



ADAPTATION FUND

**REQUEST FOR PROJECT/PROGRAMME
FUNDING FROM THE ADAPTATION FUND**

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

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ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular Project
Country/ies:	Dominican Republic
Title of Project/Programme:	Enhancing Climate Resilience in San Cristóbal Province, Dominican Republic - Integrated Water Resources Management and Rural Development Program
Type of Implementing Entity:	National
Implementing Entity:	Dominican Institute of Integral Development
Executing Entity/ies:	Ministry of Environment and Natural Resources; National Institute for Water Supply and Sewerage; Community-based NGOs
Amount of Financing Requested:	9,953,692.35 (in U.S Dollars Equivalent)

Project / Programme Background and Context:

Geographical, Environmental and Socioeconomic Context

Geographical and Environmental Context

Located in the Caribbean region, the Dominican Republic shares the island of Hispaniola with Haiti. Country surface is 48,442 km², with diversified topography and geomorphology, including coastal plains, mountain ranges, and valleys. Elevations range from -46 m (Lago Enriquillo) to 3,098 m (Pico Duarte).

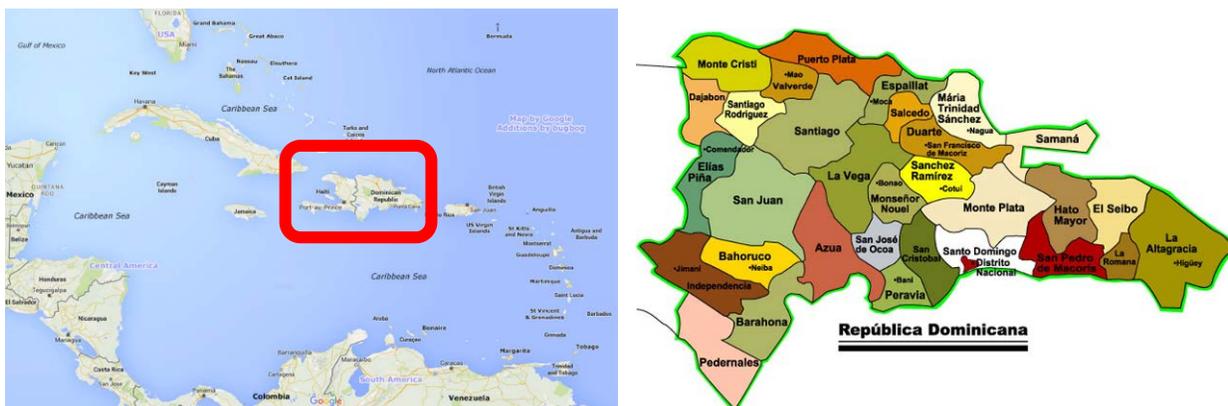


Figure 1: Location of the Dominican Republic

In the Dominican Republic, surface waters cover 0.7% of the country's surface. The main water systems are *Yaque del Norte*, *Yaque del Sur* and *Yuna*. The *Yaque del Norte*, with 296 km, is the longest river in the country, and its basin has an area of 7,044 km². The *Yuna* River is 209 km long, and its contribution area is 5,498 km². The *Yaque del Sur* is 183 km long and its basin area is 4,972 km². The country is home

to a wide variety of plants and animals (more than 6,000 species including amphibians, birds, mammals, reptiles and vascular plants). As protected areas represent 23% of the territory, the country maintains a significant percentage in comparison with the world (average in developing world is 13%, and 8% undeveloped world) (Ministerio de Medio Ambiente y Recursos Naturales, 2012; World Bank, 2014).

Socioeconomic and Development Context

The Dominican Republic has a population estimated at 10.08 million, with a growth rate of 1.2% (ONE, 2018). Administratively, DR is divided into a National District and 32 provinces, which are further divided in Municipalities and Municipal Districts (Fig.1). The population density is 197/km². Despite higher urbanization rates from recent years, still approximately 25% of the population lives in rural areas. The capital, *El Gran Santo Domingo* (Santo Domingo Province and National District), holds 35% of the people.

The DR main economic activities are tourism, free zones, remittances, agriculture, services and mining. After services and industry, subsistence agriculture is the most labour demanding activity (14% of the economically active population) and is focused on rice, fruits, coffee, cocoa, vegetables and livestock. Industry is highly significant to the economy, mainly the production of sugar, mining, textiles and cigars.

According to official figures, almost 50% of DR households live in poverty and more than 10% live under extreme poverty. In rural areas, poverty exceeds 60% (Morillo P., 2014). Vulnerable population includes women who are heads of families, small-scale farmers, landless peasants, micro-entrepreneurs, small merchants, and agricultural workers. These groups suffer from low income, poor living conditions and social exclusion. Women and youth are the most vulnerable, due to the lack of opportunities and because they are not beneficiaries of many types of social assistance programs (Berigüete, 2015).

As the DR population grows also its demand for food, water and energy for people's lives, their livelihoods, and for economic development in the short-term. Access to water is limited in many areas, so agricultural production is based mainly on rainfall, and its productivity is more connected to a greater area of cultivated land and not to any increase in yields at expenses of other ecosystems such as forests. Cultivation and extensive ranching cause degradation and put pressure on water resources, reduce soil capacity, and increase the agrochemical needs. These factors decrease the availability of drinking water.

- Development Challenges

As is stated in the National Development Strategy, the DR is committed to being prosperous, living with dignity, attached to ethical values and respect a participatory democracy country, that guarantees the social and democratic rule of law and promotes equity, equal opportunities, social justice, and that manages and uses its resources to develop economically in an innovative, sustainable manner, and that is competitively integrated into the global economy (END, 2012). This strategy focuses on four strategic areas: a) being a social democratic state based on laws; b) to be a society with equal rights and opportunities, c) to reach a more sustainable, inclusive and competitive economy; and d) become a society of environmentally sustainable production and consumption that is adapted to climate change.

In addition to these issues, the most urgent problems in the country are related to:

- Poverty, extreme poverty and, in general, the reduced capacity to create new jobs and increase the income of vulnerable populations;
- Agriculture, livestock, forestry and fishing activity lack modernization, resulting in low productivity, unsustainability, minimal growth and fewer jobs;
- Little territorial cohesion that causes regional development to be unbalanced, in terms of infrastructure, services and capacities;

- Ensure the adequate and timely supply of drinking water and access to sanitation services that must exist in vulnerable populations;
- High dependence on imported fossil fuels and the lack of a reliable, efficient and environmentally sustainable energy supply;
- The public administration lacks effectiveness, transparency and orientation towards results, and is not based on the rule of law, democracy or citizenship;
- Lack of epidemiological and nutritional surveillance and education systems as fundamental instruments for the food security of the population;
- Lack of risk management mechanisms necessary to minimize human, economic and environmental losses, and for adequate adaptation to climate change;
- Regional integration (generally with the Caribbean) has been -traditionally- poorly managed, resulting in loss of business opportunities;
- Many existing public policies do not incorporate elements of sustainability, gender, territorial cohesion, social participation and institutional responsibility.

Climate Vulnerability and Climate Impacts

• Current Climate Variability

Throughout the year, DR experiences temperature and humidity conditions associated with the tropics. Seasonal temperatures range from 20-25°C in the coldest months (December to February), to 25-27°C in the hottest seasons (June to November). The wet season occurs from May to November, in which most regions receive 100-200 mm per month. Similar to other Caribbean nations, the interannual climate variability of the DR is strongly influenced by *El Niño*. El Niño episodes bring hotter and drier conditions than the average June and August conditions, and *La Niña* brings colder and more humid conditions in that same period. As the country is at the center of the Atlantic hurricane belt, hurricanes and storms occur from August to November. The heavy rains associated with hurricanes contribute significantly to the rainfall totals of the wet season. The occurrence of hurricanes is strongly linked to El Niño, with the most frequent hurricane activity associated with La Niña, and less frequent events in El Niño years.

A recent study on climate trends in DR from 1960 to 2003 (McSweeney et al., 2010) concludes that:

- The annual temperature has increased approximately 0.45°C, at an average rate of 0.1°C per decade. This overheating is faster in the hottest seasons.
- The frequency of "*hot days*" and "*hot nights*" increased considerably, annually in all seasons. The average number of hot days per year increased to 63 (17.4% of the days); and the average number of hot nights per year increased to 48 (13.2% of the nights).
- The frequency of "*cold days*" and "*cold nights*" decreased considerably, annually in all seasons. The average number of cold days per year decreased to 30 (8.3% of the days); and the average number of cold nights per year decreased to 31 (8.6% of the nights).
- The average rainfall in the Dominican Republic has decreased by 5.0 mm per month (4.5%) per decade. This decrease is mainly due to decreases in precipitation, of 7.5 and 5.4 mm per month (6.4% and 3.7%) per decade respectively.

- Expected Climate Change Impacts

Several models on temperature in the Dominican Republic in the long term indicate that:

- The average annual temperature increase from 0.5 to 2.3°C by 2060, and from 1.1 to 3.6°C by 2090. The range of projections to 2090, is 1 to 1.5 °C (being the fastest heating rate in winter).
- The frequency of days and nights considered "hot" under the current climate will increase. Hot days will occur during 29-72% of the days by 2060, and 32-98% by 2090. The days considered hot under the current standards will increase even more rapidly, occurring during the 100% of the days.
- Nights considered "hot" for the annual climate of 1970-1999 are projected to occur for 33-68% of nights by 2060 and 39-98% by 2090. Nights considered hot by current standards of the weather for its season is projected to increase even more rapidly, occurring during 100% of the days per season.

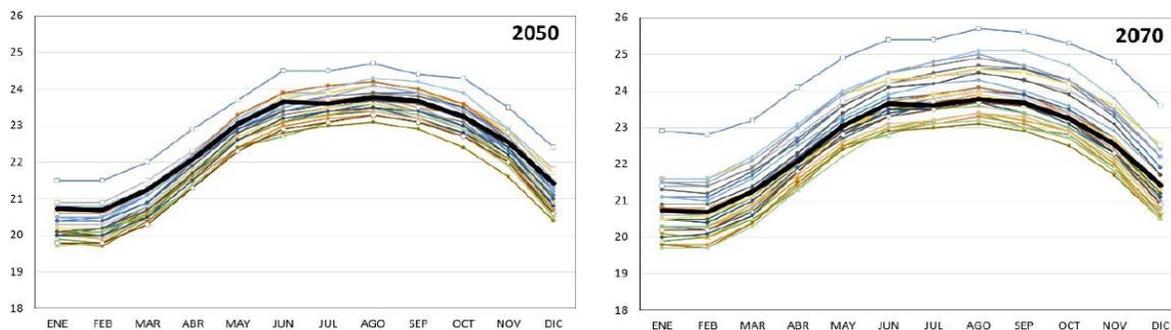


Figure 2: Expected Changes in the Minimum Temperature to 2050 (left) and to 2070 (right)
 Source: Ministry of Environment and Natural Resources, 2016.

Various projections shows decreases in the frequency of days and nights considered cold under current climate. These events will be extremely rare, not happening in most projections, which mean that the warming increase is inevitable. Regarding precipitation, long-term rainfall patterns (Fig.3) concludes:

- The average annual rainfall will decrease, largely due to decreases in rainfall during the wet season. Changes in rainfall vary from (-78 to + 21%) by 2090. Annual changes range from -55 to + 20%.
- The proportion of total precipitation that falls in extreme events is projected to decrease in most models, with changes in the limits of 29% to + 8% by 2090.
- The maximum precipitations of 1 and 5 days tend to decrease in the projections, particularly in wet seasons when the largest reductions in total rainfall are projected.

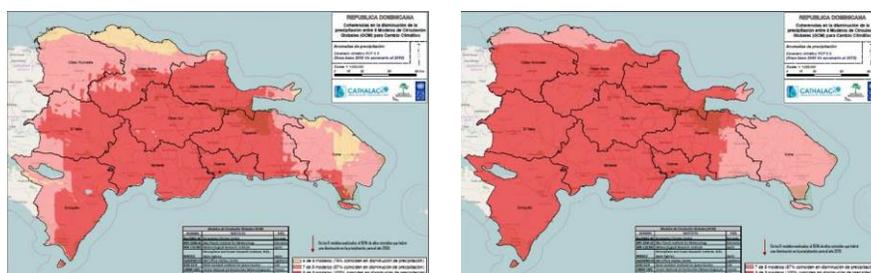


Figure 3: Reduction of Annual Precipitation to 2050 (left) and to 2070 (right)
 Source: Ministry of Environment and Natural Resources, 2016.

Due to climate change, the Dominican Republic can suffer combined impacts in the medium and long term (Christensen et al., 2007). Such impacts, among many others, are:

- Cyclones will probably be, in general, more intense under a warmer climate as a result of higher sea surface temperatures. There is great uncertainty about changes in frequency and changes in trajectories of storms and their interactions with other features of climate variability (i.e., El Niño).
- Potential changes in the occurrence of storms and hurricanes, add uncertainty to precipitation in future wet season. Potential increases in summer rainfall, associated with tropical cyclone activity, which may not be captured in current projections, can counteract the projected rainfall decreases.
- DR is very vulnerable to sea level rise. The sea level in the region is projected to rise (relative to the sea level of 1980-1999) to the following levels: towards 2090: 0.13 to 0.43 m (SRES B1); 0.16 to 0.53 m (SRES A1B); and 0.18 to 0.56 m (SRES A2). Forecasts made at country level, indicate similar values.

Within the National Communications to the UNFCCC, the Ministry of Environment and Natural Resources (MoE) has made a special effort to contribute to the scientific documentation that supports the decision making process relevant to climate change¹. Also it participates in other national enclaves for the production of relevant scientific information, such as the DR Climate Change Observatory.

- Climate Vulnerability and Exposure

DR is particularly vulnerable to weather phenomena. Due to its location in the Caribbean, it is affected by the variable recurrence of climatic phenomena and, frequently, it is affected by extreme events (i.e., storms, hurricanes, droughts). This climatic vulnerability is exacerbated by a combination of human and socioeconomic factors: such as the presence of populations in areas prone to floods and landslides, eroded by subsistence agriculture and poorly managed human settlements (World Bank, 2011).

In its 2016 version the *Climate Risk Index*, a global analysis based on one of the most reliable datasets available, in relation to the impacts of extreme weather events and associated socio-economic data, classifies the Dominican Republic as the tenth most vulnerable country to the impacts of climate change (Germanwatch, 2016). According to the same source, Haiti is the second nation in the same classification, which means that the island of Hispaniola will be affected by climate change in the short, medium and long term; and that a complete and integral adaptation is not only necessary, but urgent.



Figure 4: Effects of Olga and Noel (2007, left) and Impacts of Sandy (2012, right)

According to the latest *Natural Disaster Hotspot*, DR is the third country in the world most exposed to

¹ The Dominican Republic has submitted National Communications in 2003, 2009 and 2017, and currently is preparing its First Biennial Update Report. All these documents are available at: <https://goo.gl/WwSnPQ>.

multiple risks (World Bank, 2016). According to the report, 97.3% of the territory and 96.8% of the population is exposed to two or more risks. The report also places the country in the second position of the nations with the highest probability of experiencing economic risks as a result of greater exposure to two or more risks. In addition, 90.7% of the people and 92.1% of the GDP reside in areas at risk. A similar picture is reported regarding to experience three or more risks, drawing attention to increase resilience.

