity building programmes. Number of capacity building programmes. Target: 80% of staff of key institutions. At least 30% of people trained are women. At least 2 per year.	DINEPA, UNDP	Year 1 and Year 5
	Output 2.2.2: Equipment provided to support the efficient application of technical capacity developed by training workshops	Provide relevant tools and resources for key institutions	Indicators: Percentage of tools and resources provided. Target: At least 80% of resources and equipment's provided	DINEPA, UNDP	Year 1 to Year 5
Outcome 2.3: Target communities equipped with instruments and mechanisms that ensure the sustainable management of water resources and associated infrastructure, and specific strategies to target female-headed households	Output 2.3.1: Community-based strategic and operational plans, with gender-specific criteria, developed to ensure the climate resilience of drinking water access	Develop a gender-sensitive strategic and operational plan for drinking water access	Indicators: Percentage of community involved in the consultation and exposed to announcement. Percentage of women consulted in the strategic and operational plan development. Percentage of female headed households consulted in the strategic and operational plan development Target: At least 80% of community members involved and exposed to strategic plan development 40% of households headed by women are consulted. At least 40% of community members consulted are women.	DINEPA, UNDP	Year 1 and Year 2
	Output 2.3.2: Consultative and consensus-based community-level engagement on land-use planning conducted, and	Conduct a participatory community water access territorial planning	Indicators: Percentage of community involved in territorial planning. Percentage of women <u>involved in territorial planning</u> or consulted during the process	DINEPA, UNDP	Year 1 to Year 3

	training programmes developed, for sustainable land uses in drainage and recharge zones to ensure the climate resilience of drinking water recharge.		Target: At least 80% of community members involved in planning. At least 40% of the community members consulted and involved in planning are women.		
	Output 2.3.3: Programmes applied to strengthen organisational capacities, and awareness of community-level stakeholders and organisations — reflecting gender-specific differences and promoting the equitable management of water resources and supply infrastructure under climate change conditions.	Design and roll out capacity building programmes and awareness initiatives targeted at addressing cultural beliefs and practices associated with water access	Indicators: Number of people trained and exposed to awareness initiatives. Percentage of women involved in capacity building programmes or exposed to awareness raising initiatives. Number of capacity building programmes conducted. Target: At least 80% of staff of key stakeholders and institutions. At least 30% of women trained and exposed to initiatives. At least 2 per year.	DINEPA, UNDP	Year 1 to Year 5
Outcome 3.1 Reliable access to drinking water ensured for local communities and households as a result of the implementation of climate change adaptation measures US\$3,379,563 (LDCF financing)	Output 3.1.1: 4,450 ha of aquifer recharge zones rehabilitated within the five target SAEs ⁹⁵ — of which 700 ha is restored through agroforestry	Facilitate the protection and rehabilitation of water sources and aquifer recharge zones using a gender dimension	Indicator: Percentage of water resources protected and rehabilitated with gender dimension. Number of land hectares protected. Target: At least 70% of water resources projected and rehabilitated using a gender dimension (ensuring women, young people are involved, and their livelihoods are not negatively impacted). 60% of land protected.	DINEPA, UNDP	Year 2 to Year 5
	Output 3.1.2: Gabions ⁹⁶ , percolation tanks ⁹⁷ and contour bunds ⁹⁸ constructed to promote aquifer recharge and to reinforce the protection of the five target Drinking Water Supply Systems (SAEPs)	The construction of infrastructure should not negatively impact the livelihoods of women and young people.	Indicators: Number of young people and women involved in the decision-making and construction of infrastructure Target: 40% of team is composed of young people below 36 of people and / or women	DINEPA, UNDP	Year 2 to Year 5

⁹⁵ More information on the geographical locations of these sources as well as the relevant affected communities is available in the Site Selection Annex.

⁹⁶ A gabion refers to a cage, cylinder or box filled with rocks, concrete, or sometimes sand and soil and is mostly used for temporary flood walls, silt filtration from runoff, and stabilising shorelines.

⁹⁷ A percolation tank is an artificial reservoir submerging a land area with adequate permeability, so that surface runoff is made to percolate and recharge the groundwater storage.

⁹⁸ Contour bunds involve the placement of lines of stones or soil along elevations in the landscape to capture and hold rainfall before it can become runoff.

	Output 3.1.3: Rooftop water harvesting systems and household cisterns installed in 350 households in target communities	Implement gender-sensitive water capture systems for communities	Indicator Number of systems implemented. Percentage of female headed households who benefit from structures and cisterns. Target: At least 20% of female-headed households benefit from installations.	DINEPA, UNDP	Year 2 to Year 5
	Output 3.1.4: Framework for financial plans for O&M of the five target SAEs to improve water-use efficiency and distribution, accompanied by awareness-raising and advocacy programmes	Targeted gender specific considerations in the awareness-raising and advocacy programmes are implemented	Indicator: Number of women and young people reached Target: At least 50% of women and young people attend the awareness and advocacy activities	DINEPA, UNDP	

Innovativeness, Sustainability and Potential for Scaling Up:

Innovativeness

Although there are several previous and on-going projects relating to the provision of water and sanitation services in Haiti, the scope of the projects do not incorporate the country's vulnerability to climate change and the subsequent impacts on the provision of water services. The proposed project will bridge this gap by implementing climate-resilient interventions to rehabilitate degraded watersheds and recharge zones, and enable the sustainability of water provision in targeted communities in the South-East Department. The proposed project will establish 700 ha of agroforests — for the restoration of watersheds and aquifer recharge zones — using high-value plant species (Output 3.1.1). The use of these specific species will enable more resilient livelihood development through the establishment of small-scale agroforestry value chains, resultantly providing the target communities with alternative and/or additional income-generating activities. This intervention — together with the proposed hard interventions under Output 3.1.2 — will be complemented by the diversification of potential water sources to maximise local water availability and reduce the competition of water needs — specifically by supporting conventional water supply methods with alternative methods such as household rainwater harvesting (Output 3.1.3).

The abovementioned interventions will be further complemented by strengthened technical capacity building initiatives and programmes across several governmental institutions. This will contribute to more innovative and appropriate climate risk assessments and modelling of Haiti's vulnerability to climate change. Additionally, strengthened knowledge of climate risks and improved awareness will enable climate-resilient and adaptive management of Haiti's water resources and other natural resources among key governmental institutions.

Moreover, this project is innovative in its commitment to the ecological transition, adaptation to climate change, preservation of water resources and at the same time protection of biodiversity. It proposes an adequate level of response to the environmental challenges of the territory and allows to initiate territorial prospective approaches on the uses of water and the conditions of its sustainable management, and to implement adequate adaptation measures.

Sustainability

The project design will contribute to ensuring institutional, economic and social sustainability of interventions beyond the project lifespan — in addition to maintaining and improving the environmental sustainability of the target watersheds in the context of climate change in the South-East Department. The sustainability of the project's interventions is an important element that will be supported by community ownership as promoted by the stakeholder engagement process during the project design. The sub-sections below provide detail on how the project will contribute to the sustainability of its interventions.

Institutional sustainability

Limited technical and organisational capacities within Haiti's governmental institutions present considerable barriers to improved climate resilience in Haiti. The proposed project comprises several interconnected outputs to ensure the institutional sustainability of its interventions. Firstly, climate change risks and appropriate adaptation interventions for Haiti will be mainstreamed into two existing regulatory frameworks to ensure the consideration of Haiti's vulnerability to climate change— as provided by Output 2.1.1. This will support the incorporation of climate change adaptation (CCA) interventions and their prioritisation into strategic action plans developed by sub-national regulatory institutions under Output 2.1.3. Secondly, considering the limited operational and human resource capacity in Haiti's government institutions, the project will prioritise developing and implementing frameworks and instruments which will enable the coordination between the public and private sectors — including national, regional, private and community-based organisation (under Output 2.1.3). With these stakeholders being integral to water resources management and supply, improved coordination and planning among them will allow for more sustainable and climate-resilient water resources management and supply. Thirdly, organisational capacities of community-level water governance structures — such as CAEPAs and CTEs — will be strengthened under Output 2.3.3 to support the implementation of the community-level land-use plans developed under Output 2.3.2. However, this will be supported by the establishment and implementation of biannual multi-stakeholder forums (MSFs) comprising DINEPA, OREPA Sud, target CAEPAs, CTEs, CBOs, NGOs, as well as community representatives — including farmers — as a platform for effective dialogue between these stakeholders. Lastly, the proposed project focuses on facilitating country ownership of the project by housing several initiatives under existing government institutions. This will be supported by extensive capacity building efforts to ensure that while institutions are responsible for the execution of activities, they are adequately capacitated to carry out their functions.

The abovementioned institutional capacity building will facilitate improved climate-resilient governance and adaptive management of water and other natural resources. This will be supported by an institutional-level information and knowledge-management system (Output 1.1.3) which will serve as a climate change data repository and provide science-based information to inform national and regional level decision-making and governance.

Economic sustainability

A 'willingness-to-pay'⁹⁹ assessment will be conducted during project implementation. Following this assessment, the project will develop and implement appropriate water consumption monitoring and tariffication systems in the target water distribution networks (SAEPs) to improve the efficiency of water use and distribution. The revenue from the tariffication system will be collected into a centralised fund and distributed between the relevant sub-national institutions managing the SAEPs to support the operations and maintenance (O&M) costs required for these SAEPs, ensuring efficient water supply across the networks. In addition, the project will facilitate and promote engagements between government institutions, civil society organisations, private sector and other project partners to promote IWRM, improved operational performance in the water sector and implementation of climate change-responsive, safe and affordable water services for communities in Haiti.

An Approach of Payment for environmental services was considered at the PIF stage and is still being considered. A small fee will be set according to the decision among the local members of the SAEP. It is therefore necessary to ensure that the financial contribution for the proposed service can be borne by the subscribers according to their level of vulnerability and in compliance with the regulations (ethical sustainability). The community members contributions will be used to maintain the technical assets in good condition after the life of the project. It also allows for the maintenance and renewal of the assets in order to guarantee the operation of the service for present and future users.

⁹⁹ This refers to the maximum price at or below which a consumer will buy one unit of a product. This assessment will inform the model of the water consumption monitoring system.

Social sustainability

The social sustainability of project interventions will be ensured through an emphasis on stakeholder participation in the project design, as well as during project implementation. The vulnerability assessments (VAs) to be conducted under Output 1.2.2 will involve extensive participation of target community members to enable improved understanding among vulnerable communities of the impacts of climate change on water availability and the consequent impacts on their households and livelihoods. Through this intervention, communities are better equipped to develop the strategic and operational plans under Output 2.3.1, which will promote the conservation and sustainable management of water and target sub-catchment areas. The territorial planning conducted in Output 2.3.2 will also involve a community-level participatory approach to ensure consensus-based identification and permission of appropriate land uses in target watersheds. Moreover, given that ~66% of Haiti's population is dependent on agriculture for subsistence, as well as their livelihoods, establishing agroforests under Output 3.1.1 will embrace the livelihoods of communities while enabling them to rehabilitate 5,000 ha of degraded catchment areas, resultantly increasing their resilience to the impacts of climate change. The project will implement gender-responsive measures across community-level stakeholder participation to ensure that the gender-specific vulnerabilities of men, women and the youth are taken into consideration, as well as their differentiated needs. In addition, by emphasising stakeholder participation, the project will ensure adequate community buy-in and ownership of interventions, further ensuring the social sustainability of these interventions and their impact on the communities.

Scalability

Considering the vulnerability of Haiti's water supply systems — both in terms of the decreasing functionality of water distribution infrastructure, as well as reduced water availability — the interventions of the proposed project have considerable potential to be scaled up at municipal, regional and national levels. The relatively small scale at which the interventions will be implemented at — particularly the 'hard' interventions (Outcome 3.1) — will serve as a pilot capable of being upscaled and replicated across Haiti, and in more vulnerable communities. The national-level climate change scenario analyses conducted (Output 1.1.1) will enable an improved understanding of Haiti's vulnerability to climate change and consequently, continued development of appropriate climate change adaptation options which can be adopted and tailored accordingly across Haiti. This project will provide substantial foundational tools to support the upscaling of climate resilience across Haiti beyond the life span of this project, particularly through strengthened institutional capacity and the mainstreaming of climate change and gender considerations in natural resources management.

This project is intended to be a pilot project and very innovative in the field. It will facilitate the application of the technique across other regions of the country in order to not only improve access to drinking water, but also to strengthen institutional capacity and the integration of climate change into our public policy programs.

V. PROJECT RESULTS FRAMEWORK

Table 7. Project results framework.

This project will contribute to the following Sustainable Development Goal (s): SDG 3: Good Health and Well-being; SDG 5: Gender Equality; SDG 6: Clean Water and Sanitation; SDG 11: Sustainable Cities and Communities; SDG 13 Climate Action; SDG 15 Life on Land				
This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD): Outcome: 3: Strengthened institutions to gradually ensure universal access to basic services; Outcome: 5: Reducing the risks of conflict and natural disasters, notably those linked to climate change.				
	Objective and Outcome Indicators (no more than a total of 20 indicators)	Baseline	Mid-term Target	End of Project Target
Project Objective: Increase water availability in target watersheds in Haiti's South-East Department by conserving critical water recharge zones and aquifers, strengthening water resource management capacity, and enhancing the climate resilience of water distribution and storage infrastructure to ensure reliable access to water resources for target communities.	Mandatory GEF Core Indicator 1: 130,000 direct project beneficiaries disaggregated by gender (individual people)	0	30,000	130,000 people (men and women living in communities surrounding five water sources in Haiti's South-East Department) with enhanced climate resilient water availability
	Mandatory GEF Core Indicator 2: Area of landscapes under climate-resilient management (ha)	0 ha of land rehabilitated or protected	100	700 ha land rehabilitated through agroforestry and 3,840 ha land reforested
Project Component 1	Improved understanding and awareness of the water sector vulnerability to climate change			
Outcome 1.1 <i>Improved awareness raising and knowledge and information management systems for the water sector to plan and respond to the impacts of climate change.</i>	Indicator 3: Number of stakeholders trained or made aware of climate change impacts and appropriate adaptation responses	0 people trained in water governance bodies at the national, regional, and local levels. The water governance bodies include the MoE, DINEPA, OREPA Sud, CAEPAs, CTEs and CBOs.	40 people trained in water governance bodies at the national, regional, and local levels. The water governance bodies include the MoE, DINEPA, OREPA Sud, CAEPAs, CTEs and CBOs.	80 people trained in water governance bodies at the national, regional, and local levels. The water governance bodies include the MoE, DINEPA, OREPA Sud, CAEPAs, CTEs and CBOs.
Outputs to achieve Outcome 1.1	<i>Output 1.1.1: Assessments, with gender-specific criteria, carried out at the national level to demonstrate the implications of different climate change scenarios on the availability of water.</i> <i>Output 1.1.2: A continuous information- and knowledge-generation system implemented to inform communities and the GoH on water management adaptation strategies and climate-resilient water supply.</i> <i>Output 1.1.3: Cost-benefit analyses of different adaptation strategies developed as per the predicted climate change scenarios identified under Output 1.1.1.</i> <i>Output 1.1.4: Training programmes implemented for regional and national institutions on the extent of climate change impacts on freshwater availability — including methodologies and application of vulnerability assessments (as developed under Output 1.2.1 below) and adaptation solutions.</i> <i>Output 1.1.5: Inventory and quality characterisation of groundwater aquifers in the target area carried out by OREPA Sud.</i> <i>Output 1.1.6: Scientific and technical studies on the impacts of climate change and options for adaptation management in the target area conducted, informing local decision-making on climate-resilient water supply.</i>			