From 1961 to 2014, the Dominican Republic experienced 56 hydrometeorological events (those with the highest recurrence, causing significant losses), representing 96% of extreme events from that period. These events were: floods (41%), droughts (2%) and storms (50%). Storms were responsible for almost all economic damages (96%) in such period. For the period 1979-2007, only 6 events (*David, Federico, Georges, Jeanne, Olga and Noel*) caused losses of USD 5,220.1 Million (of 2005) (World Bank, 2015).

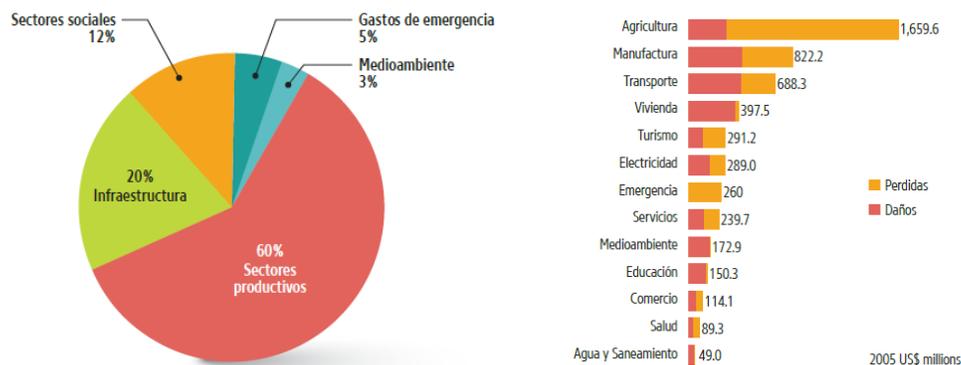


Figure 5: Damage Caused by Sector (David, Federico, Georges, Jeanne, Olga and Noel)

Source: World Bank, 2015.

Currently, the economic impact of extreme events is estimated at USD 420 Million per year (average for 1961-2014). In the case of hurricanes, such damages are estimated as USD 1,997 Million (3.3% of GDP) (World Bank, 2015). The agriculture sector has been the most affected, due to its high vulnerability. In terms of food security, similar to other tropical countries, most of the edible crops are at the upper limit of the optimum production temperature, which means that any increase in the average temperature will cause a decrease in the crop yields. Also, extreme rains reduce the productive capacity of soils.

Water is recognized as a transversal resource in the National Development Strategy (END, 2012), with a direct link to the Sustainable Development Goals. The physical demand for water resources is projected to increase by 13% by 2030. The shortage of drinking water due to extreme climatic events, such as droughts and floods, will increase the population's exposure (especially of women, children and aging) to water-related diseases, such as diarrhea, amebae, cholera, gastroenteritis, etc. (Salud Pública, 2015).

On the other hand, water resources play different key functions for the development of the country: the generation of hydroelectric energy (15% of the total electricity consumed), drinking water, irrigation and drainage, among others, have been affected by extreme events (Berigüete, 2015). Additionally, the occurrence of pests and diseases (such as dengue, cholera, malaria, etc.) and the modification of biophysical conditions (changes in temperature, humidity, rainfall, wind, etc.) are also consequences of climate changes that affect the availability and quality of water resources (Hatfield and Prueger, 2015).

Given the multiple uses of water, addressing the adaptation to climate change is not only for those responsible for managing water. However, as a substantial proportion of the population still depends directly on agriculture for their livelihood, and that in many places people do not have drinking water, it is important to observe the relationship between water resource management and territorial planning.

- **Socioeconomic Vulnerability**

For 2018, the Human Development Index (HDI) of the DR was 0.736 (position 94). However, after more than 50 years of economic growth, if the HDI is discounted by inequality, it falls to 0.590 (position 140). Also, climate change may overshadow the country achievements and its development trends (UNDP, 2018), particularly due to its geographical, biological and socioeconomic characteristics, the historical social debt, and a large part of the population and its economic activities are located in coastal areas².

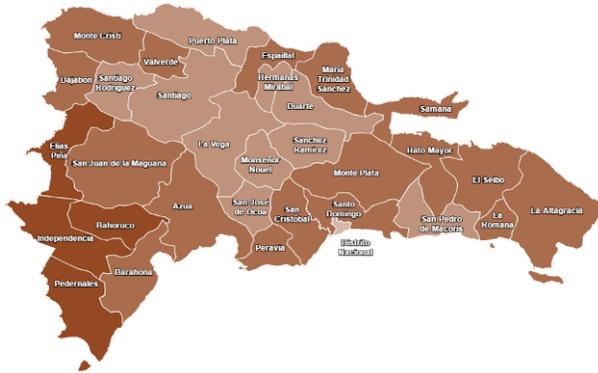


Figure 6: Human Development Index by Province
Source: United Nations Development Program, 2017

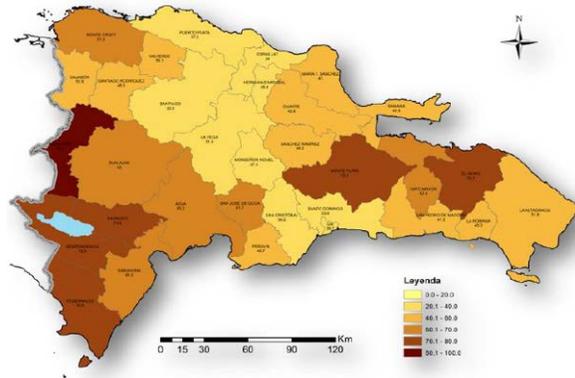


Figure 7: Share of Poor Households by Province
Source: (Morillo P., 2014).

As DR is highly dependent on climate-sensitive economic activities, such as tourism and agriculture, and almost 50% of households live in poverty, climate change is a significant development challenge (ECLAC, 2015). Studies on the interrelation between climate change and multidimensional poverty indicate that the DR ranks 33rd among the 100 countries most at risk due to climate change (Yohe et al., 2006).

- **Adaptation Challenges**

For the Dominican Republic, the main national priorities are related to achieving an appropriate and efficient adaptation (END, 2012). In this context, the National Action Plan for Adaptation to Climate Change in the Dominican Republic (PNACC-RD) identified water resources, food security, agriculture and public health as the sectors most vulnerable to stress climate change (SEMARENA, 2008).

Evidence suggests that the impacts of climate change on health are transmitted through various mechanisms, such as heat waves, natural disasters and infectious diseases. The application of predictive models indicates that climate change increases the number of cases of malaria, dengue, leptospirosis, zyka and gastroenteritis, in relation to the baseline (ECLAC, 2013c). This generates a variety of economic expenses such as lost productivity, increases in hospitalization and medicines. These costs can, however, be reduced by implementing measures to improve primary health care, water quality and sanitation.

Agriculture is particularly sensitive to weather and hydrological conditions. With rice productivity, for example, it's expected a decrease between a 3% to 15% by 2050, and of between 1% and 30% for crops such as cassava, plantain, sweet potato and tomato (ECLAC, 2013). The decreases in yields will also have negative implications for jobs in the agricultural sector and for food security, as well as potential price increases that would, of course, have a disproportionate impact on the poorest, increasing the imbalance in the external sector. Some adaptation measures (i.e., water conservation schemes and early warning systems) that have other positive co-benefits as well have been proposed (Vergara et al., 2013).

² See the technical report *The Economics of Climate Change in Latin America and the Caribbean: Paradoxes and Challenges of Sustainable Development*. Available at: <https://goo.gl/9hVQnV>

The decrease in the duration of the rainy season experienced (6 months in the past 36 months) and the total volume of rainfall have caused the decline in production, often associated with the lack of water. Acute droughts are identified as the most significant risk in the medium and long term (Arenas, 2016). The drought of 2014-2015 caused damages that still have to be calculated³. Due to the climatic impacts accumulated in the poorest areas, exacerbated by the accumulated social debt and marginalization, it is reasonable to conclude that an immediate adaptation must focus on water, agriculture and health.

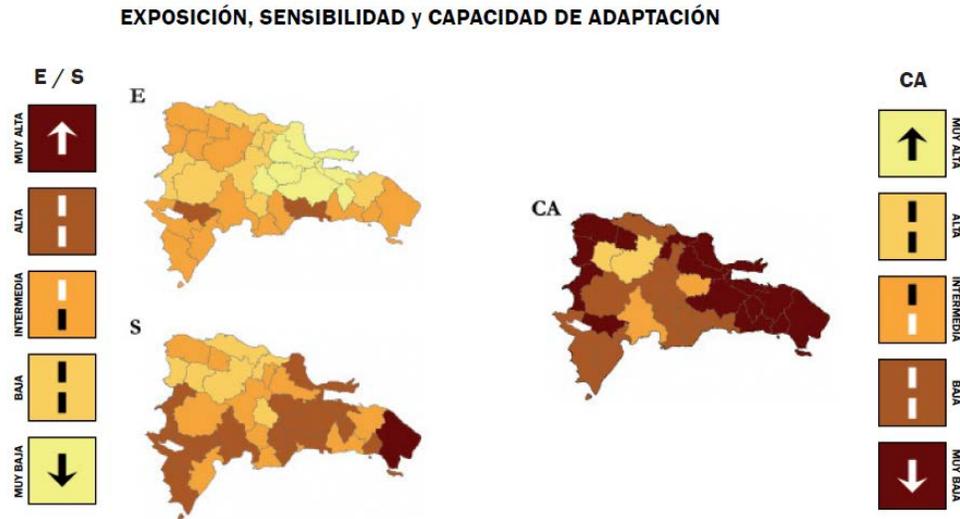


Figure 8: Vulnerability Map of Water Resources by Province

Source: (Izzo et al., 2012)

On the other hand, unsustainable forest practices and high rates of deforestation amplify the impacts of climate change, manifested in the form of: shortage of fresh water, desertification, loss of soil fertility, loss of agricultural productivity and increased sensitivity to human and natural risks (SEMARENA, 2008).

Targeted Interventions

Target Sector and Target Area

The study *Critical Points for the Vulnerability to Climate Variability and Climate Change in the Dominican Republic*, analyzes climate vulnerability as a function of *exposure*, *sensitivity* and *adaptive capacity* in priority sectors: tourism, drinking water, agriculture, protected areas, energy and human settlements. This study provides the first approach of the multidimensional vulnerability to climate change in the country and by province (Izzo et al., 2012), reporting following parameters for San Cristóbal Province:

Table 1: Critical Points Related to Climate Change in the San Cristóbal Province

Global Vulnerability		Poverty	HDI	Vulnerability by Sector					
Present	Future			Agriculture	Coastal	Tourism	Energy	Settlements	Water
High	Very High	36.2%	0.441	Very High	High	Medium	Very High	High	Very High

Based on the National Bureau of Statistics, 2014; Izzo et al., 2012; Berigüete, 2014b.

³ A full analysis of such drought and its impacts is included in "Drought Boosts Science in Dominican Republic". Available at: <http://www.ipsnews.net/2016/01/drought-boosts-science-in-dominican-republic/>.

A significant proportion of farmlands are soils with poor physical properties and low organic content. Relatively good soils are underground water laterites, which tend to be limited in depth by slabs. Soils are very susceptible to erosion due to the thin vegetative layer and the torrential nature of poorly distributed rainfall. Traditional management practices for soils (i.e., fertilizer use, water management, etc.) and adverse climate change conditions, results in low productivity for crops and livestock.

San Cristóbal has received a significant public investment in recent years. However, the Province still has an underutilized potential that could support a modernization of the water supply for multiples uses and users (including a network of watersheds with very fertile areas, such as *Haina*, *Nigua* and *Nizao*). As these areas can become zones of greater agricultural production, its reasonable to assume that drinking water availability should increase too. Almost all rural communities do not have fresh water systems or adequate sanitation systems, and their economic systems are highly dependent on agriculture (National Bureau of Statistics, 2012). This causes conflicts of use for drinking water, irrigation and livestock.

- Impacts of Climate Change

Climate change is expected to have an impact on agricultural production, increasing pressure on water resources and intensifying conflicts with water for human consumption. Agriculture is predominantly rain-based, with less than 30% of irrigation potential beign developed. Approximately 80% of rainfall occurs between June and August-October, and excess soil moisture is found during these periods. Both the onset and the cessation of rainfall are irregular, and the temporal and spatial variability is high. Even within the regular humidity during the year, from 14 to 17 drought days per month are common from November to April (ONAMET, 2016). In most areas, most soils have a medium to low retention capacity, due to their nature, texture and content of organic matter⁴. The high rates of surface runoff during the rainy months cause the accumulation of sediment in water storage facilities, such as small dams and community holding ponds. The high rates of evaporation in the dry and hot season (close to 1,600 mm per year), the sedimentation caused by erosion and the clearing of trees to make farms, contribute to reduce the capacity of water retention and the rapid drying of ponds and retention elements.

flood events are most relevant for the municipalities in the southernmost part of the SC (coastal areas) and for the northernmost municipalities (mountain slopes), partly due to climate impacts in the form of extreme rainfall. Floods result in loss of lives, crops and infrastructure and waterborne diseases.

Trends of Climate Change

- Climate Impacts on Water Resources

Climate change will exacerbate the current situation of SC water resources and, therefore, also on the programs and activities of the water-dependent sectors, such as agriculture, energy and livestock. According to World Bank (World Bank, 2016b) and FAO (FAO, 2017), projected climate scenarios on the water resources of *Haina*, *Nizao* and *Nigua* (SC largest and greater basins) indicate that:

- Runoff or discharges in the three basins are sensitive to changes in precipitation and temperature. A change of 15% in rains or a 1 ° C in temperature could cause a reduction in runoff greater than 35%⁵;

⁴ See the *National Action Program to Combat Desertification and Drought of the Dominican Republic* and the *National Strategy for the Sustainable Management of Soils in the Dominican Republic*, elaborated by the Ministry of Environment and Natural Resources (2015) and available at: <https://goo.gl/kGEVsX>.

⁵ This impact is considerably larger than expected - under the same premises - in other significant watersheds of the country, such as the Yaque del Norte or Yuna, in which the potential decrease would go from 18 to 22%.

- The climate change scenarios, using simulations, indicate reductions in flows in all areas, minimally between 14-24% and 32-46% for 2020 and 2050 respectively;
- Climate change could cause a reduction in the recharge of groundwater in all areas, minimally between 8 and 15% by 2030, and from 29 and 32% by 2070;
- The demand for water for irrigation could also be significantly affected, demand of irrigation water will increase from 40 to 60% by 2030, and even from 85 to 95% by 2050; and
- Third National Communication show that the three basins were marginally vulnerable in 1990, will be vulnerable (water stress) in 2030 and will be extremely vulnerable (water scarcity) from 2050.