Outcome 1.2 <i>Target communities prepared to effectively plan responses to climate change impacts on their access to drinking water.</i>	Indicator 4: Number of communities/towns informed to more effectively plan for climate change adaptation through technical studies	5 Communities with increased access to technical information for effective adaptation planning	10 Communities with increased access to technical information for effective adaptation planning	20 Communities with increased access to technical information for effective adaptation planning
Outputs to achieve Outcome 1.2	<i>Output 1.2.1: Methodologies and instruments developed for community-level vulnerability assessments (VAs) of drinking water supply.</i> <i>Output 1.2.2: Participatory climate change vulnerability assessments (VAs) carried out in the project's target communities.</i> <i>Output 1.2.3: Integrated water resource modelling conducted to demonstrate the projected long-term impacts of climate change on biodiversity, ecosystems, and urban systems, as well as the relationships between these aspects and drinking water availability at the landscape level.</i>			
Project Component 2	<i>Strengthening of the regulatory, policy and institutional capacity framework at national, regional, and local levels for the effective management of drinking water under climate change conditions; and monitoring</i>			
Outcome 2.1 <i>Key regulatory and policy instruments adjusted to consider the implications of climate change for drinking water supply and promote adaptive community-based management, Knowledge generation and dissemination</i>	Indicator 5: Number of policies, plans or development frameworks that mainstream climate resilience	0 revisions of the regulatory frameworks, to mainstream climate resilience, of two water regulatory bodies — DINEPA and OREPA Sud	2 revisions of the regulatory frameworks, to mainstream climate resilience, of two water regulatory bodies — DINEPA and OREPA Sud	2 revisions of the regulatory frameworks, to mainstream climate resilience, of two water regulatory bodies — DINEPA and OREPA Sud
	Indicator 6: Number of community-based strategic and operational plans, with gender-specific criteria, developed and implemented to ensure the climate resilience of drinking water access.	0 strategic and operational plans of local- and community-level water governance bodies, to ensure the climate resilience of drinking water access, developed and implemented	5 strategic and operational plans of local- and community-level water governance bodies, to ensure the climate resilience of drinking water access, developed and implemented	5 strategic and operational plans of local- and community-level water governance bodies, to ensure the climate resilience of drinking water access, developed and implemented
Outputs to achieve Outcome 2.1	<i>Output 2.1.1: Two regulatory instruments adjusted to account for the evolving contextual needs and conditions resulting from climate change.</i> <i>Output 2.1.2: Strategic plans revised by sub-national regulatory institutions to prioritise adaptation interventions based on evaluations of climate change impacts on water supply vulnerability.</i> <i>Output 2.1.3: Frameworks and instruments developed and applied for planning and coordination between national, regional, private and community-based organisations.</i>			
Outcome 2.2 <i>Increased capacities in priority institutional stakeholders (DINEPA, OREPA Sud, CAEPAs and CTEs) with regards to the technical aspects of water resource management, territorial land-use planning, as well as management and application of information on</i>	Indicator 7: Number of people in core institutions trained in implementing climate-resilient water resource management and sustainable land-use planning	0 institutional staff with increased capacity for climate resilient water resource management	40 institutional staff with increased capacity for climate resilient water resource management	100 institutional staff with increased capacity for climate resilient water resource management

<i>water resources and climate change threats.</i>				
Outputs to achieve Outcome 2.2	<i>Output 2.2.1: Targeted programmes implemented to strengthen technical capacity of relevant institutions to incorporate climate change data into planning and management.</i> <i>Output 2.2.2: Equipment provided to support the efficient application of technical capacity developed by training workshops.</i>			
Outcome 2.3 <i>Target communities equipped with instruments and mechanisms that ensure the sustainable management of water resources and associated infrastructure, as well as specific strategies to target female-headed households.</i>	Indicator 8: Number of community decision-making groups established to facilitate ongoing stakeholder participation in climate resilient water resource management	10 community groups for inclusive, ongoing sustainable water resource management established	20 community groups for inclusive, ongoing sustainable water resource management established	40 community groups for inclusive, ongoing sustainable water resource management established
Outputs to achieve Outcome 2.3	<i>Output 2.3.1: Community-based strategic and operational plans, with gender-specific criteria, developed to ensure the climate resilience of drinking water access.</i> <i>Output 2.3.2: Consultative and consensus-based community-level engagement on land-use planning conducted, and training programmes developed, for sustainable land uses in drainage and recharge zones to ensure the climate resilience of drinking water recharge.</i> <i>Output 2.3.3: Programmes implemented to strengthen organisational capacities and awareness of community-level stakeholders and organisations — reflecting gender-specific differences and promoting the equitable management of water resources and supply infrastructure under climate change conditions.</i>			
Project Component 3	<i>Identification and promotion of practices for the conservation, management and supply of drinking water adapted to predicted climate change scenarios</i>			
Outcome 3.1 <i>Reliable access to drinking water ensured for target communities and households as a result of the implementation of climate change adaptation measures.</i>	Indicator 9: Number of water distribution systems (SAEPs) protected against climate change-induced flooding through physical reinforcement	0 SAEPs reinforced against climate change impacts	2 SAEPs reinforced against climate change impacts	5 SAEPs reinforced against climate change impacts
	Indicator 10: Number of beneficiaries with access reliable access to clean drinking water	0 people benefiting from the project's water treatment programme	30 000 people benefiting from the project's water treatment programme	130 000 people benefiting from the project's water treatment programme
	Indicator 11: Number of households with increased access to freshwater resources during dry periods.	0 households with drought resilient freshwater supply	35 households with drought resilient freshwater supply	350 households with drought resilient freshwater supply
Outputs to achieve Outcome 3.1	<i>Output 3.1.1: 4,540 ha of aquifer recharge zones rehabilitated within the five target SAEPs¹⁰⁰ — of which 700 ha is restored through agroforestry.</i> <i>Output 3.1.2: Gabions, percolation tanks, contour bunds and septic tanks constructed to promote aquifer recharge and to reinforce the protection of the five target Drinking Water Supply Systems (SAEPs).</i> <i>Output 3.1.3: Rooftop water harvesting systems and household cisterns installed in 350 households in target communities.</i> <i>Output 3.1.4: Framework for financial plans for O&M of the five target SAEPs to improve water-use efficiency and distribution, accompanied by awareness-raising and advocacy programmes.</i> <i>Output 3.1.5: Programmes for treating water supplies with sodium hypochlorite implemented to reduce water pollution-related health risks.</i>			

¹⁰⁰ More information on the geographical locations of these sources as well as the relevant affected communities is available in the Site Selection Annex.

VI. MONITORING AND EVALUATION (M&E) PLAN

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP \(including guidance on GEF project revisions\)](#) and [UNDP Evaluation Policy](#). **The UNDP Country Office is responsible for ensuring full compliance with all UNDP project M&E requirements including project monitoring, UNDP quality assurance requirements, quarterly risk management, and evaluation requirements.**

Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the [GEF Monitoring Policy](#) and the [GEF Evaluation Policy](#) and other [relevant GEF policies](#)¹⁰¹. The M&E plan and budget included below will guide the GEF-specific M&E activities to be undertaken by this project.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed – including during the Project Inception Workshop - and will be detailed in the Inception Report.

Minimum project monitoring and reporting requirements as required by the GEF:

Inception Workshop and Report: A project inception workshop will be held within 2 months from the First disbursement date, with the aim to:

- Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
- Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
- Review the results framework and monitoring plan.
- Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
- Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework (where relevant) and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
- Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
- Plan and schedule Project Board meetings and finalize the first-year annual work plan. Finalize the TOR of the Project Board.
- Formally launch the Project.

GEF Project Implementation Report (PIR):

The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. UNDP will undertake quality assurance of the PIR before submission to the GEF. The PIR submitted to the GEF will be shared with the Project Board. UNDP will conduct a quality review of the PIR, and this quality review and feedback will be used to inform the preparation of the subsequent annual PIR.

GEF Core Indicators:

The GEF Core indicators included as Annex will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent groundtruthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF [website](#).

¹⁰¹ See https://www.thegef.org/gef/policies_guidelines

Independent Mid-term Review (MTR):

The terms of reference, the review process and the final MTR report will follow the standard UNDP templates and UNDP guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#).

The evaluation will be ‘independent, impartial and rigorous’. The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by *November 2024*. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report’s completion.

Terminal Evaluation (TE):

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). TE should be completed 3 months before the estimated operational closure date, set from the signature of the ProDoc and according to the duration of the project. Provisions should be taken to complete the TE in due time to avoid delay in project closure. Therefore, TE must start no later than 6 months to the expected date of completion of the TE (or 9 months prior to the estimated operational closure date).

The evaluation will be ‘independent, impartial and rigorous’. The evaluators that UNDP will hire to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/NCE-VF Directorate.

The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by *July, 2027*. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report’s completion.

Final Report:

The project’s terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project’s deliverables and disclosure of

information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy¹⁰² and the GEF policy on public involvement¹⁰³.

¹⁰² See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

¹⁰³ See https://www.thegef.org/gef/policies_guidelines

Monitoring Plan: The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored by the Project Management Unit annually, and will be reported in the GEF PIR every year, and will be evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. Project risks, as outlined in the risk register, will be monitored quarterly.

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project Objective: Increase water availability in target watersheds in Haiti's South-East Department by conserving critical water recharge zones and aquifers, strengthening water resource management capacity, and enhancing the climate resilience of water distribution and storage infrastructure to ensure reliable access to water resources for target communities.	Indicator 1: 130,000 direct project beneficiaries disaggregated by gender (individual people)	Mid-term Target: 30,000 End of Project Target: 130,000	This indicator is the number of people estimated to be dependent on the five selected target SAEs from drinking water access (see Annex 12a)	Stakeholder Engagement Plan actions, vulnerability assessment reports, workshop attendance registers	Quarterly	Project Manager/ Project Monitoring & Evaluation Officer / Project Community Liaison Officer	Project Monitoring & Evaluation Officer report / Printed outputs from workshops / Attendance registers	1. Human resources trained through the project are retained in partner institutions 2. Future climate change may be worse than predicted, resulting in adaptation interventions being less effective 3. Communities support project interventions during and after project implementation despite limited immediate benefits 4. Social unrest, instability or political turnover does not disrupt project activities
	Indicator 2: Area of landscapes under climate-resilient management (ha)	MT: 300 ha ET:	The indicator represents the amount of degraded land to where tree cover is to be	GIS data, site visits of project implementation area	Every 6 months	Project Manager/ Project Monitoring & Evaluation	Project Monitoring & Evaluation Officer report	5. Interventions result in the restoration of forests and enhancement

¹⁰⁴ Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
		4,540 ha	increased as part of the agroforestry and reforestation activities of the project. The numbers were derived from the SWAT modelling done during the PPG phase of the project (see Annex 12b).			Officer / Local foresters		ecosystem services provision 6. Sufficient survival rates of trees established 7. Existing projects will adequately address baseline drivers
Project Outcome 1.1 Improved awareness raising and knowledge and information management systems for the water sector to plan and respond to the impacts of climate change.	Indicator 3: <i>Number of stakeholders trained or made aware of climate change impacts and appropriate adaptation responses</i>	MT: 20 stakeholders ET: 80 stakeholders	This is an indicator for the number of people trained in water governance bodies at the national, regional, and local levels. The water governance bodies include the MoE, DINEPA, OREPA Sud, CAEPAs, CTEs and CBOs. It was estimated that 5 people from each of these water governance structures would be trained or aware of climate change impacts and appropriate adaptation responses.	Training workshop attendance registers	Monthly	Project Manager/ Project Monitoring & Evaluation Officer / Project Community Liaison Officer	Project Monitoring & Evaluation Officer report / training workshop attendance registers	8. Human resources trained under the project's capacity development outputs are retained and operational in the targeted institutions, or that the acquired institutional knowledge is maintained in the long term. 9. The demonstration of interventions, training and knowledge sharing under the project increases the capacity of targeted institutions to plan and implement climate-resilient water resource management. 10. The

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
								awareness-raising campaign is successfully implemented at the national level, with national and local stakeholders absorbing and understanding the information provided.
Project Outcome 1.2 Target communities prepared to effectively plan responses to climate change impacts on their access to drinking water.	Indicator 4: Number of communities/towns informed to more effectively plan for climate change adaptation through technical studies	MT: 10 communities ET: 20 communities	This indicator represents the number of communities/towns that will receive up-to-date information and be capacitated to more effectively plan for climate change adaptation. The target numbers were derived from information available on the target SAEPs in the Site Selection Annex.	Training workshop attendance registers	Monthly	Project Manager/ Project Monitoring & Evaluation Officer	Results and reports of studies and analyses conducted	11. Values are captured and reported on accurately
Project Outcome 2.1 Key regulatory and policy instruments adjusted to consider the implications of climate change for drinking water supply and	Indicator 5: Number of policies, plans or development frameworks that mainstream climate resilience	MT: 2 ET: 2	This indicator represents the revisions of the regulatory frameworks, to mainstream climate resilience, of two water regulatory bodies — DINEPA and OREPA Sud.	Developed plans, policies and agendas	Quarterly from year 2 of project implementation onwards	Project Manager/ Project Monitoring & Evaluation Officer	Project Monitoring & Evaluation Officer report	12. The proposed project's exit strategy will be sufficient to ensure that state and non-state actors at all levels are enabled to continue implementing and maintaining climate-resilient water resource

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
promote adaptive community-based management, Knowledge generation and dissemination								management and adaptation solutions beyond the project's lifespan. 13. Government agencies will adopt policies and plans developed by the project at all levels, and national political commitment and support for the development of project approaches will remain very high.
	Indicator 6: <i>Number of community-based strategic and operational plans, with gender-specific criteria, developed and implemented to ensure the climate resilience of drinking water access.</i>	MT: 5 plans ET: 5 plans	This indicator represents the development and implementation of strategic and operational plans of local- and community-level water governance bodies, to ensure the climate resilience of drinking water access. The target numbers were derived from the numbers of SAEs targeted by the project.	Developed strategic and operational plans, and Project M&E Officer reports.	Quarterly from year 3 onwards	Project Manager/ Project Monitoring & Evaluation Officer / Project Community Liaison Officer	Project Monitoring & Evaluation Officer reports	14. Communities support project interventions during and after project implementation despite limited immediate benefits. 15. Communities fully understand and retain the information provided during trainings and are willing to implement the land-use and water management plans developed by the project.
Project Outcome 2.2 Increased capacities in	Indicator 7: <i>Number of people in core institutions trained in implementing</i>	MT: 40 institutional staff	This indicator represents the number of core institutional staff	Training workshop attendance registers	Every 6 months	Project Manager/ Project Monitoring &	Project Monitoring & Evaluation Officer report	16. Human resources trained under the project's capacity

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
priority institutional stakeholders (DINEPA, OREPA Sud, CAEPAs and CTEs) with regards to the technical aspects of water resource management, territorial land-use planning, as well as management and application of information on water resources and climate change threats.	<i>climate-resilient water resource management and sustainable land-use planning</i>	ET: 100 institutional staff	capacitated in implementing climate-resilient water resource management and sustainable land-use planning through focussed training. It was estimated that 25 people from each of these water governance structures would be trained or aware of climate change impacts and appropriate adaptation responses.			Evaluation Officer / Project Community Liaison Officer	/ training workshop attendance registers	development outputs are retained and operational in the targeted institutions, or that the acquired institutional knowledge is maintained in the long term. 17. The demonstration of interventions, training and knowledge sharing under the project increases the capacity of targeted institutions to plan and implement climate-resilient water resource management. 18. The awareness-raising campaign is successfully implemented at the national level, with national and local stakeholders absorbing and understanding the information provided.
Project Outcome 2.3 Target communities	Indicator 8: <i>Number of community decision-making groups established to</i>	MT: 20 community groups	This indicator represents the number of communities groups	Stakeholder Engagement Plan actions, workshop attendance registers	Quarterly during years 2 and 3	Project Manager/ Project Monitoring &	Project Monitoring & Evaluation Officer report	19. Human resources trained through the project are retained in