- Impacts and Drivers of Climate Change

Much of the poverty in SC is induced by risks and vulnerability. This exposure is determined by a series of factors, ranging from natural, social and human-made causes⁶, which include -inter alia- the following:

Risks and vulnerabilities induced by climate: About 72% of the rural population depends on unimodal agriculture based on rainfall for their food, income and means of subsistence. With climate change, it is expected that the frequency, incidence and intensity of droughts and floods will increase and, therefore, deteriorate the viability of survival strategies over time. This could cause abandonment and migrations.

Limited opportunities for non-agricultural activities: almost all rural population depend on agriculture, livestock and some forestry activities, with very few opportunities for non-agricultural activities. For four to five months in the year, most of agricultural population has no alternative or complementary means to secure their livelihoods, since the infrastructure to support other activities is very underdeveloped⁷.

Weakening of traditional safety nets: mutual support initiatives, community savings, and remittances from friends and family members living outside the country (mainly in the US and Europe) once served as an important source of food, income and complementary means of subsistence for families. However, due to political, social and economic pressures, these traditional mechanisms of safety nets have weakened, which has increased the exposure of the poor, especially women, children and elderly.

- Adaptation Challenges and Potential Solutions

Climate change presents societies with a variety of new challenges, especially in the poorest areas, as changes in the average temperature affect food productivity and water availability, causing another burden of malnutrition, diarrheal diseases and other infections by way of water and/or air (Huq, 2014). The water resources and water supply systems of SC are vulnerable to current weather patterns, their variability, and anticipated droughts and floods. Similarly, the productive sectors (agriculture, forestry, livestock, etc.) that sustain the livelihoods of the rural population, are also severely affected by weather.

Both vulnerability (natural and induced) and adaptive capacity are unequal and, in many cases, the most vulnerable individuals and communities are the least able to adapt. This gives more shape to the scale

⁶ These not include the lack of mainstreaming of poverty-environment links and climate change in land plans. This means a challenge for DR, as indicate the latest country profile of the UNDP-UNEP Poverty-Environment Initiative.

⁷ Although small farmers participate in domestic initiatives or agricultural micro processing, such as coffee, onion, corn, coffee and coconut, the markets for these products are underdeveloped, due to limited production caused by lack of technology and inefficient commercial practices. The livestock sector, which is seen as the alternative to provide alternative sources of income, is also very underdeveloped due to limited investments in that sector. As a result, opportunities to supplement food security and income worthy of subsistence agricultural activities are limited.

and types of adaptation actions required in response to the nature and context of climate vulnerability.

The main problem that the proposed program must address, and that requires adaptation, is the reduction induced by climate change of water availability, the increase in the unpredictability of water resources, and the negative impacts associated with the livelihoods of the rural communities of SC. To the effect, preferred solutions for adaptation must address climate impacts on availability of drinking water, improve the sanitation services and measures that reduce the vulnerability of the immediate sectors (agriculture, livestock, forestry, fisheries, etc.) that support livelihoods in poor communities.

Although consequences and effects of climate change on water resources have been well established at country level (END, 2012), the understanding of how to deal with potential impacts at regional and local levels shall be developed. This is due, among others, to the limited research, the limited promotion of opportunities, and the scarce investment made to generate the necessary knowledge for adaptation and increase the resilience of systems -natural or human- against real or expected threats (Berigüete, 2015).

Adapting water management systems to ensure regular supply and distribution under climate change, and reducing the vulnerability of local communities and their livelihood activities, remains a major challenge throughout the DR. Natural disasters such as floods, droughts and forest fires that have occurred in several areas of SC in the last two decades, increasingly frequent and intense, have led to seasonal stress to the poorest people. Something similar is attributable to water-related diseases.

The adaptation measures considered as potential solutions, shall to include the following key elements:

a. Planning of the management of water resources considering the impacts of climate change;

Although the Government has invested in important watershed development programs, it does not consider the impacts of climate change on the communities that depend on the rivers as its main water source. Currently, there are no management plans for the small basins and tributaries used directly by local communities nor early warning and rapid response systems, as evidenced by the floods in 2016⁸.

The interventions of the Program shall to ensure that water can provide -in a sustainable manner- the range of goods and services necessary for social, economic and environmental adaptation. Therefore, proposed measures focused on the underlying causes of the vulnerability of communities (and the creation of links with key institutions and policy makers), and that affect their capacities for adaptation to climate change, are offered considering them to be the main sources of vulnerability identified above.

Although measures for medium and long-term adaptation are considered as priorities, the resources of the Program will be used to develop community projects for water management, especially for human consumption and basic sanitation, taking into account future climate change, and its eventual linkage to high-level management plans for large basins (bottom-up approach). In order to increase the resilience of communities, concerted and synergistic efforts will be made with the government and municipalities to achieve integrated management of resources water resources that include issues of adaptation.

The integration of adaptation into integrated water resources management will help rural communities

⁸ In November 2016, four weeks of prolonged rain, flooding and landslides affected the north of DR, causing more than 20 deaths, displacing more than 20,000 people, isolating 130 communities, and causing severe damage to homes, hospitals, roads and communication systems. The damages of these floods to agriculture and infrastructure were approximately US \$ 5.0 billion. The disaster forced the government to decree a state of emergency to channel resources to the affected areas, which were practically the entire north, northwest and northeast of the country.

to respond in a timely manner to disasters related to climate change. In a more practical way, the Program will resort to various options for the adaptation of water management strategies, such as:

1. Maintain water supply more efficiently;
2. Adopt innovative measures to take advantage of water, especially for human consumption;
3. Increase water storage and improve availability and quality;
4. Harness the potential of groundwater; and
5. Restore ecosystems through the protection of watersheds and buffer zones.

b. Community participation in IWRM and to reduce vulnerability to the impacts of climate change.

There are a limited number of communities that benefit from a reliable water supply in SC. Historically; there is a limited human capacity and limited financial resources to invest in systems for water capture, treatment and storage. Also, there is a poor knowledge base and effective capacity for water capture, management and conservation, when addressing climate-induced water scarcity. IWRM is required to expand the number of beneficiaries and improve the management of water resources in poorest communities of SC, since this problem creates the conflict of use of the resource to meet human needs.

To establish community plans for the supply and management of the various sources of water, for the scarcity of resources under conditions of climate change, it is crucial to achieve this in a large number of communities. This will require financial support for the operationalization of the community plans, as well as for the improvement of the infrastructure for the collection, storage and secure distribution of water. Integrating adaptation into community management planning will help the most vulnerable to respond in a timely manner to climate disasters and improve the resilience of water supply sources.

Given the predominance of groups of small landowners, adequate coordination systems will be established so that water management planning contributes to increasing their profitability and reduces transaction costs. Wherever possible, emphasis will be placed on building, strengthening and developing the capacities of existing community organizations, taking advantage of existing institutional arrangements (such as the Community Associations of Rural Aqueducts -ASOCARES- for example).

c. Diversification of the livelihoods of local communities under the impacts of climate change.

There is an excessive dependence on the provision of rainwater for agriculture and livestock, which makes communities vulnerable to climate change, which is further complicated by the limited capacity to capture, manage and conserve water. Due to current erratic rainfall patterns, there is limited capacity to increase productivity and improve the capacity for diversification of livelihoods. In addition, agricultural practices can be adapted to take advantage of any possible improved water supply, but also to be more resilient to low water availability, moving away from reliance on rainwater and passing through to protect micro-basins. Significant financial resources and improved capacity to provide alternative knowledge and means to livelihood activities, such as agro-ecological practices, are needed.

In relation to this particular, the strategies to consider include:

1. Diversification of livelihoods. To improve the water collection, treatment, storage and conservation, can create a surplus, which have the potential to create opportunities to diversify the community livelihoods by addressing climate risks. These adaptation solutions have a particular focus on supporting livelihood options for women, who are often the most vulnerable to climate change.

2. Improve water supply systems that improve agricultural processes. Once the demand for water for human consumption is assured, small-scale irrigation schemes and other measures such as planting water will be encouraged, to improve the productivity of the intervened zones and thus improve the livelihoods of target communities. This is very important to achieve long-term sustainability.
3. Improvement of agricultural techniques. Under conservation activities, encourage the development and utilization of agroforestry techniques and approaches more favorable than those used currently in future water availability scenarios. This includes the use of seed varieties that enable adaptation to a changing climate and rapidly maturing varieties that secure production under higher warming.
- d. Improvement of institutional and community capacity to face climate risks.

Currently, the knowledge base of the impacts of climate change on water resources at community level is very weak to support institutional processes and development, from a regional to local institutional level. Increasing the knowledge of institutions to support measures on the ground (IWRM and livelihood diversification) is one of the relevant solutions to reach and adequate adaptation. Building the capacity of communities, organizations and institutions to address climate change will also provide sustainability, acceptance and empowerment. This aspect has been cited as key to the replication of the Program.

The development and dissemination of knowledge products, especially those related to community-level water management and alternative livelihood options, as well as the strengthening of institutional capacity through hands-on learning, are crucial steps that will be carried out to increase the replicability.

- e. Promote management systems that favor the supply of services to contiguous agricultural fields.

To improve the productivity of the fields and the efficiency in the use of inputs, products and other services, land use planning and management systems that provide services to contiguous agricultural fields will be promoted. There are some institutional regulations for cutting down trees in riverine areas, but the application remains a challenge. Through the dissemination of good practices, pilot interventions and the incorporation of decision makers to dialogue with communities, the program can support key institutions to enforce such regulations (i.e. provide livelihood incentives to communities or for payment for environmental services). Raising community awareness during the implementation of activities will strengthen the value of ecosystem services to improve livelihoods and reduce disaster risk.

- f. Adaptation of agricultural practices

The adoption of favorable agroforestry practices will be promoted to take advantage of any possible improved water supply, but also to be more resilient to water scarcity conditions, away from rainwater dependence. For example, bring lessons from other areas (probably drier) or from successful initiatives, where water availability results in better agriculture, such as achieve higher yields or less water demand.

- Barriers Identified to Potential Solutions

The persistence of risks and the exacerbation of vulnerability in San Cristóbal (as in many other places in the Dominican Republic) are also derived from an intricate network of causal factors that have their roots, in many cases, in historical and contemporary failures of the development policies. Central to these, some of the main barriers that limit the implementation of potential adaptation solutions are fundamental. Addressing these barriers will constitute the general change stimulated by the Program, in order to reduce vulnerability and increase the resilience of the beneficiary communities. Some of the barriers to the expected results, in the provision of preferred solutions for adaptation, are the following:

- a. Better planning and management of water resources taking into account the impacts of climate change on surface and groundwater sources.

Limited institutional capacity in the integration of climate change in the planning and management of water resources in San Cristóbal. The attention on climate change in DR has gained momentum, both at the highest political level and across sectors and regions. Adaptation to climate change is included in the Constitution and main national development policies, in particular, the National Development Strategy, coordinated by the Ministry of Economy, Planning and Development (MEPYD). The Ministry of Environment and Natural Resources (MoE) and the National Council for Climate Change and CDM (CNCCMDL) are the main institutions for climate change and the activities of the UNFCCC in the country, and are responsible -together with MEPYD- for coordinating the National Climate Change Policy (PNCC).

At the implementation level, the MoE is the main entity for government coordination of activities on adaptation to climate change (as CNCCMDL does in mitigation), the UNFCCC and other environmental conventions ratified by DR. The capacity of these and other institutions to incorporate climate change into their activities is being addressed through programs and projects supported by organizations such as JICA, USAID, AECID, World Bank and UNEP. However, the detailed technical capacity to respond to specific climate-induced problems, in particular the development and implementation of solutions on the ground, such as those related to water resources, food safety and resilient livelihoods, it is still low.

Limited capacity to manage cross-border sources of risks and vulnerabilities. Much of SC shares common borders with neighboring provinces (i.e., *Peravia, San José de Ocoa, Monseñor Nouel, Monte Plata* and *Santo Domingo*), which means that there are potential vulnerabilities outside the province as a result of the cross-border use of water resources. There are cases of floods triggered by weak coordination in basins management (across territorial and/or institutional boundaries). Following the transboundary nature of the province's basins, this could represent a barrier to the implementation of some adaptation measures, including the activities of neighboring provinces aimed at increasing their own resilience⁹.

- b. Resilient climate management of water resources by communities

Poor rural communities and local organizations currently lack incentives and preparedness to manage and provide better oversight of the management of natural resources, especially water resources, and particularly water for human consumption. The risks and vulnerabilities of communities are often aggravated by the increase in human-induced disasters caused by poor resource management, which sometimes degenerate into conflicts. In fact, SC has been the seat of most of the recurrent cases of conflicts over land ownership in DR (two examples being the lands of the *Rio Haina* and *Catarey* sugar mills). The consultation record, developed as a support material for the development of this proposal, reveals that water resources are also a source of conflicts between communities and farmers, especially for the dilemma of water for human consumption vs. agricultural-livestock use vs. the recreational

The vulnerability of the income of the communities of SC is accentuated by the limited investment on the development. Incidentally, the scarce investment in the construction of small dams, storage tanks, retention structures, and to make a judicious management of basins, negatively affects the capacity of many areas to produce food. This has also led to situations in which mismanagement of water resources has contributed to increasing risks and vulnerabilities to climate-induced disasters. For example, high rates of surface water runoff during the rainy season drag the already fragile and depleted soils, causing flash floods associated with sudden and heavy downpours that affect biodiversity and ownership of

⁹ For example, during the intense rains of November 2016, the opening of the Taveras Dam in Santiago resulted in a massive flood for the provinces of Santiago Rodríguez and Monstecristi, which are located downstream from the dam. Losses in agriculture and productivity due to this action have been estimated in the DOP 1.2 Billion.

areas trapped in their trails. This is a risk to the short and long-term security of the livelihoods of the communities located in the drainage routes of major rivers such as Nizao, Haina and Nigua.

c. Greater diversification of the livelihoods of the communities.

There is a knowledge gap about the potential of IWRM as a vector to achieve alternative livelihoods that serve as a safety net for rural communities. Most communities remain rooted in rainfed agriculture as a means of subsistence, not seeking other opportunities for economic progress (agriculture is seen a vehicle for economic growth and poverty reduction, which is highly promoted by the government¹⁰. However, the decrease in agricultural production and productivity, show an excessive dependence on rainfed agriculture, along with the decrease of soil fertility and non-sustainable agricultural practices (such as slash and burn, agricultural migration, etc.). These factors are aggravated by inefficient policies and inadequate investments that do not translate into support systems for agricultural infrastructure, such as the protectionism of some items, which do not promote a real efficiency or diversification.

d. Increased knowledge and local capacity for the management of water resources and diversification of the livelihoods of communities.

The quality and potential of a large base of human resources in SC have remained underdeveloped and untapped, due to limited investment in the provision and access to a good quality education and other capacity building development programs at all levels. After 85 years of its creation, SC is still lagging behind many other provinces, in terms of educational development, and despite the fact that people embraced education as the way to achieve social mobility and out of poverty, and from the late start and the current limitations of the education sector. The proposed Program will help address this barrier, through a range of capacity development activities and knowledge generation by communities and local and provincial organizations, with emphasis on the use of concrete demonstration actions that allow a practical learning process. This is crucial for the sustainability of the actions implemented.

Removing the mentioned barriers is part of the expected results according to the solutions considered:

Table 2: Barriers to Achieving Preferred Solutions

Solutions Considered	Identified Barriers
Improved planning and management of water resources taking into account climate change impacts on surface and groundwater sources.	Limited institutional and community capacity to integrate climate change in the planning and management of water resources. Limited capacity to manage sources of transboundary risks and vulnerabilities (with other provinces or with other communities).
Smart-climate resilient management of water resources by communities by themselves.	Lack of incentives and preparation to manage and supervise the management of natural resources. Income vulnerability accentuated by limited investment in the development of community infrastructure.
Enhanced diversification of livelihoods of the communities through better water services and development of agroforestry.	Lack of knowledge about alternative livelihoods that serve as safety nets for communities. Deeply rooted cultural beliefs in which communities remain rooted in rainfed agriculture as their only means of subsistence.
Improvement of institutional and community capacity to face climate risks.	The quality and potential of human resources are still developed and many are still untapped due to limited investment in the

¹⁰ Inauguration speech by President Danilo Medina, August 16, 2012. This declaration initiated the "surprise visits" program where communities and producers are encouraged to formalize in order to receive soft loans from the government to finance their agriculture/livestock activities. This program has mobilized PDO 33.8 bn in 5 years.

provision and access to quality education and other formal and informal capacity development programs at all levels.
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Based on McSweeney et al., 2015; Christensen et al., 2007

Other Adaptation Challenges

San Cristóbal has a high degree of vulnerability, due to the large number of human activities within the protected areas (272.62 km², 22% of the area of the province). In most cases, human activities are incompatible with the protection measures established by laws and regulations (such as extraction of river materials, subsistence agriculture in forested areas, etc.).

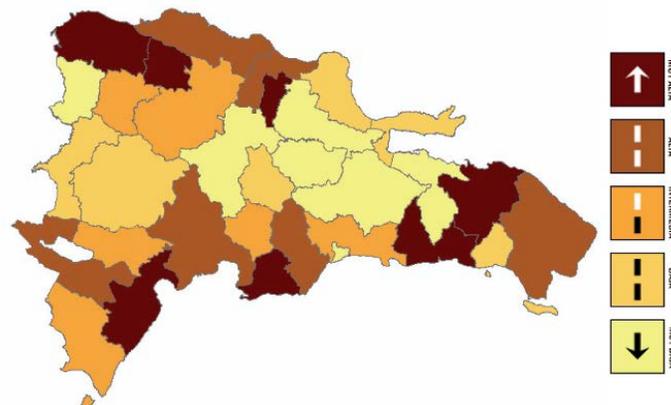


Figure 10: Vulnerability of Protected Areas by Province

Source: Izzo et al., 2012

According to the latest pollution index (Blacksmith Institute, 2015), SC is one of the most polluted places in the world, due to the enormous industrial and chemical activity existing in *Bajos de Haina* (typically referred to as a "Dominican Chernobyl"). Other impacts related to climate have been identified, such as biodiversity loss, sea level rise, desertification in some areas, and the degradation of natural habitats.

Problem Addressed

The proposed Program seeks to address the negative impacts that expected variations in temperature and precipitation will have on SC, in terms of water management, due to the greater number of warmer days, longer dry periods, increased drought events, and greater intensity of rainfall in shorter periods of time. These threats will increase the vulnerability of the rural population, especially small producers and the poorest households. This vulnerability is aggravated by other underlying factors such as the heavy dependence on agriculture; greater soil degradation due to intensive use and monoculture; soil and water conservation practices that are insufficient; high poverty levels; lack of access to development opportunities; deforestation and degradation of areas; and inadequate water supply and sanitation.

The Program will address specific climate threats that affect available water resources and management in specific areas. These threats include variations in temperature and rainfall patterns, increases in extreme weather events (as storms and hurricanes), increased severity of droughts, lack of resources and capacities to manage water resources, and deterioration of public health. The program will have other positive impacts on the most vulnerable populations of the province, namely, small producers and vulnerable communities, which are the target population of the program. The program focuses on

drinking water and sanitation, and its links to public health, reforestation, livelihoods and well-being.

Table 3: Target Areas of the Program

Zone	Included Communities	Beneficiary Population	Women Included	Poverty	Vulnerability
El Caobal	1. El Caobal 2. Cuco 3. Delgado 4. Puyenes 5. Los Mosquitos 6. La Yaguíta 7. Domingo 8. Peleopoldo 9. Los Pinedas	15,500	7,780	41.4%	High
Loma Verde	10. Loma Verde (partially)	3,500	1,760	72.6%	Very High
Castaño	11. Castaño 12. Los Jesús 13. Nuñez Abajo 14. Los Mejías 15. Vietnam 16. La Cuaba 17. La Cuabita 18. Loma Verde (partially)	3,250	1,630	76.3%	Very High
Los Algarrobos	19. Los Algarrobos 20. Ochoa	900	450	82.2%	Very High
San Francisco	21. San Francisco	500	250	84.2%	Very High
Arroyo Higüero	22. Arroyo Higüero	450	225	84.6%	Very High
El Fundo	23. El Fundo 24. Toronja 25. Esperanza 26. Juanita 27. Medina Abajo 28. La Sabana 29. Pachín 30. Juliana Abajo	200	105	90.4%	Very High
TOTAL	30	24,300	12,200		Very High

Based on the National Office of Statistics, 2014; and Izzo et al., 2012. Confirmed during field visits of March 2018.

Based on consultations with key government institutions, the Program targets the poorest municipalities of SC, especially those where there are no adequate potable water and sanitation services, and where the level of these services is compromised by the effects of current and anticipated climate change. At community level, interventions have been defined on the basis of aspects such as vulnerability, population, poverty, social cohesion and cost-efficiency, and where there is no duplication of efforts.

Project / Programme Objectives:

Water is a transcendental aspect within the thematic priorities and cross-cutting themes of the development agenda of the DR, due to its effects on public health and rural livelihoods. Integrated water resources management (IWRM), which takes into account climate change, especially in river basins, sub-basins and other sources of water supply for rural communities, is a requirement for any intervention

related to water with which you want address the impacts of climate change and the vulnerability of communities. Therefore, inter-sectoral and inter-community coordination is essential to address climate impacts in multiple sectors and regions of the country, to improve the efficiency of water collection and distribution, reduce losses and waste of water, and to lessen the effects of diseases related to water.

The main objective of the program is **to increase the resilience and capacity to adapt to climate impacts and risks on the water resources of rural communities in the Province of San Cristóbal and contribute to the diversification of their livelihoods**. This objective will be achieved through improving the access to water supply and sanitation services, re-forestation activities aligned with a correct land use, and increasing institutional and community capacity and coordination for integrated management that supports other uses of water, especially for the diversification of the livelihoods of communities.

On the ground, the Program will adopt measures recommended in *Critical Points for the Vulnerability to Climate Variability and Climate Change in the Dominican Republic* and the *National Adaptation Plan for Climate Change in the Dominican Republic (PNACC-RD)*, aligned with DR main policies, such as the *National Development Strategy*. The beneficiaries are 24,300 people from 30 small rural communities of San Cristobal (Table 3). The Program will contribute to increase the resilience of these communities through immediate and long-term adaptation measures, and implementing specific projects. These products are organized according to the components of the Program and their expected outcome:

Component 1: Implementation of water resources management activities at the community level

Outcome 1: climate resilient water resources management has been implemented in 30 small rural communities of San Cristóbal.

Component 2: Creation and development of capacities to manage climate-related risks

Outcome 2: greater technical capacity of communities and institutions to assess impacts, vulnerability and adaptation needs in accordance with their respective competencies.

With the support of the Adaptation Fund (AF), the Program will work directly with 5 of the 6 strategic axis listed in the PNACC-DR:

1. Improving water security and food security¹¹
2. Promote the built environment and climate-proof infrastructure
3. Promoting Healthy and Resilient Communities¹²
4. Increasing the resilience of ecosystems, biodiversity and forests
5. Enabling competitiveness through environmental sustainability and climate resilience

The Program will follow existing interventions at the community, municipal, provincial, regional or national levels (as appropriate), seeking to expand successful initiatives, leveraging lessons learned, and creating more synergies of capacity building at all levels of government using a bottom-up approach. This will avoid possible gaps and / or duplication of interventions using the *top-down* approach.

Based on the experience of the participating institutions, the Program addresses key vulnerabilities of target areas regarding to water resources management (Berigüete, 2017) and will contribute to the immediate and long-term development and the resilience needs of communities, with a particular focus on vulnerable groups: women, single mothers, elderly, children, youth and people with disabilities.

¹¹ Consistent with the observations of Vulnerability and Adaptation of the Dominican Republic to Climate Change in Water Resources. Secretary of State for the Environment and Natural Resources (2000).

¹² Other implications are included in Vulnerability and Adaptation to Climate Change for Malaria and Dengue using Regional Scenarios and the MACVAH / AREEC Model. SEMARENA / UNDP (2007).

The Program will also seek to support the implementation of the National Climate Change Policy (PNCC), which provides strategic guidance and coordinates the issues of climate change in DR. In addition, the Program is aligned with the recommendations of the Nairobi Work Program of the UNFCCC (UNFCCC, 2010) and the relevant scientific evidence available on the impacts of climate change, vulnerability and adaptation on water resources, water supply, and food security (Niang et al., 2014; Porter et al., 2014).

Project / Programme Components and Financing:

Project/Program Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Community-level implementation of climate resilient water resource management activities.	1.1 Community water supply and management plans developed for 30 communities to incorporate climate change-related risks.	Climate resilient water resources management implemented in 30 small rural communities of San Cristóbal.	113,445.00
	1.2 Water supply increased for multiple uses and users in 30 communities during the period of short-ages under climate impacts (as droughts, heat stress, etc.).		6,417,630.00
	1.3 Measures for water conservation under climate impacts (as catchment/river bank, re-forestation schemes) implemented for 2,722 hectares.		1,668,925.00
TOTAL COMPONENT 1			8,200,000.00
2. Capacity building and capacity development in key institutions and communities to manage long-term climate change-related risks.	2.1 A set of manual and other materials on best practices for water management and resilient livelihood are developed, including a fully operational website.	Increased technical capacity of communities and institutions to assess impacts, vulnerability and adaptation needs according to their respective competencies.	44,000.00
	2.2 Provincial Climate Change Adaptation Monitoring Committee established in San Cristóbal.		32,000.00
	2.3 Learning platforms and systems for integrating climate change-related risks into community management of water resources and livelihoods activities institutionalized in 30 communities.		102,000.00
TOTAL COMPONENT 2			178,000.00
3. Project/Programme Execution cost			795,910.00
4. Total Project/Programme Cost			9,173,910.00
5. Project/Programme Cycle Management Fee charged by the Implementing Entity			779,782.35
Amount of Financing Requested			9,953,692.35

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Submission of the Full Project Proposal to AF	January 2019
Approval of the Project Proposal by AF	March 2019

Start of Project / Program implementation	June 2019
Interim evaluation	June 2021
Closure of the Project / Program	June 2023
Final evaluation	June 2023

PART II: PROJECT / PROGRAMME JUSTIFICATION

- A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

The Program components have been designed to provide comprehensive solutions and manage the expected risks and uncertainties of climate change in the target communities in the province of San Cristóbal. The components are based on a set of specific projects and a series of interrelated actions. The links between the components considered constitute: a) the creation and / or strengthening of community planning for the IWRM with a focus on drinking water and sanitation; and b) the increase in the communities' organization and capacity to carry out IWRM activities addressing climate impacts. In this process, some activities (which can achieve synergies with others already planned) will be carried out to strengthen the capacity of relevant key institutions in relation to IWRM and climate change (at individual and organizational level, processes, cooperation and learning). This will contribute to extend the results and impacts of the Program to other communities within SC, and to other provinces of DR.

Additionally, the benefits of IWRM with a community-based approach provide emerging opportunities to diversify rural livelihoods and to increase resilience to climate impacts. The information and knowledge generated during the Program implementation will be used to strengthen the capacities of communities, local organizations and institutions, sharing learned lessons with other communities and through better coordination among water users (domestic and agricultural) and the institutions.

All the activities to carry out the water resources management component (diagnosis, planning, water supply projects, sanitation systems, and reforestation programs) are based on the specific conditions of the communities identified. This identification was made based on pre-existing information from the institutions, visits to places with greater vulnerability, and as a result of local consultations. Professionals from the key institutions, participants in the consultation processes, and community actors interviewed during the field visits, have also proposed additional criteria to select the beneficiary communities and to maximize the interventions. They have also proposed possible candidates for local committees.

Once the available information, technical criteria, and the information obtained *in-situ* were correlated, to maximize the Program's impacts, following criteria were established to select the communities:

1. **Poverty:** Communities with 50% or more of households considered poor (according to household income and other deprivation measures);

2. Population: Priority has been given to communities with a population of at least 200 people, with a least 50% of women;
3. Reasonableness: The availability of natural capital (i.e., land for forests, groundwater potential for drilling, etc.) to implement the activities;
4. Commitment and Participation: Communities included expressed their commitment to participate actively in all aspects of the Program and co-finance some of the activities (i.e., labor, land for works, *in kind* contributions, creation of ASOCARES, etc.);
5. Sustainability and Replicability: Refers to the communities where the Program, in the opinion of the professionals and technicians of the institutions, has a better opportunity to sustain its long-term actions and/or to be replicable in other areas of SC, or also in other provinces of the country.
6. Inclusion: Determined by the presence of groups of women or women leaders in the community, and of young leaders as well, or their positive attitude to be formalized with the Program support.
7. Consistency: Based on verification that the proposed interventions and community culture are compatible. This was determined by selecting each intervention (on a case-by-case basis).

Additional criteria can be added during the inception workshop, to completely capture other problems that may increase the vulnerability of different groups in the community, such as housewives, land owners, women and youth, etc. This inception workshop will bring together key stakeholders, including organizations that particularly represent community associativity (i.e., producer groups, neighborhood boards, local NGOs, and vulnerable groups). This activity will ensure, together with the communities that the Program design has not omitted any important aspect in relation to the communities most vulnerable to the impacts of climate change, especially those that have never received prior support.

Using these criteria, during a workshop held in November 2017, institutions and communities were asked to indicate a short list of potential vulnerabilities that could be included in the Program (Annex 5). This draft list was complemented, taking advantage of the pre-existing plans and experiences of the professionals and technicians from key institutions (MoE and INAPA), communities and municipalities. In all cases, coincidences with the points of view expressed in the evaluations and by the community were addressed. For these purposes, a summary of the classification of prioritized communities during field research was prepared¹³. Later, each community within the prioritized short list was visited to carry out more field evaluations before finalizing the 30 communities that will pilot the program (March 2018).