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
equipped with instruments and mechanisms that ensure the sustainable management of water resources and associated infrastructure, as well as specific strategies to target female-headed households.	<i>facilitate ongoing stakeholder participation in climate resilient water resource management</i>	ET: 40 community groups	that will be established to ensure inclusive, ongoing sustainable water resource management beyond the lifespan of the project. The target numbers were derived from information available on the target SAEPs in the Site Selection Annex.			Evaluation Officer / Project Community Liaison Officer	/ training workshop attendance registers	partner institutions 20. Communities support project interventions during and after project implementation despite limited immediate benefits 21. Social unrest, instability or political turnover does not disrupt project activities
Project Outcome 3.1 Reliable access to drinking water ensured for target communities and households as a result of the implementation of climate change adaptation measures.	Indicator 9: <i>Number of water distribution systems (SAEPs) protected against climate change-induced flooding through physical reinforcement</i>	MT: 2 SAEPs ET: 5 SAEPs	This indicator represents the number of water distribution systems (SAEPs) protected against climate change-induced flooding through physical reinforcement. The target numbers were derived from information available on the target SAEPs in the Site Selection Annex.	Site visits	Quarterly from year 3 onwards	Project Manager	Project Manager report, invoices	22. Existing projects will adequately address baseline drivers 23. Future climate change may be worse than predicted, resulting in adaptation interventions being less effective
	Indicator 10: <i>Number of beneficiaries with access reliable access to clean drinking water</i>	MT: 30 000 ET: 130 000	This indicator is the number of beneficiaries that will benefit from the project's water treatment programme, thereby having increased access to clean water	Site visits	Quarterly from year 2 onwards	Project Manager	Project Manager report	24. Existing projects will adequately address baseline drivers

Results Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods ¹⁰⁴	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			for household use. The target numbers were derived from information available on the target SAEPs in the Site Selection Annex.					
	Indicator 11: <i>Number of households with increased access to freshwater resources during dry periods.</i>	MT: 35 households ET: 350 households	This indicator is the number of households that will have water harvesting systems installed by the project as a measure to increase the resilience of the target communities against drought events. The target numbers were derived from information available on the target SAEPs in the Site Selection Annex.	Site visits and community surveys	Quarterly from year 3 onwards	Project manager	Project Manager report, invoices	25. Existing projects will adequately address baseline drivers

Table 8. Monitoring and evaluation of plan and budget

Monitoring and Evaluation Budget for project execution:		
GEF M&E requirements to be undertaken by Project Management Unit (PMU)	Indicative costs (US\$)	Time frame
Inception Workshop and Report	<i>None</i>	Inception Workshop within 2 months of the First Disbursement
M&E required to report on progress made in reaching GEF core indicators and project results included in the project results framework	<i>None</i>	Annually and at mid-point and closure.
Preparation of the annual GEF Project Implementation Report (PIR)	<i>None</i>	Annually typically between June-August
Monitoring of <i>project safeguards management frameworks and gender action plans</i>	<i>None</i>	On-going.
Supervision missions	<i>10,000</i>	Annually
Learning missions	<i>None</i>	As needed
Independent Mid-term Review (MTR)	<i>40,250</i>	<i>November, 2024</i>
Independent Terminal Evaluation (TE)	<i>40,250</i>	<i>July, 2027</i>
Project M&E Officer and Local expert for exit strategy	<i>82,000</i>	<i>Year 1 to year 5</i>
TOTAL indicative COST (3.8% of the Total Grant)	<i>172,500</i>	

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Section 1: General roles and responsibilities in the projects' governance mechanism

Implementing Partner: The Implementing Partner for this project is Helvetas by delegation of the Ministry of Environment in Haiti.

The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document. The Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
- Overseeing the management of project risks as included in this project document and new risks that may emerge during project implementation.
- Procurement of goods and services, including human resources.
- Financial management, including overseeing financial expenditures against project budgets.
- Approving and signing the multiyear workplan.
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

NGO fees are not included in the project budget because GEF resources cannot cover an implementing partner's administrative/overhead costs. NGO's administrative/overhead costs will instead be covered by PMC co-financing. On no account can a fee, or any share of it, be paid from GEF resources to the NGO during the project implementation.

Responsible Parties:

N/A

Project stakeholders and target groups:

Stakeholder engagement during the project preparation phase was facilitated by a series of meetings and field visits which occurred between December 2020 and February 2021. The objective of the meetings and fields visits was to assess and collect data on the 10 pre-selected water sources. To ensure that appropriate and required data was collected, the field visits were underpinned by extensive bilateral meetings and focus group discussions with several stakeholders. These stakeholders included: i) local communities and community-based organisations (CBOs); ii) non-governmental and civil society organisations (NGOs and CSOs); iii) gender-based organisations; iv) municipal officials; and v) regional government officials.

Continuous engagement with stakeholders — particularly community beneficiaries and the public sector — will be maintained during the project implementation phase, primarily in the form of capacity building, awareness raising and information sharing, as well as institutional strengthening. This SEP will ensure consistent and ongoing engagement with key stakeholders to: i) facilitate information sharing and awareness raising regarding climate change adaptation (CCA) interventions; ii) establish community ownership of project interventions; iii) promote gender equality and the empowerment of marginalised groups including the youth and people with disabilities; and iv) enhance complementarity with other ongoing initiatives.

Ministry of Environment (MoE) and National Directorate of Water Supply and Sanitation (DINEPA): These institutions will form the technical committee which will discuss project strategies, exchange experiences, monitor

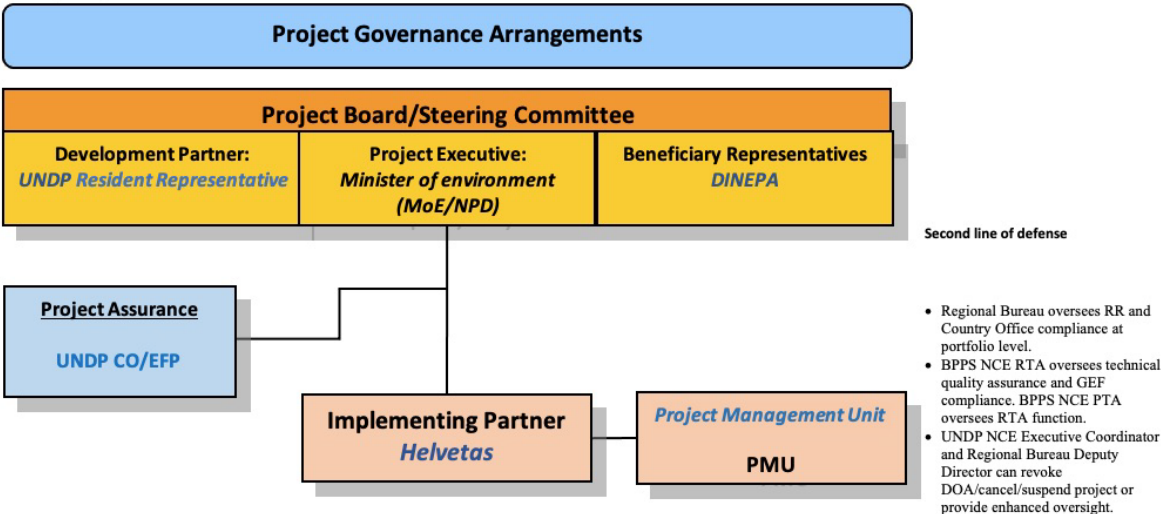
progress and identify lessons. This committee will meet at least two times per year, around specific themes and to support project implementation and provide co-financing to the project. MoE and DINEPA have signed a cooperation protocol for the development of the project. They will mainstream climate change adaptation and sustainable water management principles into their policies and strategies and benefit from capacity development under the project.

Local communities: Local communities and local community-based water management organisations are the direct beneficiaries of the project. Buy-in from this stakeholder group into the project interventions is necessary, as without their support and participation, the interventions will not be successful. They will benefit from awareness-raising campaigns, capacity-building programmes and interventions for improved drinking water access, such as community plans for the sustainable management of drinking water, reforestation around aquifer recharge zones, the installation of rooftop rainwater capture systems and domestic cisterns. *More detailed Stakeholder engagement analysis is available in Annex 8.*

UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes overseeing project execution undertaken by the Implementing Partner to ensure that the project is being carried out in accordance with UNDP and GEF policies and procedures and the standards and provisions outlined in the Delegation of Authority (DOA) letter for this project. **The UNDP GEF Executive Coordinator, in consultation with UNDP Bureaus and the Implementing Partner, retains the right to revoke the project DOA, suspend or cancel this GEF project.** UNDP is responsible for the Project Assurance function in the project governance structure and presents to the Project Board and attends Project Board meetings as a non-voting member.

The UNDP Resident Representative assumes full responsibility and accountability for oversight and quality assurance of this Project and ensures its timely implementation in compliance with the GEF-specific requirements and UNDP’s Programme and Operations Policies and Procedures (POPP), its Financial Regulations and Rules and Internal Control Framework. A representative of the UNDP Country Office will assume the assurance role and will present assurance findings to the Project Board, and therefore attends Project Board meetings as a non-voting member.

Section 2: Project governance structure



Section 3: Segregation of duties and firewalls vis-à-vis UNDP representation on the project board:

As noted in the [Minimum Fiduciary Standards for GEF Partner Agencies](#), in cases where a GEF Partner Agency (i.e. UNDP) carries out both implementation oversight and execution of a project, the GEF Partner Agency (i.e. UNDP) must separate its project implementation oversight and execution duties, and describe in the relevant project document a: 1) Satisfactory institutional arrangement for the separation of implementation oversight and executing functions in different departments of the GEF Partner Agency; and 2) Clear lines of responsibility, reporting and accountability within the GEF Partner Agency between the project implementation oversight and execution functions.

In this case, UNDP is only performing an implementation oversight role in the project vis-à-vis our role in the project board and in the project assurance function and therefore a full separation of project implementation oversight and execution duties has been assured.

Section 4: Roles and Responsibilities of the Project Organization Structure:

- a) **Project Board:** All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on monitoring and evaluation, and implementation issues to ensure quality delivery of results. The Project Board (also called the Project Steering Committee) is the most senior, dedicated oversight body for a project.

The two main (mandatory) roles of the project board are as follows:

- 1) **High-level oversight of the execution of the project by the Implementing Partner** (as explained in the [“Provide Oversight”](#) section of the POPP). This is the primary function of the project board and includes annual (and as-needed) assessments of any major risks to the project, and decisions/agreements on any management actions or remedial measures to address them effectively. The Project Board reviews evidence of project performance based on monitoring, evaluation and reporting, including progress reports, evaluations, risk logs and the combined delivery report. The Project Board is responsible for taking corrective action as needed to ensure the project achieves the desired results.
- 2) **Approval of strategic project execution decisions of the Implementing Partner** with a view to assess and manage risks, monitor and ensure the overall achievement of projected results and impacts and ensure long term sustainability of project execution decisions of the Implementing Partner (as explained in the [“Manage Change”](#) section of the POPP).

Requirements to serve on the Project Board:

- ✓ Agree to the Terms of Reference of the Board and the rules on protocols, quorum and minuting.
- ✓ Meet annually; at least once.
- ✓ Disclose any conflict of interest in performing the functions of a Project Board member and take all measures to avoid any real or perceived conflicts of interest. This disclosure must be documented and kept on record by UNDP.
- ✓ Discharge the functions of the Project Board in accordance with UNDP policies and procedures.
- ✓ Ensure highest levels of transparency and ensure Project Board meeting minutes are recorded and shared with project stakeholders.

Responsibilities of the Project Board:

- ✓ Consensus decision making:
 - The project board provides overall guidance and direction to the project, ensuring it remains within any specified constraints, and providing overall oversight of the project implementation.
 - Review project performance based on monitoring, evaluation and reporting, including progress reports, risk logs and the combined delivery report;
 - The project board is responsible for making management decisions by consensus.

- 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, best value money, fairness, integrity, transparency and effective international competition.
- In case consensus cannot be reached within the Board, the UNDP representative on the board will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.
- ✓ **Oversee project execution:**
 - Agree on project manager's tolerances as required, within the parameters outlined in the project document, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded.
 - Appraise annual work plans prepared by the Implementing Partner for the Project; review combined delivery reports prior to certification by the implementing partner.
 - Address any high-level project issues as raised by the project manager and project assurance;
 - Advise on major and minor amendments to the project within the parameters set by UNDP and the donor and refer such proposed major and minor amendments to the UNDP BPPS Nature, Climate and Energy Executive Coordinator (and the GEF, as required by GEF policies);
 - Provide high-level direction and recommendations to the project management unit to ensure that the agreed deliverables are produced satisfactorily and according to plans.
 - Track and monitor co-financed activities and realisation of co-financing amounts of this project.
 - Approve the Inception Report, GEF annual project implementation reports, mid-term review and terminal evaluation reports.
 - Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.
- ✓ **Risk Management:**
 - Provide guidance on evolving or materialized project risks and agree on possible mitigation and management actions to address specific risks.
 - Review and update the project risk register and associated management plans based on the information prepared by the Implementing Partner. This includes risks related that can be directly managed by this project, as well as contextual risks that may affect project delivery or continued UNDP compliance and reputation but are outside of the control of the project. For example, social and environmental risks associated with co-financed activities or activities taking place in the project's area of influence that have implications for the project.
 - Address project-level grievances.
- ✓ **Coordination:**
 - Ensure coordination between various donor and government-funded projects and programmes.
 - Ensure coordination with various government agencies and their participation in project activities.

Composition of the Project Board: The composition of the Project Board must include individuals assigned to the following three roles:

1. Project Executive: This is an individual who represents ownership of the project and chairs (or co-chairs) the Project Board. The Executive usually is the senior national counterpart for nationally implemented projects (typically from the same entity as the Implementing Partner), and it must be UNDP for projects that are direct implementation (DIM). In exceptional cases, two individuals from different entities can co-share this role and/or co-chair the Project Board. If the project executive co-chairs the project board with representatives of another category, it typically does so with a development partner representative. The Project Executive is: James Cadet, Minister of Environment.

2. Beneficiary Representative(s): Individuals or groups representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often representatives from civil society, industry associations, or other government entities benefiting from the

project can fulfil this role. There can be multiple beneficiary representatives in a Project Board. The Beneficiary representative (s) is/are: Representative of DINEPA.

3. Development Partner(s): Individuals or groups representing the interests of the parties concerned that provide funding, strategic guidance and/or technical expertise to the project. The Development Partner(s) is/are: Nick Rene Hartmann, UNDP-Haiti Resident Representative.

b) Project Assurance: Project assurance is the responsibility of each project board member; however, UNDP has a distinct assurance role for all UNDP projects in carrying out objective and independent project oversight and monitoring functions. UNDP performs quality assurance and supports the Project Board (and Project Management Unit) by carrying out objective and independent project oversight and monitoring functions, including compliance with the risk management and social and environmental standards of UNDP. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. Project assurance is totally independent of project execution.

A designated representative of UNDP playing the project assurance role is expected to attend all board meetings and support board processes as a non-voting representative. It should be noted that while in certain cases UNDP's project assurance role across the project may encompass activities happening at several levels (e.g. global, regional), at least one UNDP representative playing that function must, as part of their duties, specifically attend board meeting and provide board members with the required documentation required to perform their duties. The UNDP representative playing the main project assurance function is/are: Dorine Jn Paul, Programme Officer. (EFP)

c)Project Management – Execution of the Project: The Project Manager (PM) (also called project coordinator) is the senior most representative of the Project Management Unit (PMU) and is responsible for the overall day-to-day management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The project manager typically presents key deliverables and documents to the board for their review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk registers.