This multiple consultative approach with the communities, with particular emphasis on obtaining the views of the most vulnerable groups and potential beneficiaries, and the identification of pilot communities for the implementation of the Program, has established an effective cost-benefit relationship of the AF funds. An alternative would have involved adopting a more prescriptive approach for the implementation of water management measures, which is not driven by management planning at the community level or by the site of execution. This approach implies the risk of implementing measures that are not appropriate for a particular local context and that omit the particular conditions of some vulnerable groups. Similarly, a "one size fits all" approach might have been proposed, but such an approach would have a high risk of leading to inappropriate solutions and offering piecemeal solutions, with a high probability of redundancy after the end of the program. A last alternative

¹³ A preliminary assessment of the communities potential beneficiaries of the Program is included in *Report 1: Pre-Identification of Beneficiary Communities*, prepared by Brightline Institute. Available at: <https://goo.gl/xxcLhi>.

approach would have been to focus on solutions at the household level. This would not generate great benefits and offer less value for money than a response at the community level, so it is discarded.

Component 1: Community-level implementation of climate resilient water resource management activities

Utilizing available information related to water resources planning, under Component 1 the Program will focus on improving community-level participation in the planning and implementation of climate resilient IWRM (SEMARENA, 2008). Currently, the participation of communities, and in particular of women and youth, in the planning and decision-making processes is very limited, resulting in a lack of transparency and inequity in the access and distribution of water resources. The program has chosen a participatory approach for the IWRM and development, distributing responsibilities among communities and using techniques that achieve short-term profitability and long-term sustainability. This is aligned with the Government's efforts to achieve a more decentralized approach to climate risk management.

IWRM options for the communities have been identified and evaluated, and they have been "tested" before their implementation. This has required monitoring and reviewing these options and their effectiveness¹⁴. After carrying out this exercises, and based on the relevant knowledge of the key institutions, has been possible to establish that the interventions of the Program will guarantee:

- Integrate the management and development of water resources at community level, and thus achieve the sustainability of water resources in quality and quantity, as well as their resilience;
- Strengthen and support the sustainability of existing community structures, as well as the operation and maintenance of current facilities, in order to safeguard the investments already made;
- Strengthen community organizations so that they assume a central role, supporting community management of water works carried out, and maintaining the integrity of aquatic systems.

Outcome 1: Climate resilient water resources management implemented in 30 small rural communities of San Cristóbal.

Specific concrete outputs from Component 1 are:

1.1 Community water supply and management plans developed for 30 communities to incorporate climate change-related risks

As water is a limited and vulnerable resource due to its multiple uses, developing a community water management plans is crucial. Under this result, the Program will work with 30 rural communities of SC to develop water management plans at community level. The establishment of a plan for water supply and sanitation is expected to empower local communities, provide an enabling environment to diversify their livelihoods, and allow them to take personal actions to reduce vulnerability to climate change. These community plans will be integrated into the basin and sub-basin plans developed and / or strengthened by the Program, in cooperation, collaboration or synergy, with government institutions.

This component will begin with a critical review of existing community structures/organizations with the capacity to develop and implement water supply management plans, and will be carried out for each

¹⁴ DR Government, through INAPA, has received funding from IDB and the Spanish Cooperation Fund for Water and Sanitation in Latin America and the Caribbean (FECASALC) to execute rural water supply and basic sanitation projects. Projects already executed within these initiatives have been taken as a model to "test" the eventual efficiency of the program interventions and to establish indicators of the expected impacts on their execution.

community to ensure that the optimal institutional agreement is adopted. For example, a community where INAPA supports the Community Associations of Rural Aqueducts (ASOCARES) or INDRHI is doing the same with the Irrigation Boards. Such structures are already in operation, and are likely to provide an effective institutional mechanism for water management in the community. In other communities, well-established local water and sanitation organizations could play this role. In order to strengthen the program's gender approach, women will represent 50% or more and youth represent 35% or more of the members of the committees leading the planning process. A participatory methodology will be used within the planning process, to achieve high levels of participation of particularly vulnerable groups.

The options for IWRM for communities have been identified and evaluated prior to its implementation.

This reduces the costs of monitoring and reviewing these options and their effectiveness. A special emphasis has been placed on ensuring that interventions integrate the management and development of water resources to environmental management at community level, and that these ensure the sustainability of water resources in quantity and quality, as well as their resilience to climate change. The processes of developing plans and achieving institutional agreements are based on the learning of successful initiatives that have been carried out in other communities of DR. These initiatives include those carried out by civil society and/or cooperation, as the implemented by the European Union (Sanitation of Marginal Urban Communities -SABAMAR), and Catholic Relief Services (Water+)¹⁵.

Using the resources provided by the AF, the Program will subsequently support the implementation of community water management plans through providing infrastructure and other physical interventions, along with training and technical support (Outputs 1.2, 1.3 and 2.3). As part of the follow-up to the interventions, the communities will be visited regularly by personnel from MoE, INAPA and IDDI, as well as experts and technicians recruited under the Program. These visits will help with the continuous monitoring of the implementation of the management plan and will continue to provide more impetus and motivation to the communities' efforts for the correct management of water and the watershed.

The community management plans will address the long-term sustainability of implemented measures under each plan and the establishment of a mechanism to ensure the long-term maintenance of the infrastructures. The exact nature of these mechanisms will be included in the agreements to be concluded with community organizations, in a transparent manner and on a project-by-project basis. In all cases, communities will be required to establish maintenance funds, either by charging for the use of water resources, or by using part of the funds generated by livelihood diversification activities supported by the Program. This approach has been successfully tested in other areas of the Dominican Republic¹⁶.

Within the plans developed in this Product, potential works will be identified that conserve the natural character and functioning of the water system (i.e., retention elements, dams/reservoirs, regulation and/or storage tanks, rain collection, etc.). Although the project will not generate this infrastructure, it will make this information available to communities to facilitate decision-making, avoid conflicts of use.

¹⁵ A key aspect of the success of these projects has been holding regular meetings with the community organizations that have achieved a better planning and implementation of water management. After these experiences, government institutions usually invite representatives of those communities or the beneficiaries to exchange and learning events.

¹⁶ Interesting experiences related to this approach are: (1) an IDDI program to support neighborhood foundations in providing solid waste collection and sanitation services in the slums of SD; and (2) a ProNatura collective savings initiative in *Loma La Humeadora*, where common resources are used to protect natural water sources. In both cases, the profits are reinvested in the needs of the community and are used to finance other activities, ensuring the long-term sustainability of these programs and giving communities the opportunity to invest in their self-development.

1.2 Water supply increased for multiple uses and users in 30 communities during the period of shortages under climate impacts (as droughts, heat stress, etc.).

Under the impacts of climate change, ensuring that communities have an adequate supply of drinking water throughout the year is a great challenge. To achieve this, the Program will carry out activities that mobilize participation, planning and community implementation of practices aimed at the use of drinking water in a rational and cost-effective manner, and the reduction of environmental pollution caused by wastewater. The applicable water quality norms, regulations and standards will be important to ensure that human activities do not compromise the water availability in the medium and long term.

The construction and rehabilitation of water collection facilities (i.e., intake, wells, etc.), storage and regulation tanks, and drinking water and wastewater treatment systems are also contemplated. Although it was not considered necessary during the identification and design of the individual projects, other traditional technologies and systems (such as works that collect rainwater) were identified, which could be adopted by the communities and the agricultural and livestock producers, taking advantage of the water availability endured by the Program (Output 1.3). These and other interventions will be identified with communities and other interested parties seeking to ensure water availability throughout the year, including drought periods, reducing, avoiding or eliminating conflicts of water use, and directly supporting potential activities of diversification of livelihoods, possible with the support of the Program.

The following table summarizes the characteristics of the planned facilities and infrastructure.

Table 4: Characteristics of Infrastructure Projects

System	Description of the Components
El Caobal	<ul style="list-style-type: none"> - Source: Rio El Duey - Job at Source: Splice from line of adduction Ø30 "L.J. (existing), Aqueduct Sto. Dgo. - Pipe: Ø8 "PVC (existing) - Pumping Station: Cisterna in Reinforced Concrete - Capacity: 144 m³ - Two (2) 30 HP vertical shaft pumps - Cyclonic mesh fence (existing) - Impulse Line: Ø8 "PVC (existing), L = 1,945.84 m <li style="padding-left: 20px;">Ø6 "PVC (existing), L = 1,455.60 m - Treatment: Simple Chlorination - Storage: Surface Regulator Tank in Reinforced Concrete - Capacity: 300 m³ - Matrix Line: Ø8 "PVC (SDR-26), L = 32.18 m (to be placed). - Distribution Network: Ø4 "PVC (existing), L = 1,473.12 m <li style="padding-left: 20px;">Ø6 "PVC (SDR-26), L = 2,165.20 m <li style="padding-left: 20px;">Ø4 "PVC (SDR-26), L = 4,856.00 m <li style="padding-left: 20px;">Ø3 "PVC (SDR-26), L = 8,360.00 m - Type of System: Gravity - Pumping - Total connections: 796 urban units, 417 existing units and 379 units to be installed
Loma Verde	<ul style="list-style-type: none"> - Source: Subterranean water (located in the sector of Los Jesús) - Well Fields: two (2) units: an existing one to be rehabilitated and a new one to be built. - Impulse Line: Ø6 "PVC (SDR-21), L = 956.08 m - Treatment: Simple Chlorination - Storage: Surface Regulator Tank in Reinforced Concrete - Capacity 150 m³ - Matrix Line: Ø6 "PVC (SDR-26), L = 30.60 m - Distribution Network: Ø4 "PVC (existing), L = 734.36 m <li style="padding-left: 20px;">Ø3 "PVC (existing), L = 736.00 m <li style="padding-left: 20px;">Ø6 "PVC (SDR-26), L = 392.63 m <li style="padding-left: 20px;">Ø4 "PVC (SDR-26), L = 873.78 m <li style="padding-left: 20px;">Ø3 "PVC (SDR-26), L = 2,579.19 m <li style="padding-left: 20px;">Ø2 "PVC (SDR-26), L = 51.30 m

	<ul style="list-style-type: none"> - Type of System: Pumping - Total connections: 300 rural units
Castaño	<ul style="list-style-type: none"> - Source: Groundwater - Job at Source: Well Fields with pumping station <ul style="list-style-type: none"> Niche for control panels Pumping equipment Mesh fence cyclonic - Impulse Line: Ø6 "PVC (SDR-21), L = 1,116.61m - Treatment: Simple Chlorination - Storage: Elevated Regulator Tank 12m in Reinforced Concrete - Capacity: 150m³ - Matrix Line: Ø6 "PVC (SDR-26), L = 60.00m - Distribution Network: Ø4 "PVC (SDR-26), L = 1,422.55 m <ul style="list-style-type: none"> Ø3 "PVC (SDR-26), L = 3,932.21 m - Type of System: Pumping - Total connections: 347 rural units
Los Algarrobos	<ul style="list-style-type: none"> - Source: Groundwater - Job at Source: Well Fields with pumping station <ul style="list-style-type: none"> Niche for control panels Pumping equipment Mesh fence cyclonic - Impulse Line: Ø4 "PVC (SDR-21), L = 1,628.00 m - Treatment: Simple Chlorination - Storage: Elevated Regulator Tank 10m in Reinforced Concrete - Capacity: 65 m³ - Matrix Line: Ø4 "PVC (SDR-26), L = 59.44 m - Distribution Network: Ø4 "PVC (SDR-26), L = 313.65 m <ul style="list-style-type: none"> Ø3 "PVC (SDR-26), L = 4,430.00 m Ø2 "PVC (SDR-26), L = 100.00 m - Type of System: Pumping - Total connections: 160 rural units
San Francisco	<ul style="list-style-type: none"> - Source: Noria San Francisco - Job at Source: Capture box in the channel (to rehabilitate) - Adduction line: Ø3 "PVC (SDR-21), L = 196.15 m <ul style="list-style-type: none"> Ø3 "Steel, L = 52.00 (for the crosses) - Treatment: Simple Chlorination - Storage: Surface Block of Concrete Blocks - Capacity: 45 m³ - Matrix Line: Ø3 "PVC (SDR-26), L = 140.53 m - Distribution Network: Ø3 "PVC (SDR-26), L = 1,402.91 m - System type: Gravity - Total connections: 40 rural units
Arroyo Higüero	<ul style="list-style-type: none"> - Source: Arroyo María - Job at Source: Capture box in the channel (to build) - Adduction line: Ø4 "PVC (SDR-21), L = 635.00 m <ul style="list-style-type: none"> Ø3 "Steel, L = 652.00 m Ø3 "PVC (SDR-21), L = 1,167.27 m - Treatment: Simple Chlorination. - Storage: Elevated Regulator Tank 10m in Reinforced Concrete - Capacity: 45 m³ - Matrix Line: Ø4 "PVC (SDR-26), L = 308.00 m. - Distribution Network: Ø3 "PVC (SDR-26), L = 820.00 m <ul style="list-style-type: none"> Ø2 "PVC (SDR-21), L = 60.00 m - System type: Gravity - Total connections: 85 rural units
El Fundo	<ul style="list-style-type: none"> - Source: Arroyo María - Job at Source: Capture box in the channel (to build) - Adduction line: Ø4 "PVC (SDR-21), L = 635.00 m <ul style="list-style-type: none"> Ø3 "Steel, L = 652.00 m Ø3 "PVC (SDR-21), L = 1,167.27 m

	<ul style="list-style-type: none"> - Treatment: Simple Chlorination. - Storage: Elevated Regulator Tank 10m in Reinforced Concrete - Capacity: 45 m³ - Matrix Line: Ø4 "PVC (SDR-26), - Distribution Network: Ø3 "PVC (SDR-26), L = 820.00 m Ø2 "PVC (SDR-21), L = 60.00 m - System type: Gravity - Total connections: 85 rural units
TOTAL	7 PROJECTS

Ø = diameter of the pipe; L = length of the pipe; PVC = Vinyl Chloride;
SDR = Standard Dimension Ratio (relationship between the nominal diameter of the pipe and its thickness)
Source: Elaborated by INAPA (with support from Moe and IDDI)

Annex 1 includes the conceptual design and distribution of each project across respective communities.

1.3 Measures for water conservation under climate impacts (as catchment/river bank, re-forestation schemes) implemented for 2,722 hectares.

In selected areas, deforestation in watersheds and riverbanks has reduced soil capacity to retain flood and runoff and has increased soil erosion. Under Output 1.3, the Program will carry out re-afforestation and conservation activities, aimed especially at the communities surrounding watercourses that feed the proposed systems (Annex 1), supporting the community water management plans (Output 1.1). All reforestation projects has been designed by professionals from MoE, and responds to a correct planning of land use, the needs of the proposed Projects, the expectations of the producers and land owners, the potential economic return for communities, and the prospect of making local livelihoods more resilient.

Table 5: Characteristics of Proposed Re-Afforestation Projects

Forestry Projects	Serving Correspondent Infrastructures Projects	Total Area (Hectares)	Comments
El Caobal	- El Caobal	1,532	Reforestation
Loma Verde	- Loma Verde	405	Conservation
Castaño – Los Algarrobos – San Francisco	- Castaño - Los Algarrobos - San Francisco	683	Conservation
Arroyo Higüero	- Arroyo Higüero	27	Agroforestry
El Fundo	- El Fundo	75	Fruit trees
Total area under Conservation		1,607	59%
Total area under Reforestation		1,115	41%
Total Area of Projects		2,722	

Source: Elaborated by MoE (with support from INAPA and IDDI)

Annex 1 includes the conceptual design and distribution of each project across respective communities.

For Re-afforestation programs, a set of potential varieties were prescribed. This list gives priorities to native/endemic varieties and commercial crop trees. Currently, several projects with characteristics similar to those proposed are being implemented in DR, such as programs to plant trees in river banks in places such as *Valle Nuevo* and *Sierra de Bahoruco*. Many others are being implemented by the private sector (i.e., *Manuel Arsenio Ureña, S. A.*, *CONCADOM* and *Banco Popular*) and civil society organizations (i.e., *Fundación Tropigas*, *Plan Sierra*, *Fundación Propagas*, *Sur Futuro*, etc.). All these projects have demonstrated the importance of having a local supply of seedlings, which becomes as an alternative livelihood for community entrepreneurs, producer associations, or the community in general.

The design of forestry projects includes training in water conservation and quality control measures. There are specific activities to support directly to the communities to implement these measures. The

installation of small facilities to collect rainwater or underground sources will be established¹⁷. The design and construction of new contour lines will reduce runoff and will be a conservation measure too.

Summary of Component 1: to improve water infrastructure, a preliminary assessment was carried out. Key local entities and community organizations empowered of their water management structures (community associations, neighborhood councils, SMEs, women’s groups, small farmers, social entrepreneurs, etc.) produced local data on climate vulnerability and main risks areas which are the program targeted interventions. In such areas, measures will be implemented to use new water sources and/or to care for and update existing ones, both at household level and at community level.

The interventions involve integrated projects for drinking water supply (collection, storage, treatment, distribution and disposal). Such systems include well fields, pumping stations, storage and regulation tanks, chlorination treatment, filter wells, and training to monitor water quality (Table 4). At community level, this component will identify potential rainwater collection and storage facilities to reduce potential conflicts of use, support agricultural infrastructure, and make rural livelihoods more resilient.

As the Program will invest significant resources to build and operate the facilities, and to enable the communities to make the best use of water resources in the long term, the repair and maintenance (R&M) strategy is crucial. This strategy will be included in the community water management plans, using learned lessons from existing projects and providing training. To achieve a sustainable IWRM that guarantees the supply, a set of measures for capture, conservation and control of water quality are required. This is essential to ensure sustainable and equitable exploitation, preserving biodiversity and the environment quality. The activities within this component include the establishment of appropriate baselines to determine the effectiveness of the current water conservation measures in each zone.

Under this component, the Program will reduce the pressure on water and forest resources in the intervention zones, avoiding deforestation and soil erosion. By implementing agroecological practices of added value and the monitoring by the community committees, the sustainability of considered actions is ensured. As forestry activities are centered in the middle and upper area of the identified micro-basins (Annex 5), the protection of existing water resources, the creation of alternative sources of income and coordination to achieve synergies with third parties developing agribusiness in these areas is ensured.

The Outcome 1 is related to the development and implementation of climate resilient water resources management for 30 small rural communities of SC. These communities will be included in the Program governance structures, in order to create other benefits and identify possible synergies (as food security, public health, livelihoods, etc.). A total budget of US \$ 8,200,000 has been designated for Component 1.

Component 2: Capacity building and capacity development in key institutions and communities to manage long-term climate change-related risks

DR still faces significant challenges in terms of the quantity and quality of data, information and relevant technical capacity to implement climate change adaptation at community level. Despite recent advances and growing number of scientific, technical and economic studies carried out, there are still significant gaps on climate impacts, socio-climatic vulnerability, actions effectiveness and adaptation planning (at provincial, municipal and community level). The Program proposes a technical and institutional capacity-building component for the planning of adaptation at community level with two perspectives: adaptive

¹⁷ A success story of this model is *Cultivating Good Water*, currently implemented by the Ministry of Energy and Mines in poor communities in the southwest of DR. This program works with communities to strengthen their values and build a culture of sustainability focused on water conservation and the water-energy-soil-climate nexus.

capacity building / long-term policy development and short-term climate risk management. This includes the participatory development of on-site adaptation actions for water management, the development of contingency plans, EWS, and climate risk management. Other approach is strengthening the interactions between relevant actors for adaptation: government, meteorological services, agriculture/livestock sector, research institutions, national and local government, media, and poorer local communities.

The component include a strategy to systematize the effective communication of Program outputs and outcomes, include more support from the key institutions on the ground and disseminate good practices and learned lessons from Component 1. In addition, a Provincial Climate Change Adaptation Monitoring Committee (PCCAMC) has been included. This Committee will be a collaborative structure to ensure the Program sustainability and long-term replicability, to address unforeseen interventions and other future projects focused on the community, strengthen the implementation of relevant policies, and mainstream climate change and gender to all the plans, activities and municipal and provincial projects.

Outcome 2: Increased technical capacity of communities and institutions to assess impacts, vulnerability and adaptation needs according to their respective competencies.

The specific concrete outputs from Component 2 are:

2.1 A set of manual and other materials on best practices for water management and resilient livelihood are developed, including a fully operational website.

The Program will dedicate resources to activities to document and share knowledge and experiences, and especially how to use the information and data of the Program to inform people, strengthen decision-making, and enhance its replication throughout the country. To facilitate this, a communication strategy will be developed and different forms of dissemination of information will be used, such as social networks, infographics, documents, articles, dissertations and presentations. The experience of previous development projects has shown that bringing together the participants of the community on a regular basis is an effective mechanism for the exchange of knowledge, so this model will be adopted.

The includes approaches that will be used to target different sectors of society, including special consideration to optimize communication for young people, the elderly, children and women, including those who cannot read or write. Some materials will be in English and Creole (for Haitian people) also.

The Program staff, professionals and technicians from key institutions, hired consultants and academics will be continuously involved with the community to provide technical assistance on water resources management, provision of potable water and sanitation services, re-forestation, adaptation to climate change and increase of domestic and community resilience. To this, proven approaches will be used such as training; regular visits, training/demonstrations, and visits to other successful projects. Training the communities give them the opportunity to gain practical experience (especially for younger people) will help to form a group of "community agents" capable of appreciate and implement climate change adaptation, both in aspects such as community water management and access to water resources. This class of community agents will be in a position to extend a similar support to other communities not included in the Program. The modality of involving people as community agents to produce / support activities under the Program is described in more detail in the Implementation Arrangements section¹⁸.

2.2 Provincial Climate Change Adaptation Monitoring Committee established in San Cristóbal.

¹⁸ There is significant experience in DR with this approach. For example, agricultural assistance programs, public health operations, and disaster risks management plans, train people from communities and, in general, these train others (effect of multipliers). This experience can be easily reproduced within the targeted and other communities.

As the Program proposes to contribute to other national and regional efforts for climate adaptation, disaster risk management and land planning, is necessary to monitor the compliance with policies and coordinate actions at regional level. To maximize this impact, the Program stipulates the establishment of a Provincial Climate Change Adaptation Monitoring Committee (PCCAMC). Initially, the establishment of this committee will be supported to meet the objectives of the Program, but with a broader vision of supporting the identification of other needs for adaptation to climate change and the implementation of solutions for the benefit of the most vulnerable people and sustainable development of the SC.

Because the PCCAMC will have implications beyond the project, one of the first activities of the Program will be a multi-stakeholder consultation process to develop and agree on the terms of reference of the Committee considering the existing coordination bodies at municipal and community level. The PCCAMC will serve, at first instance, to strengthen the existing organisms and coordinate their actions towards adapting to climate change at the provincial level, and to promote the inclusion of these structures at the highest levels of national policy and in decision-making (in terms of access to government resources and assistance for adaptation needs and other development challenges). This committee will be the first national model to integrate civil society, private sector, government agencies and communities, in coordinated efforts to adapt to climate change and increase resilience at provincial / regional level.

Also, PCCAMC will be used to integrate the activities, products and results of the Program into regional / national planning processes, to strengthen public policies on adaptation to climate change in benefit of most vulnerable populations of SC, and to facilitate access to the national budget for the replication of the Program in other communities and provinces. In addition, this Committee can provide long-term support to the activities of local communities through the development of future platforms to scale up the activities carried out within Components 1. The PCCAMC will meet at least 3 times per year.

Initially, the PCCAMC will be mandated to:

- Serve as a platform for multisectoral management and coordination of climate change and related programs, activities and projects in the province;
- Monitor the Program progress and link it to other adaptation initiatives within of SC, and ensure that the Program contributes to province development objectives;
- To become a platform for a long-term and sustained understanding process of adapting to climate change, looking for synergies and overcoming gaps;
- Promoting the necessary adjustments in existing interventions to ensure that its contribute to a broader adaptation and to the planning and execution of development; and
- Provide feedback and contributions to national and provincial policies, especially those related to neighboring provinces, climate finance and land use planning.

The final design, attributions and members of the PCCAMC will be defined after a specific process of consultation at inception phase. However, it is anticipated that existing entities such as the provincial governorate, local governments, MEPYD, COE, Ministry of Public Health, MoE, INDRHI, INAPA, Ministry of Public Works and Ministry of Education will be included. The representatives of the private sector grouped together and industrial organizations, services, banking and agriculture, and civil society (universities, NGOs, women's organizations, youth, and community organizations). The PESC (*Strategic Plan of San Cristóbal*, an existing Public-Private Partnership that acts as the coordinating body of the province, in order to promote its integral development) has expressed its interest to host the PCCAMC

as it does with other provincial committees (such as planning for land use, citizen security, industrial development, culture, etc.). The program will support PCCAMC at its inception and establishment.

The PCCAMC is necessary for the sustainability of the Program and its subsequent reproduction. The Program will implement activities to evaluate and strengthen the PCCAMC capacity and other key institutions, such as INAPA, MoE, INDRHI and MEPYD, in order to provide adequate support. There will also be an activity to design and implement training programs throughout the Province aimed at local governments and local institutions. The Program will provide technical assistance, substantial materials and opportunities for capacity building and development. To ensure the financing and operations of PCCAMC beyond the duration of the Program, it will be absorbed by MoE, as the main institution of the climate change policy. As MoE is the Designated National Authority (DNA) for important schemes such as GCF, CTCN, AF and GEF, it could help identify other medium/long-term financing opportunities, especially by replicating the Program strategies, products, results and approaches in other provinces. The Program must strengthen the capacities of MoE, to absorb the PCCAMC in an appropriate manner. This includes technical training, process development and establishing the interinstitutional agreements.

Also, MEPYD and the Governorate of SC will support the PCCAMC and co-finance its operations after the end of the Program (through its POA -Annual Operational Planning). MEPYD is the key institution related to national planning, responsible for the national budget and coordinates public investment in the country. MEPYD will help to incorporate the Program results into other public policies, or replicate it throughout the country. The Governorate of SC, as direct dependency of the Presidency, is an important actor to include local efforts within the presidential agenda. Recent experiences in other fields (i.e., 9-1-1, *Quisqueya Aprende Contigo*, etc.) are considerable success stories of governors' in their provinces¹⁹.

Although there are other coordination bodies at municipal and provincial levels, their actions generally do not reach higher levels of policy. For this reason, many community-oriented initiatives (regardless of their degree of success) are not replicated later nor are included within the national budget. This is due to these structures are focused on their respective mandates and do not influence public policies.

As PCCAMC will be formed by representatives of existing institutions, it will not act as an administrative structure but as a collaboration framework. This promotes efficient coordination between the Program and other initiatives in SC, the promotion of the inclusion of climate change adaptation in public policy and the national agenda, and will eventually support other provinces. Therefore, there is no risk of duplication or of funds or activities, since the Committee will focus on (a) identifying synergies with other adaptation and development programs; (b) coordinate institutions to work together in adapting to climate change and increase resilience; and (c) use the results and results of the Program to influence public policy and investment in relation to climate change. Therefore, the inclusion of the private sector and civil society in a structure of action and support for policy contributes to the long-term sustainability of the Program. **The members of the PCCAMC will not receive any form of payment or compensation from the Program, to guarantee the transparency, efficiency and proper use of the AF funds.**

Current bodies and institutions (and others that may be added later) will be strengthened by incorporating climate change adaptation and incorporating the perspectives of their institutions into a policy-oriented framework. Each member PCCAMC must work to increase both the commitment and

¹⁹ Typically, in order to avoid overlaps/gaps, the Ministries consult to each other before committing themselves to multisectoral initiatives. For this reason, only with an open dialogue can the most adequate scheme for housing, financing and integrating the PCCAMC be pointed out. In relation to the general budget of the Program, the amount allocated to PCCAMC is ~ 0.3% of the funds requested; as a result, the institutions will be able to absorb it easily.

the actions of their respective institutions towards adapting to climate change at the institutional and policy level, in accordance with their resources and capacities, which are increasingly strengthened²⁰.

2.3 Learning platforms and systems for integrating climate change-related risks into community management of water resources and livelihoods activities institutionalized in 30 communities.

It is vital that the lessons learned from the implementation of Component 1 are documented, recorded and widely disseminated, in particular how planning and implementation at the community level is linked to higher levels of planning and development, and on the management of water resources under climate change. The Program will use communication experts to produce lessons learned documents, which will be disseminated among stakeholders / beneficiaries, in neighboring provinces and other areas in DR and Haiti. The current capacities of communities to analyze and interpret climate data and use them in development and decision-making are insufficient in many places. Therefore, the program will carry out activities to develop institutional capacities and individual skills within the communities.

Different activities have been included to develop the capacity of rural communities to integrate climate change into their budget and development planning processes. As a key aspect of mass communication and awareness, skills will also be developed in the local media (i.e., newspapers, TV, social networks, etc.). It is recognized that different institutions, at different territorial scales, are responsible for the management of resources and problems related to development, which may be synergistic with the Program. This helps the dissemination of its products and results, and its later replicability. Also, there are training packages for the beneficiary communities, oriented to the construction and/or restoration of hydraulic works such as pipes, ditches, lines, intakes, etc. There will be training activities to channel water (i.e., using designs such as those used in road design) with culverts to protect community infrastructures against floods. Finally, training will be carried out in rehabilitation and maintenance of water collection, storage and treatment works, as well as in reforestation for the areas of interest.

Summary of Component 2: to guarantee the Program sustainability and visibility and its long-term results, a collaborative knowledge management strategy will be implemented under this component. The main dissemination products will be a handbook of best practices, concrete practices on the sustainable management of water, water and sanitation, and community-based adaptation to climate change. Key stakeholders, staff, communities and beneficiaries will interact more with the national media (newspapers, Internet, radio, etc.) so the public will be aware of climate risks and adaptation needs addressed by the Program. Other publications are planned related to evaluate the impact of the other component. The Program products will also be shared through international forums on climate change, including those carried out by agencies such as UNFCCC, FAO, WHO and UN Women.