A designated representative of the PMU is expected to attend all board meetings and support board processes as a non-voting representative.

The primary PMU representative attending board meetings is to be designated by Helvetas.

VIII. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is 35,074,563. This is financed through a LDCF grant of USD 4,504,563 administered by UNDP, USD 100,000 in cash co-financing to be administered by UNDP and additional support of USD 30,470,000. UNDP, as the GEF Implementing Agency, is responsible for the oversight of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Co-financing: The actual realization of project co-financing amounts will be monitored by the UNDP Country Office and the PMU on an annual basis in the GEF PIF and will be reported to the GEF during the *mid-term review* and terminal evaluation process as follows:

Co-financing source	Co-financing type	Co-financing amount
Ministry of Environment (Recipient country government)	In-kind	USD 350,000
Inter-American Development Bank (Donor agency)	In-kind	USD 30,000,000

UNDP TRAC Resources (GEF agency)	Grant	USD 100,000
Helvetas (CSO)	In-kind	USD 120,000

Budget Revision and Tolerance: As per UNDP POPP, the project board may agree with the project manager on a tolerance level for each detailed plan under the overall multi-year workplan. The agreed tolerance should be written in the project document or approved project board meeting minutes. It should normally not exceed 10 percent of the agreed annual budget at the activity level, but within the overall approved multi-year workplan at the activity level. Within the agreed tolerances, the project manager can operate without intervention from the project board. Restrictions apply as follows:

Should the following deviations occur, the Project Manager/IP through UNDP Country Office will seek the approval of the BPPS/NCE-VF team to ensure accurate reporting to the GEF. It is **strongly encouraged** to maintain the expenditures within the approved budget at the budgetary account and at the component level:

- a) Budget reallocations must prove that the suggested changes in the budget will not lead to material changes in the results to be achieved by the project. A strong justification is required and will be approved on an exceptional basis. Budget re-allocations among the components (including PMC) of the approved Total Budget and Work Plans (TBWP) that represent a value greater than 10% of the total GEF grant.
- b) Introduction of new outputs/activities (i.e. budget items) that were not part of the agreed project document and TBWP that represent a value greater than 5% of the total GEF grant. The new budget items must be eligible as per the [GEF and UNDP policies](#).
- c) Project management cost (PMC): budget under PMC component is capped and cannot be increased.

Any over expenditure incurred beyond the available GEF grant amount must be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Project extensions: The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and subject to the conditions and maximum durations set out in the UNDP POPP; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the additional UNDP oversight costs during the extension period must be covered by non-GEF resources, in accordance with UNDP's guidance set out in UNDP POPP.

Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop. If the Implementing Partner is an UN Agency, the project will be audited according to that Agencies applicable audit policies.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen at the end date calculated by the approved duration after the Project Document signature or at the revised operational closure date as approved in the project extension. Any expected activity after the operational date requires project extension approval.** The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational

closure has been completed. At this time, the project should have completed the transfer or disposal of any equipment that is still the property of UNDP.

Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project (it is strongly encouraged to be done before the operational closure date). In all cases of transfer, a transfer document must be prepared and kept on file¹⁰⁵. The transfer should be done before Project Management Unit complete their assignments.

Financial completion (closure): The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed **within 6 months of operational closure or after the date of cancellation**. If Operational Closure is delayed for any justified and approved reason, the Country Office should do all efforts to Financially Close the project within 9 months after TE is completed. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the BPPS/NCE-VF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/NCE-VF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

¹⁰⁵ See

https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

IX. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Award ID:	00128390	Atlas Output Project ID:	00122407
Atlas Proposal or Award Title:	Resilience du secteur Eau		
Atlas Business Unit	HTI10		
Atlas Primary Output Project Title	Resilience du secteur Eau		
UNDP-GEF PIMS No.	5628		
Implementing Partner	Helvetas		

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party/[1] , IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See budget note:
Component 1: Improved understanding and awareness of the water sector vulnerability to climate change	Helvetas	62160	LDCF	71200	International Consultants	20,000	52,000	20,000	0	0	92,000	1
		62160	LDCF	71300	Local Consultants	62,000	35,000	15,000	0	0	112,000	2
		62160	LDCF	71600	Travel	10,500	17,500	15,100	0	0	43,100	3
		62160	LDCF	71800	Contractual Services - Impl Partn	20,250	19,350	18,900	0	0	58,500	4
		62160	LDCF	72200	Equipment and Furniture	0	3,500	0	0	0	3,500	5
		62160	LDCF	72800	Information Technology Equipment	0	4,900	0	0	0	4,900	6
		62160	LDCF	72500	Supplies	2,000	5,000	1,000	0	0	8,000	7
		62160	LDCF	74200	Audio Visual&Print Prod Costs	1,000	1,000	7,000	0	0	9,000	8
		62160	LDCF	75700	Training, Workshops and Confer	9,000	45,000	15,000	0	0	69,000	9
		Total Component 1				124,750	183,250	92,000	0	0	400,000	
Component 2:	Helvetas	62160	LDCF	71200	International Consultants	16,000	0	36,000	0	0	52,000	10

Strengthening of the regulatory, policy and institutional capacity framework at national, regional, and local levels for the effective management of drinking water under climate change conditions		62160	LDCF	71300	Local Consultants	0	63,000	40,000	0		103,000	11	
		62160	LDCF	71600	Travel	3,000	0	5,000	3,000	4,000	15,000	12	
		62160	LDCF	71800	Contractual Services - Impl Partn	0	12,000	20,250	0	0	32,250	13	
		62160	LDCF	72200	Equipment and Furniture	0	70,250	25,000	0	0	95,250	14	
		62160	LDCF	75700	Training, Workshops and Confer	0	45,000	0	0	0	45,000	15	
		Subtotal GEF					19,000	190,250	126,250	3,000	4,000	342,500	
		04000	UNDP	72500	Supplies	500	500	2,100	600	300	4,000	16	
		04000	UNDP	72800	Information Technology Equipment	0	0	6,000	4,000	0	10,000	17	
		04000	UNDP	74200	Audio Visual&Print Prod Costs	1,000	0	5,500	2,500	2,000	11,000	18	
		04000	UNDP	75700	Training, Workshops and Confer	9,000	9,000	24,000	15,000	15,000	72,000	19	
		Subtotal UNDP					10,500	9,500	37,600	22,100	17,300	97,000	
M&E	Helvetas	62160	LDCF	71200	International Consultants	0	0	16,500	0	16,500	33,000	20	
		62160	LDCF	71300	Local Consultants	0	0	15,000	0	25,000	40,000	21	
		62160	LDCF	71800	Contractual Services - Impl Partn	14,400	14,400	14,400	14,400	14,400	72,000	22	
		62160	LDCF	71600	Travel	0	0	11,500	5,000	11,000	27,500	23	
		Subtotal GEF					14,400	14,400	57,400	19,400	66,900	172,500	
		04000	UNDP	75700	Trainings, workshops and confer	3,000	0	0	0	0	3,000	24	
		Subtotal UNDP					3,000	0	0	0	0	3,000	
		Subtotal M&E under component 2					17,400	14,400	57,400	19,400	66,900	175,500	
Total GEF					33,400	204,650	183,650	22,400	70,900	515,000			
Total UNDP					13,500	9,500	37,600	22,100	17,300	100,000			
Total Component 2					46,900	214,150	221,250	44,500	88,200	615,000			
Component 3: Identification and promotion of practices for the conservation, management and supply of drinking water adapted to	Helvetas	62160	LDCF	71200	International Consultants	0	0	0	48,000	0	48,000	25	
		62160	LDCF	71300	Local Consultants	0	40,000	42,000	0	0	82,000	26	
		62160	LDCF	71600	Travel	0	0	0	12,500	0	12,500	27	
		62160	LDCF	71800	Contractual Services - Impl Partn	0	364,150	364,150	374,800	364,150	1,467,250	28	
		62160	LDCF	72200	Equipment and Furniture	0	300,000	162,500	300,000	125,000	887,500	29	
		62160	LDCF	72100	Contractual Services - Companies	0	143,750	243,750	243,750	193,750	825,000	30	
		62160	LDCF	72500	Supplies	0	500	0	500	0	1,000	31	
		62160	LDCF	73100	Rental and Maintenance - Premises	0	8,828	8,828	8,828	8,829	35,313	32	
		62160	LDCF	75700	Training, Workshops and Confer	0	6,000	0	15,000	0	21,000	33	

predicted climate change scenarios.						0	863,228	821,228	1,003,378	691,729	3,379,563	
	Total Component 3											
Project Management Costs	UNDP	62160	LDCF	74100	Profesionnal services	5,000	5,000	5,000	5,000	5,000	25,000	34
	Helvetas	62160	LDCF	71800	Contractual Services - Impl Partn	12,000	12,000	12,000	12,000	12,000	60,000	35
		62160	LDCF	72300	Materials and goods	5,000	5,000	5,000	5,000	5,000	25,000	36
		62160	LDCF	72200	Equipment and Furniture	16,800	1,800	1,800	1,800	1,800	24,000	37
		62160	LDCF	73100	Rental and Maintenance - Premises	0	1,650	1,650	1,650	1,650	6,600	38
		62160	LDCF	72400	Communic & Audio-Visual Equipment	6,720	6,720	6,720	6,720	6,720	33,600	39
		62160	LDCF	72800	Information Technology Equipment	12,400	0	0	0	0	12,400	40
		62160	LDCF	71600	Travel	4,680	4,680	4,680	4,680	4,680	23,400	41
	Total PMC					62,600	36,850	36,850	36,850	36,850	210,000	
Total GEF					220,750	1,287,978	1,133,728	1,062,628	799,479	4,504,563		
Total UNDP					13,500	9,500	37,600	22,100	17,300	100,000		
Total Project					234,250	1,297,478	1,171,328	1,084,728	816,779	4,604,563		

Summary of funds

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Total
GEF grant administered by UNDP	220,750	1,287,978	1,133,728	1,062,628	799,479	4,504,563
Donor (UNDP TRAC Resources)	13,500	9,500	37,600	22,100	17,300	100,000
Donor (Government of Haiti - MoE)	17,307	100,075	88,595	82,332	61,691	350,000
Donor (IDB)	1,483,496	8,577,822	7,593,820	7,057,031	5,287,831	30,000,000
CSO Helvetas	24,000	24,000	24,000	24,000	24,000	120,000
TOTAL	1,759,053	9,999,375	8,877,743	8,248,091	6,190,301	35,074,563

Budget Notes

Budget Note No.	Project Outputs (Description)
1	International Water Resources Advisor to design a training programme to enable relevant national government institutions on conducting situationally appropriate and gender-responsive analyses in the water; to advise on the identification of situationally appropriate and gender-responsive climate-resilient adaptation strategies at a national scale (during workshop between relevant GoH institutions — see below); and to conduct workshops to dispense training programme to enable relevant national government institutions on conducting situational analyses in the water sector (25 days at USD800/day – total 20,000).
	International Water Resources Advisor to compile technical gender-disaggregated and contextually relevant data related to, inter alia: i) global climate change and the associated hazards and impacts; ii) climate change impacts on Haiti, particularly on water availability; iii) currently available freshwater resources in Haiti; iv) drivers of reduced water availability; v) IWRM; and vi) suitable adaptation strategies; to design knowledge and information products appropriate for both community and government stakeholder; and to convene a three-day training workshop for ONQEV technical officers on managing information- and knowledge-generation systems (same as in Output 1.1.1, 25 days at USD800/day – total USD20,000).
	International Data Scientist to compile technical gender-disaggregated and contextually relevant data related to, inter alia: i) global climate change and the associated hazards and impacts; ii) climate change impacts on Haiti, particularly on water availability; iii) currently available freshwater resources in Haiti; iv) drivers of reduced water availability; v) IWRM; and vi) suitable adaptation strategies; to design knowledge and information products appropriate for both community and government stakeholder; and to convene a three-day training workshop for ONQEV technical officers on managing information- and knowledge-generation systems (15 days at USD800/day – total USD12,000).
	International Climate Change Modelling Specialist to conduct integrated water resource modelling on long-term water demands in the South-East Department of Haiti; and to develop technical recommendation on IWRM approaches for the South-East Department of Haiti (25 days at USD800/day, total USD20,000).
	International Water Resources Advisor to develop and dispense a ToT programme for regional and national institutions. The ToT programme will be dispensed in three five-day sessions, with each session successively hosted by the DINEPA, MoE and MARNDR respectively (same as in Output 1.1.1, for 25 days at USD800/day – total USD20,000).
2	Local Water Resources Advisor to assist relevant national government institutions in conducting situationally appropriate and gender-responsive analyses of Haiti's water sector and to support the implementation of project activities Component 1 (64 days at USD500/day – total USD32,000).
	Local Hydrogeologist (for 30 days at USD500/day) to assist relevant national government institutions in collecting and analysing hydrogeological and hydrometeorological data (using ONQEV and SNRE) and to conduct downscaled climate change scenario modelling which demonstrate the impacts of climate change on Haiti's water resources (30 days at USD500/day – total USD15,000).

	Local Water Resources Advisor to assist MoE and DINEPA in conducting a situationally appropriate and gender-responsive cost-benefit analysis (CBA) of different adaptation strategies developed as per the predicted climate change scenarios identified under Output 1.1.1 (same as in Output 1.1.1, 30 days at USD500/day – total USD15,000).
	Local Hydrologist to support OREPA Sud in establishing an inventory on available groundwater resources and aquifer recharge zones in the South-East Department of Haiti; and to conduct groundwater assessments to determine water quality and to evaluate the extent of degradation of the catchment zones (20 days at USD500/day – total USD10,000).
	Local Biodiversity Expert, to support OREPA Sud in establishing an inventory on the plant and forest cover of the catchment areas in the South-East Department of Haiti (20 days at USD500/day – total USD10,000).
	Using results from Outputs 1.1.1, 1.1.3 and 1.1.4, Local Hydrologist to develop methodologies for conducting scientific and technical studies to determine fine-scale climate change impacts on water availability in the South-East Department of Haiti, as well as studies to determine the local suitability of the adaptation strategies identified under Output 1.1.1; to conduct scientific and technical studies to determine fine-scale climate change impacts on water availability in the South-East Department of Haiti, as well as studies to determine the local suitability of the adaptation strategies identified under Output 1.1.1; and to develop technical recommendations on appropriate and feasible adaptation solutions within the context of Haiti's South-East Department (same as in Output 1.1.5, for 30 days at USD500/day, total USD15,000).
	Local Water Resources Advisor to support International Climate Change Modelling Specialist to develop technical recommendation on IWRM approaches for the South-East Department of Haiti (same as in Output 1.1.5, for 30 days at USD500/day, total USD15,000).
3	Travel costs and DSA for International Water Resources Advisor (total USD8,500).
	Travel costs and DSA for International Data Scientist (total USD8,500).
	Travel costs for PM and Project Community Liaison Specialist to conduct workshops throughout the 10 departments of Haiti (USD200/day for 30 days – total USD6,000).
	Travel costs for Local Hydrologist and Local Biodiversity Expert for data collection throughout the South-East Department (USD200/day for 15 days – total USD3,000).
	Travel costs for Project SES Specialist and Local Hydrologist throughout the South-East Department (USD200/day for 10 days – total USD2,000).
	Travel costs for Project SES Specialist and representatives of CAEPAs, CTEs and CBOs to travel throughout the South-East Department of Haiti for stakeholder consultations and community-level surveys (target SAEPs only) (USD200/day for 5 days – total USD1,000).
	Travel costs for representatives of local institutions (CAEPAs, CTEs and CBOs) to travel throughout the South-East Department of Haiti to conduct surveys on water usage volumes (USD200/day for 18 days – total USD3,600).
	Travel costs and DSA for International Climate Change Modelling Specialist (total USD8,500).
	Travel costs for International Climate Change Modelling Specialist and Local Hydrologist to travel throughout the South-East Department for data collection (USD200/day for 10 days – total USD2,000).