An innovative aspect of this component is the establishment of a Provincial Climate Change Adaptation Monitoring Committee (PCCAMC) for the province of San Cristóbal. This Committee will be responsible for the long-term sustainability of the Program and will identify synergies with other initiatives, current or planned, related to climate change (i.e., EWS, disaster risk management, development assistance, climate finance, etc.), channel more public / private financing for adaptation, and encourage the use and adoption of small-scale data (produced by the Program and other initiatives) in the context of current or future public policies. The main strategic structures of San Cristóbal, have expressed their interest in

²⁰ There are successful experiences in DR regarding to establishment of interinstitutional collaboration frameworks to influence public policy. GIRE SOL (an inter-institutional group to promote the adequate and efficient management of solid waste), ADOPEM (a microcredit bank created by several entities that work with women living in extreme poverty), COE (a multi-institutional structure for disaster risk management) are good examples for the PCCAMC.

hosting the PCCAMC, and are motivated to incorporate climate change into the planning of the Province, and that, in this process, other synergies can be achieved in pursuit of provincial development.

The Outcome 2 is a greater technical capacity of the communities and institutions to assess the climate impacts, vulnerability and adaptation needs (according to their respective competencies and capacities) and ensure the Program long-term sustainability. This implies disseminating learned lessons and good practices on climate resilient water management and its links to the livelihoods of targeted areas and communities. This may contribute to the resilience and development in other places; and the utilization and integration of the new knowledge generated. The total budget for Component 2 is US \$ 178,000.

The Program interventions will reduce both the vulnerability of the rural communities of San Cristóbal and to increasing their resilience. As targeted communities do not have potable water nor sanitation services (and where these exist, they do not ensure availability in quantity and quality for a dignified life, due to abandonment, deterioration, inefficiency, conflicts over the use, or to be inoperative), and due to a significant percentage of that population is highly dependent on agriculture, their conditions and quality of life will be affected by the presence of climate shocks and other development challenges. The Following table shows how the Program interventions will reduce the vulnerability of the communities.

Table 6: Interventions and their Impacts on Vulnerability and Resilience

Project Description	Increase of Resiliency / Vulnerability Reduction
Water planning considering climate change	<ul style="list-style-type: none"> – Design, construction and operation of infrastructure and other physical interventions under a community approach. All the interventions are sized according to the conditions and potential of each community. – Address the long-term sustainability of the measures implemented in the community plan, such as sustainability and maintenance. – Leaders, women and youth can work together to solve other problems of their communities (such as conflicts related to the use of water). – Ensure that human activities do not have an adverse impact on the availability and use of water resources in the long term.
Facilities for water supply	<ul style="list-style-type: none"> – The use of infrastructure reduces the dependence on typical sources (such as rivers) that may be depleting. – Better water services helps avoids water-related diseases, which means an improvement in the public health. (i.e., dengue, amoeba, zyka, etc.). – Rainwater collection facilities can provide affordable drinking water without large labor or pumping costs. – Medium / long-term maintenance means permanent jobs for people in the community, improving their income.
Water conservation measures	<ul style="list-style-type: none"> – Re-afforestation in communities near watercourses ensures water for various uses and reduces soil erosion. – The use of coffee, cocoa, fruit trees, timber trees and other crops, implies additional income for the communities. – The protection of micro-basins can contribute to the conservation of biodiversity and / or local tourism (rivers, spas).

It is expected that the Program's resources and impacts will motivate the communities and key institutions to develop programs for long-term adaptation to climate change in other fields and/or sectors. This could include human settlements, sustainable energy, early warning systems, waste, etc.

- B.** Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

The proposed Program will provide a safe and reliable freshwater supply for beneficiary communities, and especially for its particularly vulnerable population. Climatic scenarios and scientific projection indicate that, in addition to the annual flows of the rivers reduction, there will be also a substantial increase in the water requirement per person, as the temperature increases due to global warming.

The National Development Strategy recognizes the access to water and sanitation, pollution control, development of water infrastructure and integrated management of transboundary river basins as key factors in sustainable development. In the specific case of drinking water and sanitation, more than 85% of the investments made between 1990 and 2016 were allocated to urban centers, while only 10% were invested in rural areas. The average annual investment in drinking water supply in DR is about 87.9 million dollars (average 1996-2012), a relatively high level of investment per capita compared to other developing countries. However, not all investments are allocated properly; for example, investments are biased towards water supply at expenses of improved sanitation and wastewater treatment (less than 2% of total investments). The last *National Report on Drinking Water and Basic Sanitation Services* indicates that a poor and untargeted allocation of resources has led to a smaller than expected increase, compared to the level of investment, coverage rates and rates of collection (MEPYD, 2014).

There are many deficiencies regarding the management and coordination efforts, so the regional water and sewerage utilities (CORAs) depend almost entirely on the transfers made from the government to finance their operations. These existing schemes lack transparency and do not report indicators on the level of efficiency in the use of such subsidies. On the other hand, the transfer process and performance of the ASOCARES are still far from ideal. While these organizations show a significant increase in cost recovery, especially when compared to low rates of the areas administered by the government, a high government subsidy still contributes to cover the operation and maintenance costs in their systems.

The Program will promote two types of adaptation interventions: (1) protection and improvement of the ecosystem; and (2) planning and execution of water infrastructure at the community level. These approaches will increase the financial, natural, physical and social capital of targeted communities. A conservative estimate shows that some 24,300 people are direct beneficiaries of the projects (meaning 12,200 women). Indirect beneficiaries are other communities that will receive technical assistance (i.e., *Mucha Agua* and *La Cole*, which have a combined population of 7,000 people). Trade and industry will also benefit, due to the increase in the demand for goods and services required by the investments.

The main indicators of vulnerability reduction will be: (a) to maintain the water coverage above 95%; (b) the service continuity index above 95%; and (c) the water potability index above 95%²¹. Regarding adaptation measures at community level for protection and improvement of the ecosystem, the impact of forestry interventions will be maximized by promoting the use of existing nurseries in each site. The Program will promote native species to rehabilitate the degraded lands or those that, being appropriate to land use, have commercial value for the communities and/or mean profitability for the producers.

Following table summarizes the Program anticipated economic, social and environmental benefits.

²¹ These goals correspond to those indicated in the Government Plan of Mr. Danilo Medina (2016 -2020).

Table 7: Social, Economic and Environmental Benefits of the Program

Benefits / Level	Program Scenario	Base Line Scenario
Social Benefits		
a. Households	<ul style="list-style-type: none"> – Improvement of the drinking water supply for 24,300 people (4,860 households) in the targeted areas. – Improvement of public health for avoiding water-related diseases in benefits of women and children. – Reduction of youth migration in search of new opportunities and quality of life. 	<ul style="list-style-type: none"> – Targeted population and communities will continue suffering increasing vulnerability and growing insecurity due to the lower water availability.
b. Communities	<ul style="list-style-type: none"> – Greater and better mutual trust between people and communities under conditions of climate change. – Reduction of conflicts between local actors who share common resources (such as water and land), especially farmers, foresters and pastoralists. – Better cohesion between community and producers through planning, coordination and joint work. – Increase solidarity through the creation /improvement of activities focused on women and youth. – Reduction of conflict between people within and/or outside the same basins. – Improvement of social cohesion and autonomy of water management and for adaptation to climate change. – Greater empowerment of the community through the use of a participatory approach, increase of knowledge, and through the EWS. 	<ul style="list-style-type: none"> – Conflicts of use: human, forest, crops, energy and livestock. – This will damage the social fabric in rural areas and exacerbate existing migration to urban areas, which will result in increased unemployment and more poverty. Women and young people will be particularly affected. – The conditions and quality of life of rural communities would decrease, with less productivity and increase of migration to urban areas, resulting in more pressure on urban economies.
c. Local Governments / National Government	<ul style="list-style-type: none"> – A systematized knowledge base is configured to allow the best practices to be identified and replicated. – Specifics community committees are supported and approved. – Key government institutions are strategically involved. Its role is identified and reinforced. 	<ul style="list-style-type: none"> – The status quo will continue, and more migration from rural to urban areas will occur, increasing poverty.
Economic Benefits		
a. Households	<ul style="list-style-type: none"> – Jobs opportunities created through the activities of the program. 	<ul style="list-style-type: none"> – High dependence on low-quality jobs, threatened by climate impacts/stress.
b. Communities	<ul style="list-style-type: none"> – Increase in revenues by providing 	<ul style="list-style-type: none"> – Community income will decline and will be more vulnerable, due to the

	<p>water supply and sanitation services.</p> <ul style="list-style-type: none"> – Stabilization of water supply and use the surplus for agriculture / livestock. – Increase in storage capacity and flow of watercourses. – Soil conservation will reduce the risk of flooding; crop failure; and loss of soil. – The diffusion of forest management techniques resistant to climatic shocks will improve the economic benefits of forest producers and land owners and, together with extension services, will result in improved management of all targeted areas, with other associated economic and environmental benefits. 	<p>dependence on agriculture and the increase in spending on fresh water</p> <ul style="list-style-type: none"> – Damages to the infrastructure related to events such as storms, excessive soil moisture, drought and floods. – Current systems do not work as expected due to climate change. Less water security and higher costs for medicines and treatment of diseases.
c. Local Governments / National Government	<ul style="list-style-type: none"> – Increase income through local taxes derived from the increase in program activities. Improvement of GDP after increase rural economy and its welfare. – Improvement of decentralization and distribution of economic wealth 	<ul style="list-style-type: none"> – More subsidies and other direct interventions to supply communities with water supply and basic sanitation – More expenses for the government and families to attend to diseases related to water and sanitation.
Environmental Benefits		
a. Households	<ul style="list-style-type: none"> – More and better conservation of resources (water, soil and forest) that provide ecosystem services (i.e., water purification, less degraded lands, etc.). – Improvement in water availability. – Reversing the degradation of natural resources (i.e., forest, biodiversity, etc.) will improve the livelihoods of people. – Greater protection against soil degradation and desertification. – A better conservation of the natural resources (i.e., water) will result in a better adaptation and more resilience. – A better understanding of the interaction between climate, the environment and human factors that affect the sustainable use of resources. – Greater carbon sequestration through the integration of tree planting within water and soil conservation works. – Less environmental degradation by reducing the high dependence of natural resources for obtaining wood and firewood, through the training and awareness offered by the Program. 	<ul style="list-style-type: none"> – Climate variability, reduced rainfall and increasing the incidence and intensity of droughts will exacerbate existing problems in ecosystems that are already affected by degradation, erosion and reduction of moisture. – Availability of ecosystem services will be reduced and further complicates the availability of potable water. – There will be a constant and growing emigration for food and water for animals, and associated propagation of forest fires, which will have a negative impact on natural resources and on the normal functioning of ecosystems and communities. – Erosion and sedimentation of water collection and conduction works. – Potential conflicts between different users of water resources, such as between households and farmers.

	<ul style="list-style-type: none"> – Improvement of habitats with the rehabilitation of the riparian zones. – Support to local nurseries, planting, forest and community involvement will improve the ecosystem services. 	
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As indicated above, the Program will provide economic, environmental and social benefits to the communities affected, in particular to the most exposed households, which will receive more and better water supplies. From an economic point of view, the interventions aim to improve and stabilize the income of households through the reduction of costs for drinking water, and with the reduction of water related diseases and by vectors. Through forestry interventions, the diversification of income flows of producers will be promoted, with secondary economic benefits in the short and medium term (such as strengthening the economy of communities, municipalities and the province). Socially, the main will be a contribution to stop the displacement of people reducing their vulnerability and susceptibility to extreme events, avoiding water scarcity, reducing diseases, building capacities and improving their lives.

With respect to environmental aspects, the Program will reduce pressure on local forest resources, deforestation and soil erosion, through the promotion and implementation of agro-ecological practices and under the supervision of community committees. An additional benefit will be more carbon sinks.

All activities under Component 1 will be developed jointly with communities and their representatives to create a shared understanding on climate adaptation and IWRM, including assessing the concerns and needs of most vulnerable communities. The program will carry out activities using common diagnostic and planning techniques for the development of community-based interventions. Key official agencies are identified as executing entities (MoE and INAPA). To maximize the local function, local NGOs/ and community groups will be selected as partners for the execution of local tasks, due to their experience.

The principles to be considered in all local interventions are, among others, the following:

1. Encouragement of the participants to take responsibility;
2. Respect for the diversity of the local population;
3. Promote full participation from the beginning of the Program, during and post implementation;
4. Reconciliation of different interests, if any; and
5. Involve multidisciplinary approaches and teams (in the Program staff).

Frequently, children, women and elderly are the most vulnerable groups in the poorest communities. Since women play a key role in the health, education and income of the family, the Program is very interested in incorporating women in most activities and community management structures. However, despite their important role in the home and food security, the participation of women in economic activities may still be limited/ repressed due to conflicts with traditional or religious beliefs. The Program is aware of these aspects and will openly promote the empowerment of women in all stages; even:

1. Discuss with community leaders the need to integrate women into projects;
2. Grants for activities and specific work packages for women's associations;
3. Strengthen your role in the face of climate change within key community organizations; and
4. Establish a recognition and / or certificate for outstanding women.

At national level, the Program will also seek the inclusion of qualified female technical staff. As such, this makes an important contribution to the women empowerment in DR, and is not limited to the targeted areas. Young leaders can participate in a similar way and through access to scholarships and internships.

To mitigate negative impacts, specific indicators on key socioeconomic and environmental variables will be integrated into the results framework, thus ensuring compliance with Environmental and Social Policy of the Adaptation Fund (ESP). These indicators will be monitored and evaluated regularly, and will be documented and communicated to avoid being violated. The field teams will interact regularly with the relevant people and organizations to achieve more efficiency and resolve any possible conflict.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme.

As vulnerability to climate change is multifaceted, any additionality to a socioeconomic reference scenario is difficult to prove. In addition, there are limited options for key institutions and communities in the DR, in terms of alternative actions to develop climate resilience in the management of their water resources. Therefore, the Program proposes a combination of promoting greater and better water supply within integrated climate risk management, taking into account the development needs of the communities involved. Based on consultations with government professionals and technicians, national communications and the academic literature consulted, an ecosystem-based approach, which uses efficient IWRM practices, is considered a cost-effective way to reduce vulnerability (compared to construction of heavier and / or more complex physical infrastructures) in the areas targeted.

The *Second National Communication* and the *Study on the Evaluation of Investment Flows and Financial Flows for Adaptation in the Tourism Sector of the Dominican Republic*, have indicated that, based on research and consultation with key actors, cost-effective adaptation The climate change of rural communities should include: (a) the promotion of activities such as forest restoration and conservation; (b) zoning of areas and proper land use; (c) greater use of crops that are more resilient to the climate (with a focus on endemic and / or traditional varieties, or alternatives of greater economic value); (d) sustainable actions with friendly approaches to the environment; and (e) sustainable land management and efficient use of water (Ministry of Environment and Natural Resources, 2009, United Nations Development Program, 2011). The program has been designed on the basis of these elements, being careful that the design and implementation correspond to national priorities and strategies.