4	Project SES Specialist to ensure training programme being developed by International Water Resources Advisor (see above) — to enable relevant national government institutions on conducting situational analyses in the water sector — is situationally appropriate and gender-responsive; to advise on the identification of appropriate gender-responsive and situationally appropriate climate-resilient adaptation strategies at a national scale (during workshop between relevant GoH institutions — see below); and to assist international water resources advisor disperse training programme, in a gender-responsive manner, to enable relevant national government institutions on conducting situational analyses in the water sector is being dispensed (6 months at USD1,200/month — total USD7,200, 10% of total Project SES Specialist salary over 60 months).
	Project Community Liaison Specialist to assist the international experts to ensure the products designed are contextually relevant and easily understandable to the different end-users (4 months at USD1,200/month — total USD4,800, 6.7% of total Project CLS salary over 60 months).
	Project Community Liaison Specialist, to assist MoE in conducting CBA analyses as well as to assist MoE in conducting training workshops for decision-makers in each department to equip representatives from relevant government institutions with the necessary skills and knowledge to interpret the CBA results (4 months at USD1,200/month, 6.7% of total Project CLS salary — total USD4,800).
	Project Driver to drive PM and Project CLS to conduct workshops throughout the 10 departments of Haiti (6 months at USD650/month — total USD3,900, 10% of total Project Driver salary over 60 months).
	Project Driver to drive Local Hydrologist and Local Biodiversity Expert throughout the South-East Department for data collection (9 months at USD650/month — total USD5,850, 15% of total Project Driver salary over 60 months).
	Project SES Specialist to support Local Hydrologist in developing technical recommendations on appropriate and feasible adaptation solutions within the context of Haiti's South-East Department (6 months at USD1,200/month — total USD7,200, 10% of total Project SES Specialist salary over 60 months).
	Project Driver to drive Local Hydrologist and Project SES Specialist throughout the South-East Department (9 months at USD650/month — total USD5,850, 15% of total Project Driver salary over 60 months).
	Project SES Specialist to support representatives of local institutions (CAEPAs, CTEs and CBOs) conduct workshops for gender-responsive stakeholder consultations and community-level surveys in the project's target communities (6 months at USD1,200/month — total USD7,200 10% of total Project SES Specialist salary over 60 months).
	Project Driver to drive Project SES Specialist and representatives of CAEPAs, CTEs and CBOs to travel throughout the South-East Department of Haiti for stakeholder consultations and community-level surveys (target SAEPS only) (9 months at USD650/month — total USD5,850, 15% of total Project Driver salary over 60 months).
	Project Driver to drive International Climate Change Modelling Specialist and Local Hydrologist throughout the South-East Department for data collection (9 months at USD650/month — total USD5,850, 15% of total Project Driver salary over 60 months).
5	Water quality test equipment (10 kits at USD350 per water testing kit, total USD3,500).
6	Two laptops pre-loaded necessary software to connect to water quality test equipment, as well as to run water quality analyses (USD2,450 per laptop-software setup — total USD4,900).
7	Cost for stationery and other supplies for use during workshops (total USD7,000) (Outputs 1.1.1, 1.2.2, 1.1.3, 1.1.4, 1.2.1, 1.2.2)

	Cost for stationery and other supplies for use during surveys on water usage volumes in the South-East Department of Haiti (total USD1,000) - Output 1.2.3
8	Communication (printed reports) of appropriate gender-responsive and situational climate-resilient adaptation strategies at a national scale, identified by relevant government institutions during five-day meeting (total USD1,000).
	Communication (printed report) of contextually appropriate and gender-responsive methodologies for conducting climate change Vas in the project's target communities developed during five-day workshop between MoE, DINEPA and MARNDR representatives (total USD1,000).
	Communication (printed reports) of vulnerability assessments done in the project's target communities (USD1,000 per workshop – total USD5,000).
	Communication (printed reports) of surveys on water usage volumes in the South-East Department of Haiti (total USD2,000).
9	Two five-day workshops to equip relevant national government institutions with the necessary skills and knowledge to conduct situational analyses to generate gender-disaggregated and contextually relevant data on Haiti's the water sector (USD3,000 per workshop – total USD6,000).
	Five-day meeting between relevant government institutions to identify appropriate gender-responsive and situational climate-resilient adaptation strategies at a national scale (USD3,000 per meeting – total USD3,000).
	Three-day training workshop for ONQEV technical officers on managing information- and knowledge-generation systems (USD3,000 per workshop – total USD3,000).
	Five-day training workshops, hosted by the MoE, in each of Haiti's 10 departments, coordinated by the Project Community Liaison Specialist, for decision-makers in each department to equip representatives from relevant government institutions with the necessary skills and knowledge to interpret the CBA results (USD3,000 per workshop, total USD30,000).
	Three five-day local-level workshops led by representatives from MoE, DINEPA and MARNDR trained via the ToT programme to disseminate the content of the ToT programme to CAEPAs and CTEs throughout the South-East Department of Haiti (USD3,000 per workshop – total USD9,000).
	DINEPA, MoE and MARNDR representatives (from the ToT programme under Output 1.1.4) to convene one five-day workshop to enable local institutions (CAEPAs, CTEs and CBOs) to develop contextually appropriate and gender-responsive methodologies for conducting climate change Vas in the project's target communities (USD3,000 per workshop – total USD3,000).
	Five five-day workshops, conducted by representatives of local institutions (CAEPAs, CTEs and CBOs), for gender-responsive stakeholder consultations and community-level surveys in the project's target communities (USD3,000 per workshop, total USD15,000).

10	International Environmental Law and Legislation Consultant to conduct gap and reviews assessments of selected regulatory and policy frameworks to identify entry points for climate change and gender mainstreaming, and to develop technical recommendations for integrating climate change and gender considerations into abovementioned regulatory and policy frameworks; to develop standardised matrices for DINEPA and its regional entities to guide the identification of appropriate adaptation solutions and prioritisation of investments; and to conduct two three-day workshops with representatives from DINEPA and its regional entities to validate technical recommendations and to revise frameworks to include climate change and gender considerations (30 days at USD800/day, total USD24,000).
	International Environmental Law and Legislation Consultant to identify coordination and planning gaps among national, regional, and local government institutions involved in water resource management; to develop a framework to guide the development of institutionalised coordination mechanisms and mechanisms for national-regional and regional-local coordination and planning; and to host one three-day training workshop — for representatives of DINEPA and its regional entities, CAEPAs, CTEs, CBOs and NGOs — on national-regional and regional-local coordination and planning mechanisms (same as in Output 2.1.1, for 15 days at USD800/day, total USD12,000).
	International Water Resources Advisor to conduct technical capacity needs assessments (CNAs) for DINEPA, OREPA Sud, CAEPAs and CTEs on climate-resilient water resource management, sustainable territorial land-use planning, management, and application of information on water resources and climate change threats; and to develop and implement a ToT programme on climate-resilient water resource management, sustainable territorial land-use planning, management, and application of information on water resources and climate change threats (same as in Output 1.1.1, 20 days at USD800/day, total USD16,000).
11	Local Hydrologist to support DINEPA in procuring the equipment required for strengthening technical capacities of relevant government institutions, and to provide support in the training workshops for CAEPAs and CTEs in the target communities on adequate use of equipment, as necessary (same as in Output 1.1.5, for 30 days at USD500/day, total USD15,000).
	Local Agroforestry Expert to identify the most suitable zones for the reforestation and agroforestry interventions to be implemented under Output 3.1.1, to develop the agroforestry technical packages and to conduct technical trainings under Component 2 (126 days at USD500/day, total USD63,000).
	Local Water Resources Advisor to develop and conduct five five-day training workshops on contextually relevant and gender-responsive IWRM for community-level water governance structures (same as in Output 1.1.1, for 50 days at USD500/day, total USD25,000).
12	Travel costs and DSA for International Law and Legislation Consultant (total USD10,000).
	Travel costs for International Water Resources Advisor to travel throughout areas served by DINEPA and OREPA Sud (USD200/day for 25 days – total USD5,000).
13	Project Driver to drive International Water Resources Advisor throughout areas served by DINEPA and OREPA Sud for data collection (9 months at USD650/month — total USD5,850, 15% of total Project Driver salary over 60 months).
	Project Community Liaison Specialist to provide support in the training workshops for CAEPAs and CTEs in the target communities on adequate use of equipment, as necessary (4 months at USD1,200/month — total USD4,800, 6.7% of total Project CLS salary over 60 months).

	Project Community Liaison Specialist to support DINEPA in establishing community-level decision-making groups in the target communities reliant on the five target SAEs; and to develop community-based strategic and operational plans, with the support of regional and local government stakeholders (4 months at USD1,200/month — total USD4,800, 6.7% of total Project CLS salary over 60 months).
	Project SES Specialist to coordinate the identification of suitable zones for reforestation and agroforestry interventions (6 months at USD1,200/month — total USD7,200, 10% of total Project SES Specialist salary over 60 months).
	Project Community Liaison Specialist to ensure agroforestry technical packages being developed by DFER officers are contextually relevant and easily understandable to the different end-users (4 months at USD1,200/month — total USD4,800, 6.7% of total Project CLS salary over 60 months).
	Project Community Liaison Specialist to conduct a gap analysis on the organizational capacity of community-level institutions involved in water resource management in the target communities (4 months at USD1,200/month — total USD4,800, 6.7% of total Project CLS salary over 60 months).
14	DINEPA to procure groundwater metering devices, rainfall gauges, and discharge measurement devices (127 units, at USD750/unit, total USD95,250).
15	Training workshops on Agroforestry packages developed by the national consultant (USD 3,000 per workshop - Total 45,000 USD).
16	Cost for stationery and other supplies for use during workshops (total USD3,500) - Component 2
	Cost for stationery and other supplies for use during project inception workshop (total USD500)
17	DINEPA to procure laptops with pre-loaded software for compatible with groundwater metering devices, rainfall gauges, and discharge measurement devices, as well as for analysis of data obtained from the technical devices (10 laptops, at USD2,000 per laptop-software setup, total USD10,000).
18	Communication (printed reports) of technical recommendations and of revised frameworks from the workshops between representatives of the DINEPA (USD1,000 per workshop - total USD2,000).
	Communication (printed reports) of strategic adaptations plans by the DINEPA to integrate climate change and gender considerations, as well as findings of analyses conducted under Outputs 1.1.1, 1.1.3 and 1.1.6 (total USD1,000).
	Communication of results (printed report) from gap analysis as well as national-regional and regional-local coordination and planning mechanisms frameworks (total USD2,000).
	Communication of results (printed report) from technical capacity needs assessments conducted by International Water Resources Advisor (total USD1,000).
	Communication of results (printed reports) from gap analysis and contextually relevant and gender-responsive IWRM plans for community-level water governance structures developed during the training workshops (total USD5,000).
19	Two three-day workshops with representatives from DINEPA and its regional entities to validate technical recommendations and to revise frameworks to include climate change and gender considerations (USD3,000 per workshop - total USD6,000).

	One three-day training workshop — for representatives of DINEPA and its regional entities, CAEPAs, CTEs, CBOs and NGOs — on national-regional and regional-local coordination and planning mechanisms (USD3,000 per workshop, total USD,3000).
	Three five-day workshops to dispense ToT programme on climate-resilient water resource management, sustainable territorial land-use planning, management, and application of information on water resources and climate change threats (USD3,000 per workshop, total USD9,000).
	Five one-day training workshops for CAEPAs and CTEs in the target communities on adequate use of equipment, as necessary (USD3,000 per workshop, USD15,000 in total).
	Five three-day community-level stakeholder consultative workshops on proposed adaptation strategies in target communities (USD3,000 per workshop, total USD15,000).
	Three five-day sessions to dispense ToT programme on EbA (USD,3000 per workshop, total USD9,000).
	Five five-day training workshops on contextually relevant and gender-responsive IWRM for community-level water governance structures (USD3,000 per workshop, total USD15,000).
20	International Monitoring and Evaluation Expert to conduct project mid-term and terminal evaluations (50 days at USD660/day, total USD33,000).
21	Local Monitoring and Evaluation Expert to design the project's exit strategy (20 days at USD500/day, total USD10,000).
	Local Monitoring and Evaluation Expert to assist International Monitoring and Evaluation Expert in conducting project mid-term and terminal evaluations (60 days at USD500/day, total USD30,000).
22	Project Monitoring and Evaluation Officer to ensure project's M&E meets the requirements of the Government, the UNDP Country Office, and UNDP-GEF; develop project-specific M&E tools as necessary; oversee and ensure the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results; facilitate mid-term and terminal evaluations of the project as well as the project's exit strategy (60 months at USD1200/month, total USD72,000).
23	Travel costs and DSA for International Monitoring and Evaluation Expert when conducting mid-term evaluation and terminal evaluation (total USD17,500).
	Travel costs and DSA for MoE/DINEPA representatives and PM to visit project sites (total USD10,000).
24	Project inception workshop coordinated the UNDP Country Office (USD3,000 per workshop, total USD3,000).
25	International Applied Anthropologist, supported by Project Community Liaison Specialist, CAEPAs and CTEs, to conduct a 'willingness-to-pay' assessment and PSIAs in target communities within the five target SAEPs (60 days at USD800/day, total USD48,000).
26	Local Agroforestry Expert to support the MoE and dispense two five-day workshops to train 'agroforestry farmer champions' on the usage of agroforestry technical packages (developed under Activity 2.3.2.3) on contextually appropriate agroforestry practices, and to support Local Foresters to establish a nursery for tree seedlings to be dispensed for the reforestation and agroforestry interventions (same as in Output 2.3.2, for 50 days at USD500/day, total USD25,000).

	Local Water Resources Advisor to increase the capacity of water governance institutions (MoE, DINEPA, MARNDNR) to procure and install physical structures (gabions, percolation tanks, contour bunds, septic tanks etc.) (30 days at USD500/day, total USD15,000).
	Local Water Resources Advisor, supported by CAEPAs and CTEs, to assist DINEPA in establishing an inventory of available water treatment systems in the five target SAEPs and support to support the implementation of project activities under Component 3 (84 days at USD500/day, total USD42,000).
27	Travel costs and DSA for International Applied Anthropologist (total USD8,500).
	Travel costs for International Applied Anthropologist and Project CLS to travel throughout the South-East Department for data collection (USD200/day for 20 days – total USD4,000).
28	Five Local Foresters from the DFER, with support from Local Agroforestry Expert, to establish a nursery for tree seedlings to be dispensed for the reforestation and agroforestry interventions; and to conduct quarterly site visits in the areas where trees have been planted to manage tree sapling mortality and replace with new saplings where necessary (5 Foresters, for 40 months at USD750/month, total USD150,000).
	Agroforestry ‘farmer champions’, with support from MoE and Project Community Liaison Specialist, through extensive community consultation and awareness raising, to promote and establish of up to 700 ha of agroforests across the recharge zones of the five target SAEPs (once-off USD2,000 package to 300 farmer champions, total USD600,000).
	Local contractors to prepare slopes for planting in target catchment areas and to organise transport of saplings from nurseries to planting sites (e.g. small trucks) (USD125,000 in each SAEP, total USD625,000).
	Project SES Specialist to assist in establishing Cash4Work programmes to facilitate the implementation of reforestation interventions in suitable degraded areas (identified under Output 2.3.2) to increase the tree cover in ~4,540 ha of degraded in the recharge zones of the five target SAEPs (36 months at USD1,200/month — total USD43,200, 60% of total Project SES Specialist salary over 60 months).
	Project Community Liaison Specialist to promote the establishment of up to 700 ha of agroforests across the recharge zones of the five target SAEPs, along with farmer champions (32 months at USD1,200/month — total USD38,400, 53.1% of total Project CLS salary over 60 months).
	Project Community Liaison Specialist supported by CAEPAs and CTEs, to design and implement awareness-raising campaigns and advocacy programmes in target communities for water consumption monitoring systems, including efficient water uses; to conduct a ‘willingness-to-pay’ assessment in target communities within the five target SAEPs; and to develop and implement framework for the sustainable O&M of the five target SAEPs based on lessons learned from HELVETAS and the WTP assessment (4 months at USD1,200/month — total USD4,800, 6.7% of total Project CLS salary over 60 months).
	Project Driver to drive International Applied Anthropologist and Project CLS throughout the South-East Department for data collection and to dispense awareness-raising programmes (9 months at USD650/month — total USD5,850, 15% of total Project Driver salary over 60 months).
29	Costs for equipment to establish nursery in each target SAEP for tree seedlings to be dispensed for the reforestation and agroforestry interventions (USD35,000 per nursery, 1 per SAEP, total USD175,000).

	Cost for procurement of gabions, percolation tanks, contour bunds and septic tank, to be installed at sites identified under Activity 3.1.2.1 to increase resilience of aquifer recharge zones and water distribution infrastructure against climate change (USD100,000 per SAEP, total USD500,000).
	Costs for procurement of 350 rooftop water harvesting systems, including household cisterns (USD500/unit, total USD175,000).
	Costs for procurement of water treatment harvesting systems (50 units at USD750/unit, total USD37,500).
30	Local companies hired to establish Cash4Work programmes to facilitate the implementation of reforestation interventions in suitable degraded areas (identified under Output 2.3.2) to increase the tree cover in ~4,540 ha of degraded in the recharge zones of the five target SAEPs. Local companies will employ, organise, and oversee locally recruited workers to plant the trees (USD115,000 per CFW programme, 1 per SAEP, total USD575,000).
	Local companies contracted to procure and install rooftop water harvesting systems and household cisterns in priority households identified under Activity 3.1.3.1 (1 company per SAEP, USD10,000/contract, total USD50,000).
	Local companies hired to develop and implement water treatment programmes in each of the target SAEPs, according to need, using the inventory established in Activity 3.1.5.1 (1 company per SAEP, USD40,000/contract, total USD200,000).
31	Cost for stationery and other supplies for use during workshops (total USD500) - Output 3.1.1
	Cost for stationery and other supplies for use during workshops (total USD500) Output 3.1.3
32	Maintenance costs over three years for five nurseries in each target SAEP to ensure continuity in the distribution of tree seedlings for the reforestation and agroforestry interventions during project implementation (total USD35,313).
33	Two five-day workshops to train 'agroforestry farmer champions' on the usage of agroforestry technical packages (developed under Activity 2.3.2.3) on contextually appropriate agroforestry practices (USD3,000 per workshop, total USD6,000).
	Five one-day training workshop, hosted by CAEPAs and CTEs, conducted to equip recipient household members with the knowledge for appropriate use and maintenance of rainwater harvesting equipment and household cisterns (USD,3000 per workshop, total USD15,000).
34	Audit (USD5,000/year, total USD25,000).
35	Project Administrator (60 months at USD1,000/month, total USD60,000).
36	Costs of fuel for generator (USD25,000)
37	Costs over 5 years for project office materials (desk, chairs, printers, ink cartridges etc.) including a solar panel setup (total USD24,000).
38	Cost of maintenance over 5 years for project office (total USD6,600).
39	Costs over 5 years of communication and audiovisual equipment, including internet connection over 5 years, for project office (total USD33,600).
40	Costs for laptops, USB drive, Software, screen, and antivirus for the project team (PM and Administrative & Financial Officer) (total USD12,400)
41	Travel costs and DSA for supervision of the project activities (total USD 23,400)

X. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Haiti and UNDP, signed on June 28, 1973. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner.”

This project will be implemented by Helvetas (“Implementing Partner”) in accordance with its 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 Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XI. RISK MANAGEMENT

CSO/NGO/Non-UN or other IGO with no signed SBAA with UNDP

1. Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP’s property in the Implementing Partner’s custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
 - a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
 - b) assume all risks and liabilities related to the Implementing Partner’s security, and the full implementation of the security plan.
 2. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner’s obligations under this Project Document and the Project Cooperation Agreement between UNDP and the Implementing Partner¹⁰⁶.
 3. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.
 4. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
 - (a) In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General’s Bulletin ST/SGB/2003/13 of 9 October 2003, concerning “Special measures for protection from sexual exploitation and sexual abuse” (“SEA”).
 - (b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and
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each of its sub-parties referred to above, shall not engage in any form of sexual harassment (“SH”). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

5. a) In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will, and will require that such sub-parties will take all appropriate measures to:
 - i. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
 - ii. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4, have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and such sub-parties may use the training material available at UNDP;
 - iii. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;
 - iv. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
 - v. Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.
- b) The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.
6. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
7. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
8. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

9. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using the UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.
10. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
11. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP programmes and projects in accordance with UNDP regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.
12. The Implementing Partner will promptly inform UNDP in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

13. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with the Implementing Partner, responsible parties, subcontractors and sub-recipients.

14. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.
15. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
16. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management Standard Clauses" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this

section entitled “Risk Management” are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

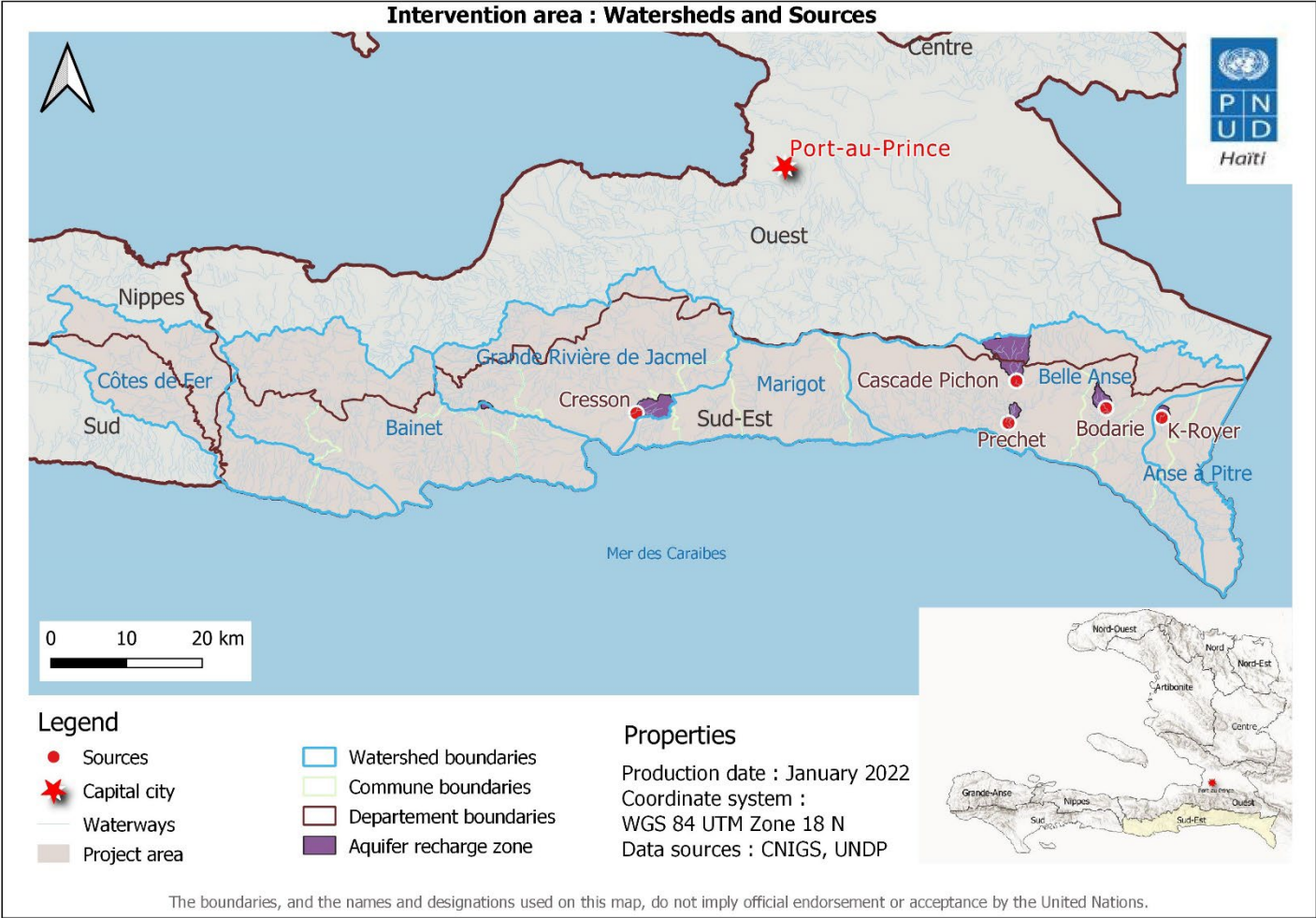
XII. MANDATORY ANNEXES

- GEF Budget Template (available from BPPS NCE-VF)
- Project Map and geospatial coordinates of the project area
- Multiyear Workplan
- Social and Environmental Screening Procedure (SESP)
- UNDP Atlas Risk Register
- Overview of technical consultancies/subcontracts
- Stakeholder Engagement Plan
- Environmental Social Management Framework (ESMF) or other SES frameworks/plans, if required
- Gender Analysis and Gender Action Plan
- Procurement Plan – for first year of implementation especially GEF focal area specific annexes (e.g. METT, GHG calculations, target landscape profile, feasibility study, other technical reports)
- Additional agreements: such as cost sharing agreements, project cooperation agreements signed with NGOs (where the NGO is designated as the “executing entity”), letters of financial commitments etc..
- Signed LOA between UNDP and IP requesting UNDP Support Services (if required on exceptional basis and authorized by the GEF)
- GEF and/or LDCF/SCCF Core indicators (see template below)
- GEF Taxonomy (see template below)
- [Partners Capacity Assessment Tool and HACT assessment \(Please refer to the HACT policies for guidance on applicability and financial thresholds -](#)
- UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system)

Annex 1: GEF Budget Template

Annex 3: Project map and Geospatial Coordinates of project sites

Any maps included in this project document must conform to maps accepted by the UN Cartographic Unit (see <https://www.un.org/Depts/Cartographic/english/htmain.htm>)



Annex 4: Multi Year Work Plan

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1. Improved understanding and awareness of the water sector vulnerability to climate change	Outcome 1.1: Improved awareness raising and knowledge and information management systems for the water sector to plan and respond to the impacts of climate change.	Output 1.1.1: Assessments, with gender-specific criteria, carried out at the national level to demonstrate the implications of different climate change scenarios on the availability of water.																				
		Output 1.1.2: A continuous information- and knowledge-generation system implemented to inform communities and the GoH on water management adaptation strategies and climate-resilient water supply.																				
		Output 1.1.3: Cost-benefit analyses of different adaptation strategies developed as per the predicted climate change																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		scenarios identified under Output 1.1.1.																				
		Output 1.1.4: Training programmes implemented for regional and national institutions on the extent of climate change impacts on freshwater availability — including methodologies and application of vulnerability assessments (as developed under Output 1.2.1 below) and adaptation solutions.																				
		Output 1.1.5: Inventory and quality characterisation of groundwater aquifers in the target area carried out by OREPA Sud.																				
		Output 1.1.6: Scientific and technical studies on the impacts of climate change and options for adaptation																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		management in the target area conducted, informing local decision-making on climate-resilient water supply.																				
	Outcome 1.2: Target communities prepared to effectively plan responses to climate change impacts on their access to drinking water.	Output 1.2.1: Methodologies and instruments developed for community-level vulnerability assessments (VAs) of drinking water supply.																				
		Output 1.2.2: Participatory climate change vulnerability assessments (VAs) carried out in the project's target communities.																				
		Output 1.2.3: Integrated water resource modelling conducted to demonstrate the projected long-term impacts of climate change on biodiversity, ecosystems, and urban systems, as well as the																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		relationships between these aspects and drinking water availability at the landscape level.																				
Component 2. Strengthening of the regulatory, policy and institutional capacity framework at national, regional, and local levels for the effective management of drinking water under climate change conditions	Outcome 2.1: Key regulatory and policy instruments adjusted to consider the implications of climate change for drinking water supply and promote adaptive community-based management, Knowledge generation and dissemination	Output 2.1.1: Two regulatory instruments adjusted to account for the evolving contextual needs and conditions resulting from climate change.																				
		Output 2.1.2: Strategic plans revised by sub-national regulatory institutions to prioritise adaptation interventions based on evaluations of climate change impacts on water supply vulnerability.																				
		Output 2.1.3: Frameworks and instruments developed and applied for planning and coordination between national,																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		regional, private and community-based organisations.																				
	Outcome 2.2: Increased capacities in priority institutional stakeholders (DINEPA, OREPA Sud, CAEPAs and CTEs) with regards to the technical aspects of water resource management, territorial land-use planning, as well as management and application of information on water resources and climate change threats.	Output 2.2.1: Targeted programmes implemented to strengthen technical capacity of relevant institutions to incorporate climate change data into planning and management.																				
		Output 2.2.2: Equipment provided to support the efficient application of technical capacity developed by training workshops.																				
	Outcome 2.3: Target communities equipped with instruments and mechanisms that ensure the sustainable management of water resources and associated	Output 2.3.1: Community-based strategic and operational plans, with gender-specific criteria, developed to ensure the climate resilience of drinking water access.																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	infrastructure, as well as specific strategies to target female-headed households.	Output 2.3.2: Consultative and consensus-based community-level engagement on land-use planning conducted, and training programmes developed, for sustainable land uses in drainage and recharge zones to ensure the climate resilience of drinking water recharge.																				
		Output 2.3.3: Programmes implemented to strengthen organisational capacities and awareness of community-level stakeholders and organisations — reflecting gender-specific differences and promoting the equitable management of water resources and supply infrastructure under climate																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		change conditions.																				
Component 3. Identification and promotion of practices for the conservation, management and supply of drinking water adapted to predicted climate change scenarios.	Outcome 3.1: Reliable access to drinking water ensured for target communities and households as a result of the implementation of climate change adaptation measures.	Output 3.1.1: 4,540 ha of aquifer recharge zones rehabilitated within the five target SAEPs — of which 700 ha is restored through agroforestry.																				
		Output 3.1.2: Gabions, percolation tanks, contour bunds and septic tanks constructed to promote aquifer recharge and to reinforce the protection of the five target Drinking Water Supply Systems (SAEPs).																				
		Output 3.1.3: Rooftop water harvesting systems and household cisterns installed in 350 households in target communities.																				
		Output 3.1.4: Framework for financial plans for O&M of the																				

	Outcomes	Outputs	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		five target SAEs to improve water-use efficiency and distribution, accompanied by awareness-raising and advocacy programmes.																				
		Output 3.1.5: Programmes for treating water supplies with sodium hypochlorite implemented to reduce water pollution-related health risks.																				

Annex 5: UNDP Social and Environmental Screening Procedure (SESP)**Project Information**

Project Information	
1. Project Title	“Resilience du Secteur Eau “
2. Project Number (i.e., Atlas project ID, PIMS+)	Atlas Project ID : 00122407 PIMS ID # 5628
3. Location (Global/Region/Country)	Haiti
4. Project stage (Design or Implementation)	Design
5. Date	9 August 2021

Part A. Integrating Programming Principles to Strengthen Social and Environmental Sustainability**QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?*****Briefly describe in the space below how the project mainstreams the human rights-based approach***

The Project seeks to integrate the human-rights approach by enhancing the enabling environment for equitable development, and by empowering people to take their own decisions. It recognizes that real success in tackling poverty and vulnerability requires giving the poor and vulnerable both a stake, a voice and real protection in the societies where they live.

More specifically, the Project will support sustainable access to drinking water for the population of targeted localities in the South-East Department of Haiti, by improving the resilience of drinking water supply to the effects of climate change. This Department is highly vulnerable to climatic change, which combined with massive ongoing environmental degradation, and systemic poverty, create major challenges to human development.

The Project will raise awareness among the population and local authorities on the vulnerability of the water sector to climate change, develop regulatory tools, build the capacity of local authorities in water resource management, and promote practices for the conservation, management and supply of drinking water. The beneficiaries will be national institutions (DINEPA, MoE, MARNDR, local authorities) and local communities (86 target communities, including 338,728 individual beneficiaries).

The Project will also provide environmental benefits through the reforestation of the upstream catchment basins that supply the populations of the targeted communes with drinking water. The project is not only part of the Haitian government's overall vision to improve the well-being of the population and reduce inequalities, but also contributes to the implementation of sustainable development objectives.

Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment

The Project will encourage the involvement of women in decision-making and promote a gender equality approach in the development and implementation of activities. In addition, Moreover, by supporting sustainable access to drinking water, the project contributes to gender equality and child protection, as these two categories are in most cases responsible for providing water to families, especially in remote areas of Haiti. Improving the resilience of the water supply will therefore significantly reduce the distance that women have to travel to reach a reliable water source, thereby reducing the health consequences of this workload and freeing up time that they can use for other activities that can improve their social and economic conditions. Improving the resilience of access to a reliable supply of safe drinking water will also reduce the risk of water-borne diseases affecting them and other family members, indirectly reducing their workload, as women are the primary caretakers of the family's health.

Women will be heavily involved in the design and location of water supply systems. During the PPG phase, an in-depth gender analysis, including sex-disaggregated indicators, will be carried out. This analysis will highlight the complexity of gender relations in Haiti and identify obstacles to gender equality. The analysis should serve as a basis for supporting the identification of opportunities to improve gender-sensitive approaches to water management activities and water security in the context of climate change adaptation. An action plan will also be developed to enable gender mainstreaming in project implementation.

Briefly describe in the space below how the project mainstreams sustainability and resilience

The project is part of the Haitian Government's overall sustainable development objectives. I will contribute to the protection and maintenance of water resources by promoting and implementing measures to increase the infiltration of rainfall and runoff in the 10 selected spring catchment areas, most particularly the protection of over 5,000 hectares of catchment, reforestation, and the promotion of agroforestry practices over 700 hectares of farmland. The measures will contribute to Haiti's environmental sustainability by increasing tree cover and reducing soil erosion. Increased infiltration will in turn improve the flow at the springs that provide gravity fed drinking water to downstream communities

The Project will apply an Ecosystem-Based Adaptation (EBA) using local tree species and management models that are locally acceptable, while being resistant to the effects of climate change, facilitating infiltration, and providing shade to reduce evaporation, without negatively affecting water yield through evapotranspiration.

The Project will promote the sustainability of the proposed resilience measures at the field level through the use of low-cost technologies adapted to local conditions through community consultation and validation with experts in the field. Local populations will be involved through local committees in the management and sustainability of local water infrastructure and supply systems. The capacity of national, regional and local institutions will be strengthened for scenario analysis, monitoring and decision-making in accordance with the principles of adaptive management, and through the promotion of inter-institutional collaboration on CC adaptation.

To ensure its financial sustainability, the Project will support the development and installation of water meters to improve the efficiency of water use and distribution, accompanied by an awareness and promotion program. This will enable the implementation of locally negotiated and consensus-based water tariffs to cover the costs of operating and maintaining water supply systems, taking into account the additional costs involved in adapting to climate change and including, where possible, the use of a payment mechanism for environmental services.

Briefly describe in the space below how the project strengthens accountability to stakeholders

Accountability to stakeholder will be ensured through implementation of the Stakeholder Engagement Plan and grievance mechanism.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Complete SESP Attachment 1 before responding to Question 2.</i>	QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 5</i>			QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High
<i>Risk Description (broken down by event, cause, impact)</i>	<i>Impact and Likelihood (1-5)</i>	<i>Significance (Low, Moderate, Substantial, High)</i>	<i>Comments (optional)</i>	<i>Description of assessment and management measures for risks rated as Moderate, Substantial or High</i>
Risk 1. Tree nurseries might result in inadvertent adverse environmental and social impacts, including relating to the following: 1.3 <i>Changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods</i> 1.6 <i>Introduction of invasive alien species</i> 5.2 <i>Economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)</i> 7.1 <i>Working conditions that do not meet national labor laws and international commitments</i> 7.3 <i>Use of child labor</i> 7.4 <i>Use of forced labor</i> 7.5 <i>Discriminatory working conditions and/or lack of equal opportunity</i> 7.6 <i>Occupational health and safety risks due to physical, chemical, biological and</i>	I = 3 L = 3	Moderate	The challenge will be to operate one or more tree nurseries over 5 years, together capable of producing over 400,000 saplings per year, both tree crops for agroforestry and local trees, including <i>Pinus occidentalis</i>, for the reforestation activities. The great majority of the trees grown will be for reforestation, rather than agroforestry. Producing saplings from seed will require a consequential team to plant, grow and water the seedlings until they are ready for distribution.	The ESMF prepared for the Project identified the following measures to mitigate the risks 26. DINEPA will prepare proportionate ESMPs (including site-specific assessment) for each tree nursery site 27. The selection of trees species should prioritize local species, particularly for reforestation, and rigorously avoid the introduction of alien invasive species that might disrupt ecosystems (SES1) 28. DINEPA and the Department of Forestry will select tree nursery sites in consultation with neighboring communities and persons. All sites where communities and persons have formal or informal land or usage claims or any activities that may result in physical displacement will be excluded (SES1 and SES5). 29. If economic displacement risks are identified through site-specific assessment, the ESMP will incorporate Livelihood Action Plan. 30. DINEPA will implement the Labor Management Procedures (LMP) (SES7) 31. Non-qualified workers should be selected from neighboring communities (SES7). 32. DINEPA will ensure that contractors meet the requirements of the Project's ESHS requirements (SES3, SES7, SES8), including measures to prevent impacts on community health and safety, handle chance finds, ensure non-discrimination, prevent and respond to Sexual Exploitation and Abuse (SEA) and Sexual harassment (SH), exclude child and forced labor, and to mitigate pollution

<i>psychosocial hazards (including violence and harassment) throughout the project life-cycle</i>				33.DINEPA and the Forestry Department will ensure that the use of water by the nursery does not compete with water usage by neighboring farmers (SES8)
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Risk 2 Reforestation activities might result in inadvertent adverse environmental and social impacts, including relating to the following:	L=4 L=3	Substantial		
1.3 <i>Changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods</i> 1.8 <i>Harvesting of natural forests, plantation development, or reforestation</i> 3.2 <i>Air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation</i> 3.3 <i>Harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)</i> 3.4 <i>Risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health</i> 3.6 <i>Adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)</i> 4.2 <i>Significant excavations, demolitions, movement of earth, flooding or other environmental changes</i> 5.2 <i>Economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)</i> 7.1 <i>Working conditions that do not meet national labor laws and international commitments</i> 7.3 <i>Use of child labor</i> 7.4 <i>Use of forced labor</i> 7.5 <i>Discriminatory working conditions and/or lack of equal opportunity</i>			Reforestation activities would occur in severely degraded areas. They will entail the planting of saplings produced by the nurseries once the slopes have been readied through terraces, gabions or bunds. Example can be taken on the techniques used by the Fondation Seguin. Supplemental watering might not be technically or financially feasible or realistic given the extent of the areas targeted, but can be avoided by timing the tree planting with the rainy seasons. The Project will finance contractors to employ laborers for this purpose under Cash for Work (CfW) programs. The contractors will organize and oversee the locally recruited workers to prepare the slopes and plant the trees. Trucks will be needed to transport the trees from the nurseries, and some light machinery might be needed to prepare the slopes. Such machinery must be operated by qualified workers.	The ESMF prepared for the Project identified the following measures to mitigate the risks: 34. DINEPA will prepare proportionate ESMPs (including site-specific assessments) for each reforestation site 35. DINEPA and the Forestry Department, in coordination with neighboring communities, must put in place measures to stop access to reforested area by livestock, particularly goats (SES1). 36. DINEPA and the Department of Forestry will select reforestation sites in consultation with neighboring communities and persons. Given that the sites will be included in the Public Domain following reforestation, all sites where communities and persons have land claims will be excluded (SES1 and SES5). 37. DINEPA, the Forestry Department, and contractors must ensure that activities do not create risks of slope failures (SES3). 38. DINEPA and the Forestry Department must ensure appropriate road access to the site, to avoid the risk of accidents when transporting workers, materials or saplings (SES3). 39. DINEPA will implement the Labor Management Procedures (LMP) (SES7) 40. DINEPA and its implementing partners will establish lists of eligible workers for each work site, by excluding persons under the age of 18 and persons with criminal records, and by limiting eligibility to communities neighboring the work site, to avoid labor influx from other parts of Haiti and to strengthen the relationship between the Project and these communities. (SES7). 41. DINEPA will ensure that contractors meet the requirements of the Project's ESHS requirements (SES3, SES7, SES8), including measures to prevent impacts on community health and safety, handle chance finds, ensure non-discrimination, prevent and respond to Sexual Exploitation and Abuse (SEA) and Sexual harassment (SH), exclude child and forced labor, and to mitigate pollution

Risk 3. Agroforestry activities might result in inadvertent adverse environmental and social impacts, including as a result of the following: <i>1.3 Changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods</i> <i>7.1 Working conditions that do not meet national labor laws and international commitments</i> <i>7.5 Discriminatory working conditions and/or lack of equal opportunity</i>	I = 3 L = 3	Moderate	Historically, the practice of agroforestry in Haiti was widespread, but was gradually abandoned for economic reasons, in large part because of decreasing farm plot sizes that made it necessary for farmers to fully use the land to obtain enough revenue to survive. The Project will attempt to convince farmers to increase the tree cover and reduce erosion on their plots, despite these constraints. It is indispensable that the Project recognize in its messaging to the farmers that their primary motivation is to sustainably increase their revenues rather than to increase the water supply of coastal communities.	The ESMF prepared for the Project identified the following measures to mitigate the risks: 42. The Project will accompany agroforestry activities with measures to protect farm revenue in the short-term. Farm revenues could decrease in the short term because labor available at the farm is diverted from production activities, and because productive surface areas might be reduced. While financial returns from the planted trees would at best only materialize at the end of the Project. (SES1) 43. The Project will avoid acquiring farmer participation through short term incentives. The risk is that agroforestry activities will be abandoned once the incentives end. Managing this dynamic must be a major feature of the Project's Stakeholder Engagement Plan. 44. DINEPA will ensure that contractors meet the requirements of the Project's ESHS requirements (SES3, SES7, SES8), including measures to prevent impacts on community health and safety, handle chance finds, ensure non-discrimination, prevent and respond to Sexual Exploitation and Abuse (SEA) and Sexual harassment (SH), exclude child and forced labor, and to mitigate pollution
Risk 4. The protection of spring perimeters might result in inadvertent adverse environmental and social impacts, including relating to the following: <i>1.3 Changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods</i> <i>3.2 Air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation</i> <i>3.3 Harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)</i> <i>3.4 Risks of water-borne or other</i>	I = 3 L = 3	Moderate	DINEPA's hierarchy of protection perimeters for catchments springs defines three levels: (i) immediate (minimum 10-meter radius around the spring); (ii) enlarged (100-meter radius); and (iii) an extended protection perimeter. Whereas all activities are prohibited within the fenced perimeter, and certain restrictions apply to the regulatory perimeter, DINEPA only recommends measures in the extended perimeter, such as discouraging slash and burn agriculture and free ranging livestock, but has no regulatory authority to constrain farmers. The Project will build gabions,	The ESMF prepared for the Project identified the following measures to mitigate the risks: 45. DINEPA will prepare proportionate ESMPs (including site assessments) for the protection of immediate perimeters of each of the 5 target springs. 46. DINEPA will exclude any activity that physically or economically displaces persons, as well as fencing or any other measure that limits access by persons with existing assets within the immediate perimeter or that rely on ecosystem services provided by resources from within the perimeter (SES5). This is despite the fact that DINEPA guidelines indicate that they are legally entitled to displace persons within the immediate perimeter, and that it is their policy to erect fences around immediate perimeters. 47. Rather than displacing households living next to springs, particularly Cresson, DINEPA will install watertight septic tanks, and conduct minor works to divert contaminated runoff away from the springs. (ESS8) 48. DINEPA will ensure that contractors meet the requirements of the

<i>vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health</i> 3.6 <i>Adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)</i> 4.2 <i>Significant excavations, demolitions, movement of earth, flooding or other environmental changes</i> 5.2 <i>Economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)</i> 7.1 <i>Working conditions that do not meet national labor laws and international commitments</i> 7.3 <i>Use of child labor</i> 7.5 <i>Discriminatory working conditions and/or lack of equal opportunity</i> 7.6 <i>Occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle</i> 8.2 <i>The generation of waste (both hazardous and non-hazardous)</i>			percolation tanks and contour bunds within the immediate 10-meter radius perimeter of the 5 target springs. DINEPA might use contractors, or rely on locally recruited laborers working under its supervision.	Project's ESHS requirements (SES3, SES7, SES8), including measures to prevent impacts on community health and safety, handle chance finds, ensure non-discrimination, prevent and respond to Sexual Exploitation and Abuse (SEA) and Sexual harassment (SH), exclude child and forced labor, and to mitigate pollution 49. DINEPA will ensure that the works do not negatively affect the quantity or quality of the water coming out of the spring into the water supply system, during and after the works. (SES8)
Risk 5. Rooftop water harvesting systems (Output 3.1.3) might result in inadvertent adverse environmental and social impacts,	I = 2 L = 5	Moderate	The Project will install rooftop water harvesting systems in 350 households	The ESMF prepared for the Project identified the following measures to mitigate the risks: 50. DINEPA will ensure that the selection of households is transparent and non-discriminatory, taking into account that better off households

including those related to: 3.2 <i>Air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation</i> 3.3 <i>Harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)</i> 3.4 <i>Risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health</i> 7.1 <i>Working conditions that do not meet national labor laws and international commitments</i> 7.3 <i>Use of child labor</i> 7.5 <i>Discriminatory working conditions and/or lack of equal opportunity</i> 7.6 <i>Occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle</i> 8.2 <i>The generation of waste (both hazardous and non-hazardous)</i>				have larger roofs, and thus will be able to harvest more water (Leave no One Behind) 51. DINEPA will ensure that households properly treat the water before drinking it. (SES3) 52. DINEPA will ensure that contractors meet the requirements of the Project's ESHS requirements (SES3, SES7, SES8), including measures to prevent impacts on community health and safety, handle chance finds, ensure non-discrimination, prevent and respond to Sexual Exploitation and Abuse (SEA) and Sexual harassment (SH), exclude child and forced labor, and to mitigate pollution
Risk 6. The preparation of Financial Frameworks for Operation and Maintenance (Output 3.1.4) might affect access to basic water needs by vulnerable persons, with potential inadvertent adverse impacts relating to the following: <i>P.3 Risk that rights-holders (e.g.,</i>	I = 4 L =4	Substantial	The United Nations considers water used to meet basic needs as a public good and a basic human right (as per United Nations General Assembly Resolution 61/292 on 28 July 2010). The implementation of tariffs is a very delicate issue,	The development of financial frameworks for the water sector will have potential substantial downstream social impacts. Therefore, to meet UNDP's requirements for a Strategic Environmental and Social Assessment a Poverty and Social Impact Analysis (PSIA) will be prepared during Project implementation to identify and mitigate the risks and impacts, most particularly to ensure that the proposed reforms provide an equitable access to water by the different social groups. The ToRs for the PSIA will also be based on the principles of a SESA approach/process but

<i>project-affected persons) do not have the capacity to claim their rights</i> <i>P.5 Inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities</i> <i>P.6 Restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities</i>			particularly when a significant portion of the population is too poor to fund its basic needs. Unless access to water poorer persons is protected and ensured, there is a risk that water will be provided to those who can pay, while being denied to those who cannot. A significant portion of the targeted users in the 5 target systems is currently either not served, or is served through a small number of public kiosks or water fountains. Some of the unserved users must purchase water from privately operated water tankers that resell at a profit water purchased from the systems.	will focus on the identified socio-economic impacts. The SESA/PSIA shall: 53. Accompany and be conducted concurrently with the preparation of the financial frameworks. 54. Apply the tools and techniques of social and economic analysis to analyze the impacts of the proposed reforms and inform proposed policy reforms before those reforms are carried out 55. Analyze the distributional impact of the proposed policy reforms on the well-being of different stakeholder groups, with particular focus on the poor and vulnerable (Leave no one behind Principle). 56. Propose changes and course corrections to the proposed policy reforms, and identify measures to mitigate any adverse impacts 57. Identify alternative options to enhance poverty reduction and positive outcomes 58. Create space for public dialogue around reforms through engaging stakeholders 59. Engage all stakeholders potentially affected and concerned by the proposed reforms, through a public process of meaningful consultations. DINEPA shall prepare ToRs that shall be reviewed by UNDP.
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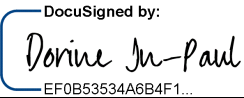
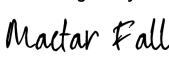
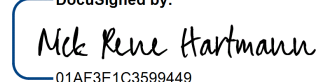
Risk 7. Engagement of consultants and third-parties might create situations in breach of SES requirements All standards	I = 3 L =3	Moderate	Most Project outputs consists of consultancies/technical assistance, workshops, studies, and activities related to stakeholder engagement, including consultations and capacity building. These activities do not in themselves trigger any risks. However, their nature and substance could lead to outcomes or situations contrary to UNDP's SES principles and standards.	The ESMF prepared for the Project identified the following measures to mitigate the risks: 60. DINEPA will ensure that ToRs for consultants take into account SES requirements 61. Consultants will take into account SES requirements when making recommendations (this should be indicated in all consultant contracts) 62. Consultants will avoid creating expectations on the part of stakeholders that would be problematic to UNDP if unmet, or trigger grievances if the persons concerned or interested by the consultant's activities are not consulted or informed as per the SES 63. DINEPA will ensure that all engagement with stakeholders is conducted in a gender sensitive and transparent manner, and in accordance with the Stakeholder Engagement requirements of UNDP												
	QUESTION 4: What is the overall project risk categorization? <table border="1"> <tr> <td data-bbox="489 1096 1207 1144"><i>Low Risk</i></td> <td data-bbox="1207 1096 1270 1144">☐</td> <td data-bbox="1270 1096 2022 1144"></td> </tr> <tr> <td data-bbox="489 1144 1207 1193"><i>Moderate Risk</i></td> <td data-bbox="1207 1144 1270 1193">☐</td> <td data-bbox="1270 1144 2022 1193"></td> </tr> <tr> <td data-bbox="489 1193 1207 1242"><i>Substantial Risk</i></td> <td data-bbox="1207 1193 1270 1242">☒</td> <td data-bbox="1270 1193 2022 1242">The overall risks are moderate to substantial</td> </tr> <tr> <td data-bbox="489 1242 1207 1291"><i>High Risk</i></td> <td data-bbox="1207 1242 1270 1291">☐</td> <td data-bbox="1270 1242 2022 1291"></td> </tr> </table>				<i>Low Risk</i>	☐		<i>Moderate Risk</i>	☐		<i>Substantial Risk</i>	☒	The overall risks are moderate to substantial	<i>High Risk</i>	☐	
<i>Low Risk</i>	☐															
<i>Moderate Risk</i>	☐															
<i>Substantial Risk</i>	☒	The overall risks are moderate to substantial														
<i>High Risk</i>	☐															
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered?(check all that apply) Question only required for Moderate, Substantial and High-Risk projects															

<i>Is assessment required? (check if “yes”)</i>	YES			Status? (Completed, planned)
<i>if yes, indicate overall type and status</i>		X	Targeted assessment(s)	Completed: Gender Analysis Planned: site-specific assessments, including environmental and social baseline, will be inform ESMPs
			ESIA (Environmental and Social Impact Assessment)	In the event that site-specific screenings identify Substantial risks, a proportional/scoped ESIA will be prepared (however this is not currently anticipated).
		X	SESA (Strategic Environmental and Social Assessment)	Planned A strategic Poverty and Social Impact Analysis, underpinned by a SESA principles/process, will accompany and inform the upstream tariff and financial studies during

				Project implementation
	<i>Are management plans required? (check if "yes")</i>	YES		
	<i>If yes, indicate overall type</i>		X	Targeted management plans (e.g., Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)
			X	Proportionate ESMPs (Environmental and Social Management Plan) for Project activities
			X	ESMF (Environmental and Social Management Framework)
	<i>Based on identified risks, which Principles/Project-level Standards triggered?</i>		Comments (not required)	
	<i>Overarching Principle: Leave No One Behind</i>			
	<i>Human Rights</i>	YES	Access to basic water	
	<i>Gender Equality and Women's Empowerment</i>	YES	Mitigated by implementing the Gender Action Plan	
	<i>Accountability</i>	YES	Access to basic water and potential restrictions on land use	
	<i>1. Biodiversity Conservation and Sustainable Natural Resource Management</i>	YES	Risks of introducing alien trees	
	<i>2. Climate Change and Disaster Risks</i>	YES	Climate change could compromise tree plantations and agroforestry activities	
	<i>3. Community Health, Safety and Security</i>	YES	Proportionate to the number of contracted workers	
	<i>4. Cultural Heritage</i>	YES	In the event of chance finds, particularly unmarked graves	
	<i>5. Displacement and Resettlement</i>	YES	Mitigated by avoidance when selecting sites for tree nurseries and reforestation	
	<i>6. Indigenous Peoples</i>	NO		
	<i>7. Labour and Working Conditions</i>	YES	Proportionate to the number of contracted workers	
	<i>8. Pollution Prevention and Resource Efficiency</i>	YES	Proportionate to the number of contracted workers	

Final Sign Off

Final Screening at the design-stage is not complete until the following signatures are included

Signature	Date	Description
QA Assessor  DocuSigned by: EF0B53534A6B4F1...	21-11-22	UNDP staff member responsible for the project, typically a UNDP Programme Officer. Final signature confirms they have “checked” to ensure that the SESP is adequately conducted.
QA Approver  DocuSigned by: DF8E1F86716F4EA...	21-11-22	UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have “cleared” the SESP prior to submittal to the PAC.
PAC Chair  DocuSigned by: 01AF3E1C3599449...	21-11-22	UNDP chair of the PAC. In some cases, PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental <u>Risks</u>		
Overarching Principle: Leave No One Behind		Answer (Yes/No)
Human Rights		
P.1	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	NO
P.2	Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	NO
P.3	Is there a risk that rights-holders (e.g., project-affected persons) do not have the capacity to claim their rights?	YES
<i>Would the project potentially involve or lead to:</i>		
P.4	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	NO
P.5	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? ¹⁰⁷ 16	YES
P.6	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	YES
P.7	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	NO
Gender Equality and Women's Empowerment		
P.8	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	NO
<i>Would the project potentially involve or lead to:</i>		
P.9	adverse impacts on gender equality and/or the situation of women and girls?	NO
P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	YES
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	NO
P.12	exacerbation of risks of gender-based violence? <i>For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc</i>	NO

¹⁰⁷ Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		
Accountability		
<i>Would the project potentially involve or lead to?</i>		
P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decision that may affect them?	YES
P.14	grievances or objections from potentially affected stakeholders?	YES
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	NO
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
<i>Would the project potentially involve or lead to?</i>		
1.1	adverse impacts to habitats (e.g., modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	NO
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	NO
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	YES
1.4	risks to endangered species (e.g., reduction, encroachment on habitat)?	NO
1.5	exacerbation of illegal wildlife trade?	NO
1.6	introduction of invasive alien species?	YES
1.7	adverse impacts on soils?	NO
1.8	harvesting of natural forests, plantation development, or reforestation?	YES
1.9	significant agricultural production?	NO
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	NO
1.11	significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	NO
1.12	handling or utilization of genetically modified organisms/living modified organisms? ¹⁰⁸	NO
1.13	utilization of genetic resources? (e.g., collection and/or harvesting, commercial development) ¹⁰⁹	NO
1.14	adverse transboundary or global environmental concerns?	NO

¹⁰⁸ See the [Convention on Biological Diversity](#) and its [Cartagena Protocol on Biosafety](#).

¹⁰⁹ See the [Convention on Biological Diversity](#) and its [Nagoya Protocol](#) on access and benefit sharing from use of genetic resources.

Standard 2: Climate Change and Disaster Risks		
<i>Would the project potentially involve or lead to?</i>		
2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunamis or volcanic eruptions?	NO
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters? <i>For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes</i>	YES
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)?	NO
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	NO
Standard 3: Community Health, Safety and Security		
<i>Would the project potentially involve or lead to:</i>		
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	NO
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	YES
3.3	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	YES
3.4	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	YES
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	NO
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	YES
3.7	influx of project workers to project areas?	NO
3.8	engagement of security personnel to protect facilities and property or to support project activities?	NO
Standard 4: Cultural Heritage		
<i>Would the project potentially involve or lead to:</i>		
4.1	activities adjacent to or within a Cultural Heritage site?	No
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	Yes
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	No

Standard 5: Displacement and Resettlement		
<i>Would the project potentially involve or lead to:</i>		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	NO
5.2	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	YES
5.3	risk of forced evictions? ¹¹⁰	NO
5.4	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	NO
Standard 6: Indigenous Peoples		
<i>Would the project potentially involve or lead to:</i>		
6.1	areas where indigenous peoples are present (including project area of influence)?	No
6.2	activities located on lands and territories claimed by indigenous peoples?	No
6.4	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?	No
6.5	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? Consider, and where appropriate ensure, consistency with the answers under Standard 5 above	No
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	No
6.8	risks to the physical and cultural survival of indigenous peoples?	No
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Labour and Working Conditions		
<i>Would the project potentially involve or lead to: (note: applies to project and contractor workers)</i>		
7.1	working conditions that do not meet national labour laws and international commitments?	YES
7.2	working conditions that may deny freedom of association and collective bargaining?	NO
7.3	use of child labour?	YES
7.4	use of forced labour?	NO

¹¹⁰ Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

7.5	discriminatory working conditions and/or lack of equal opportunity?	YES
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	YES
Standard 8: Pollution Prevention and Resource Efficiency		
<i>Would the project potentially involve or lead to:</i>		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	NO
8.2	the generation of waste (both hazardous and non-hazardous)?	YES
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	NO
8.4	the use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention</i>	NO
8.5	the application of pesticides that may have a negative effect on the environment or human health?	NO
8.6	significant consumption of raw materials, energy, and/or water?	NO

Annex 6: UNDP Atlas Risk Register

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk owner
1	Civil unrest and general safety conditions could impede project implementation.	Political	I = 4 P = 3 High	The risk is not under the project control. One of the key measures to address the risk is postponing and stopping all project activities in the project area if the security situation deteriorates.	UNDP Country Office
2	Insufficient institutional buy-in and coordination in relation to information management and the design and implementation of adaptation strategies	Social	I = 2 P = 3 Moderate	Local stakeholder engagement during the PPG phase includes the identification of project “champions”, ideally within regional government(s) capable of lobbying for coordination and buy-in among entities of central government. The project will build up existing institutionalised environmental information databases managed by ONQEV and SNRE to implement a continuous information and knowledge-generation system (Output 1.1.3). This system will support coordinated water governance and related decision-making. The adaptation strategies identified under Output 1.1.1 will undergo a cost-benefit analysis (Output 1.1.2) and in addition to an appraisal by technical and scientific studies to ensure that the strategies are both locally appropriate and feasible within Haiti’s context. In addition to strengthening institutional capacities, the project will also facilitate improved planning and coordination between national, regional and local government institutions involved in the management of water and other natural resources to ensure adaptation interventions are optimised.	Project Community Liaison Specialist (see Annex 7)
3	Financial unsustainability of water resilience measures as a result of inadequate buy-in of local community members to water charging systems	Social	I = 4 P = 4 High	The implementation of activities related to improving the sustainability of water supply will involve a participatory design of water tariff systems, including prior awareness raising of the costs of resilience measures, the implications of not implementing such systems, and the relative costs of the alternatives (such as the purchase of water from tanker trucks). Project Social Impact Assessments (PSIAs) will also be conducted prior to any tariffication systems being implemented.	International Water Resources Advisor, Project Manager and Project SES Specialist (see Annex 7)
4	Low survival rates of trees established around water sources and recharge zones	Social	I = 3 P = 2 Low	The reforestation and agroforestry interventions to be established under the proposed project will involve the use of reforestation and agroforestry technical packages, which include detailed information on and climate-resilient plant and crop species. The proposed project will also utilise farmers’ and communities’ knowledge on appropriate plant species to use for these forests.	Local Agroforestry Expert, Local Foresters
5	The potential outcomes of the Project may be sensitive or vulnerable to potential impacts of climate change, especially those associated with	Environmental	I = 3 P = 2 Moderate	Activities during the PPG phase include a thorough inventory of potential site-specific hazards, including information provided by local communities and climate experts. Project implementation activities will be timed to not coincide with periods of the year when extreme	Project international and local experts contracted throughout project implementation

	increase in rainfall.			weather events are more prevalent. Provision will be made in workplans and budgets to allow for weather-related interruptions to ensure that the project remains on schedule. Project interventions are designed to address the impacts of future climate change and to be resilient to climate change hazards themselves.	
6	The proposed project could potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services.	Environmental	I = 3 P = 2 Low	Before the implementation of reforestation and agroforestry interventions, thorough inventories and scientific studies will be conducted in the project's target sites. The results of these inventories combined with the reforestation and agroforestry packages will limit the risk of environmental damage caused by this project. For instance, the reforestation technical packages will stipulate that these interventions can only be done with species indigenous to the region.	Local Agroforestry Expert, Local Forester and Local Hydrologist
7	The proposed project could potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services.	Social	I = 3 P = 2 Moderate	The Project SES Specialist (see Annex 7) will be responsible for the adequate implementation of the Gender Action Plan (GAP) during project activities.	Project SES Specialist
8	Potential unlawful and unfair treatment of workers contracted under the Cash4Work programme for reforestation activities.	Social	I = 4 P = 3 High	The Project SES Specialist (see Annex 7) will be responsible for the adequate implementation of the SESP and the ESMF during the relevant project activities.	Project SES Specialist
9	The resurgence of new variants of COVID-19, impacts the implementation of project activities	Sanitary	I = 2 P = 3 Moderate	Workshops, trainings and meetings will be held virtually or in a mixed format. For activities that require bringing people together, COVID-19 protective materials will be used, and physical distance will be respected.	Project Manager