Strengthening the resilience of targeted communities to the impacts of climate change is identified as a priority for urgent and immediate adaptation, with the greatest immediate benefit of achieving SDG 6 (*Ensure availability and sustainable management of water and sanitation for all*), and SDG 15 (*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*). In absence of the Program, target communities can achieve a certain degree of adaptation, but not at the level of Post-2015 agenda. Program interventions will develop adaptive capacity and strengthen the resilience of water resources and through community management, using "soft" adaptation measures and locally appropriate practices (which are more cost-effective than "hard" engineering measures, assuming that can equally withstand the impacts of future climate change even under the worst scenarios).

The Program main principle (condition that must be changed through its implementation) is to develop experiences and practical capacities of adaptation to climate change to ensure that the water resources of SC, especially in their rural communities and its economic activities, may be more resistant to the increase in the frequency and intensity of droughts and other climatic risks for the next 25-50 years.

In opinion of the community and institutional actors consulted during the elaboration of this proposal, the Program is considered as a key catalytic initiative to channel the course of climate finance. All national and subnational vulnerability analyzes conducted by several sources, including official reports and independent research, agree that vulnerability, especially to the effects of drought, has geographic patterns and socio-economic associations, with SC being one of the places in which this reality is more evident. The decrease in annual rainfall and increasingly irregular rainfall patterns, due to climate change, are negatively affecting water bodies throughout the province, compromising the availability of resources for the people, agriculture/livestock, electricity production, and recreation.

Addressing the specific vulnerability to the effects of climate change, both in the supply of drinking water and access to water resources, and bring *ad hoc* responses to specific problems of each site, will have a dramatic impact on the quality of life of rural communities intervened. As the occurrence of droughts, floods and forest fires have devastating effects on the strategies and survival actions of the poorest people, and given the impacts of climate change it is expected that the frequency and intensity of these events will increase, the 30 rural communities Interventions constitute only a small sample of the scenario that must be changed throughout DR, for which the Program may be the best model.

In line with the above, the budget to be funded by the AF for the proposed program will support:

1. The acquisition of the best technical experience available to help implement, with the participation of the main actors of water resources management in the country, adaptation measures and support for the development of the capacities that will guide the future management of water resources and climate adaptation at the community level in the Dominican Republic. In this context, with the participation of government personnel in the Program, it will be an "in kind" contribution.
2. The design and construction of infrastructure (basins works, well fields, storage tanks, treatment facilities, etc.) to improve the supply and access to water in the context of climate change for the 30 communities (24,300 people), and the appropriate knowledge transfer to its beneficiaries.
3. The development of the enabling environment to address the climatic risks of water resources and the dependent community and domestic activities, through: (a) the integration of climate change in water resources management plans; (b) the establishment of a Provincial Committee to Monitor Adaptation; and (c) community water management and supply plans considering climate risks.
4. The dissemination and management of lessons learned will help society (especially the people living under vulnerable conditions) to have a better understanding of the problems of climate change and guidance on which practical solutions will be adapted according to the specific areas.

The three-pillar approach of the Program (implementation of measures to improve water supply, development of enabling environment, and improvement of watershed management through re-forestation) is essential for full replication in future adaptation measures in any other vulnerable place in the DR. Failure to address any of these pillars would reduce the effectiveness of the entire program. **With 97.8% of technical solutions and 2.2% for enabling environment, the program is the most cost-effective and balanced way to realign and initiate the process of adaptation to climate change at the level of rural communities of any province of the Dominican Republic. The success factor of the initiative is to prioritize physical interventions, which reduce the vulnerability of the communities "on the ground" and which creates conditions to replicate it in other communities and other provinces.**

For the management of climate resilient water resources: with an investment of US\$8,200,000, the Program will implement 7 potable water supply and basic sanitation systems (including final design,

construction of intake, water collection systems, water storage tanks, pipes and connections, pumping treatment systems, etc.). These projects will benefit 24,300 people (50% of whom are estimated to be women) from 30 rural communities. Under the same component, measures for water conservation under climate impacts (i.e., re-forestation plans, etc.) will be implemented for some 2,722 hectares.

The investments proposed by the Program will allow to 24,300 beneficiaries to meet their domestic water needs (estimated by WHO as 50 to 100 lt/day/person) and provide household sanitation systems to 2,385 households. This implies an average cost of drinking water and sanitation supply of \$301/person. This means that these investments are more profitable than the alternatives considered to satisfy the same demand for 20 years²². At these values, public health costs must be subtracted from attending to diseases related to water and sanitation (\$ 292/person according to the Ministry of Public Health in 2017) and current costs of purchasing bottled water (estimated at \$ 49/person by WHO/PHO).

Similarly, with an average cost of \$ 613/ha, the Program will ensure access to water resources required by targeted communities and its resilience in the medium and long-term, through the re-forestation of 1,607 hectares and the conservation of 1,115. At these costs, the additional income of the farmers can be subtracted from the implementation of agro-forestry practices and the adoption of varieties with greater commercial value, its effects on the increase in food production, the improvement in the use of resources efficiency, and income for other services. Reasonable alternatives are the transfer of the same volume of water from other areas (i.e., Valdesia Dam) through medium-scale conduction systems. These systems have a cost range of between \$ 9,200 and \$ 17,620/ha. Even including the costs of the facilities, firefighter systems and other elements, it is clear that the results of the Program are more profitable.

The cost-effectiveness analysis of adopted options will be improved as more data becomes available, and before any of the projects are constructed.²³ The water supply and sanitation options are designed to operate 20 to 50 years or more. Therefore, the lowest cost per m³ of water is not always the most cost-effective, especially if the quality of the construction is compromised to save money (cheap drilling or poor construction can lead to premature failures or contamination of sources). The cost-effectiveness relationship takes into account the distance home-source, the protection of the source against pollution, the pollution itself, and the cost of M&R. All these costs have been included after the evaluation of the options and the environment in which they will be built and operated. However, the effectiveness of the costs of the options will be guaranteed during the implementation of the Program, ensuring that the construction of the freshwater augmentation infrastructure takes into account the expectations and profitability principles to allow an economical and sustainable access to drinking water²⁴.

For the development of the enabling environment (establishment of PCCAMC and for the dissemination and management of information), there are no reasonable alternatives to the approaches suggested by the Program, since it is designed to address all existing governmental instruments that can contribute to the integration of the stakeholders involved in the management of water resources in SC. The measures will reduce the physical exposure of watersheds to climatic risks, and will help to avoid additional costs

²² The alternatives considered are those included in the latest version of *Source Book of Alternative Technologies for Freshwater Augmentation in Latin America and the Caribbean*. A compilation of experiences and good practices in the use of several water delivery, harvesting, quality, treatment and conservation technologies (OAS-UNPEP, 2016).

²³ Profitable technologies to improve access and water management, in the context of climate change, mean an optimal value of the money invested in the long term. Therefore, this aspect will be monitored in all interventions.

²⁴ For example, Presidential Decree 42-05 includes guidelines and codes of practice, which provide a basis to realize an economic and sustainable access to fresh water. In addition, the implementation of the Program will also benefit from any study or evaluation available related to technologies and techniques that improve water sources and its use.

derived from an adaptive misuse of the land and the planning of the development, use of practices such as destroying the vegetation of the basins, the unsustainable use of water for agriculture and livestock, which currently characterizes the basins on target areas. This is critical to safeguard the sustainability of the community's water resources and (in general) the economic development activities of the Province in the face of climate change. Investing 2.2% of Program resources (ie \$ 44,000 + \$ 32,000 + \$ 102,000 = \$ 178,000) is a profitable investment considering the economic role of this region. In fact, San Cristóbal is among the most productive provinces in the country (for example, only industrial activity in *Bajos de Haina*, one of the most industrialized municipalities of the province, contributed 32% of GDP in 2014).

The cost-effectiveness of the Program will be reflected in the field and at the operational level, through:

- Program resources will be aligned with the financing and delivery of program products that have competitive procurement components, to guarantee the best value for money. In this sense, the Program will apply the best practices identified by other current climate change adaptation projects.
- The Program will use existing governmental structures and processes for its implementation. This means take advantage of existing institutional and governmental structures, in-kind support and contributions from agencies at national, provincial and local levels (office space, vehicles, staff, etc.).
- Through the existing networks, the results framework of the Program will use studies, analysis and references from key agencies, and thus take advantage of proven delivery mechanisms, such as the *UNDP Small Grants Program*. This will further expand the scope and replicability of the results.
- Most of the program's funds will be allocated to activities at the community and at field level, therefore, this increases opportunities for the local acquisition of goods and services.

Table 8: Cost-Effectiveness of the Proposed Measures

Objective	Budget (UD Millions)	Beneficiaries	Cost / Benefit	Alternatives
Drinking water and sanitation	8.2	24,300 people (50% are women)	This investment will allow beneficiaries to meet their domestic needs for drinking water (50-100 l / day / person) and dispose of wastewater properly. The average cost of these systems is \$ 301 / person, minus the avoided health costs per year (\$ 292 / person) and the annual cost of purchasing bottled water (\$ 49 / person)	The most reasonable alternative to the proposed approach is to do nothing and / or continue with the status quo. In this case, the 24,300 beneficiaries and their communities will see their quality of life deteriorate, being more vulnerable, and needing more assistance from the government and subsidized.

Re-afforestation and conservation		Producers and landowners (2,722 ha)	With an average cost of \$ 613 / ha, access to water resources required by community projects and climatic resilience are assured in the medium and long term. This includes re-afforestation activities on 1,607 ha and conservation practices on 1,115 ha. To these costs, the additional income of the producers can be subtracted due to the implementation of agro-forestry practices and the adoption of varieties of greater commercial value.	Reasonable alternatives are the transfer of water from other areas (i.e., Valdesia Dam) through medium-scale impulse lines. The costs of these systems range from \$ 9,200 to \$ 17,620 / ha. It is clear that the proposed options are more profitable.
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The proposed interventions are profitable, since large investments in infrastructure are not considered: the selected adaptation measures consist mainly of a series of activities aimed at restoring natural and social capital and achieving resilience in water systems as a means to reduce the vulnerability of rural communities. Restoring the natural capital of ecosystems has multiple benefits for rural communities, and it is anticipated that the benefits will greatly outweigh the costs, in addition to foreseen synergies.

The underlying needs, real demand of each activity, the level of familiarity with, and the acceptability of the activities (including addressing the different responses by gender) and the eventual environmental benefits have also been considered. In the early stages of the proposed program design, the alternatives discussed with the government authorities were: (1) to establish a small facility of small subsidies for specific adaptation measures; and (2) a project based on ecosystem services that included –inter alia- the use of seeds that are more resistant to climatic variability and climate change, and water conservation in micro basins. While these initiatives are relevant, in terms of their expected activities and outcomes, discussions with key institutions led to the conclusion that such initiatives should be better developed in separate technical/financial assistance projects for which funds will be sought later.

- D.** Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

Law 5852 (approved in 1962 and amended by Laws 281, 238 and 431) establishes the main aspects of the legal framework for the management of water resources, which include: (a) water as a public good (which means that the ownership of the water belongs to the owners of the land or is public); (b) water use concession system; (c) prioritization of municipal use; (d) prohibition of water pollution; and (e) the participation of users in the management of water resources. The *Water Bill* links water rights with land ownership or with public service providers and establishes a limited right over private property of water,

only for water that originates in the owner's land, such as springs and rain water²⁵. In addition, Law 6-65 created the National Institute of Water Resources (INDRHI) assigning functions at three levels: (1) policy development and planning at the normative level; (2) administration of water rights, application of regulations and hydrological services at the organizational level; and (3) water use for irrigation systems at the operational level. Since the INDRHI is a dependency of the Ministry of Environment and Natural Resources, the activities related to the Program are in accordance with current and applicable policies.

The Program is aligned with the *National Development Strategy*, which establishes that DR "manages with equity and effectiveness the risks and protection of the environment and natural resources and promotes an adequate adaptation to climate change" as one of its four pillars. Among the 29 actions mentioned in this pillar, freshwater receives particular attention (END, 2012). Likewise, the Program is consistent, both with the National Environmental Policy and with the National Policy on Climate Change. All these policies point to the implementation of several strategies such as the restoration of protective ecosystems, the custody and management of water resources and the achievement of universal access to water (Dominican Republic, 2010). Other relevant policies considered for the design of the program:

- Law 64-00 - General Law on Environment and Natural Resources;
- Law 202-04 - Sectoral Law on Protected Areas (important criteria for selecting areas);
- National Sanitation Strategy of the Dominican Republic.

The National Sanitation Strategy includes five main pillars: (1) *Coverage and Quality Services*; (2) *Management, Financing and Planning*; (3) *Legal and Institutional Framework*; (4) *Environmental Sustainability*; and (5) *Participation, Consciousness and Citizen Practices*. With respect to climate policy, the Program responds specifically to several priority sectors, being the most important the rural development and water resources. Also, the Program includes main recommendations of PNACC-RD:

- The vulnerability of poor communities and vulnerable groups will be a priority for the country, due to the threats of climate change on human settlements and infrastructure.
- Expected increases in temperature and the reduction of rainy seasons are affecting water for human consumption, the flows of water bodies are being reduced throughout the country;
- Institutional and community capacities will be strengthened to provide adequate responses to the problems of climate change and to increase resilience.
- It is essential to promote partnerships that include the private sector and civil society to address climate change in areas with limited or low incomes; and
- Addressing climate change and its impacts needs to mobilize additional financial resources and capital to manage risks and promote technologies and innovation.

The *Third National Communication* defines priority adaptation measures and policies as those that "support vulnerable communities and prioritize water resources and rural development". As the Program

²⁵ Since 2000, the Congress has discussed a bill that aims to regulate the use of water resources. This legislation is not expected to be approved in the short/medium-term. However, the Program will monitor it and its impacts, if implemented. A positive coordination and communication with the Ministry of Environment -which coordinates the environmental policy and between the different levels of government- can facilitate the inclusion of the possible results and results of the Program in the law when it is finally approved. This approach could be equally useful for regulations implementing such law, or other related legislation. The bill is available at: <https://goo.gl/Fn55eE>.

includes activities in all these sectors, it contributes to the country's water security. With prospects of addressing threats as deforestation and water access, it will contribute to placing the DR on a firmer path towards water security with better water use and better public health in vulnerable communities.

E. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

One key aspects of the Program is the development of community management approaches and management techniques on the demand side, which do not have significant environmental impacts normally associated with the development of large infrastructures. It is expected that infrastructure investment will be made as part of government and community programs to improve water supply and storage capacity. Large-scale water extraction activities are not expected, beyond to provide sustainable irrigation points for livestock, as these be applicable and viable. Although the activities of the Program do not require licenses from MoE, a comprehensive Environmental Impact Assessment was carried out during the proposal, in order to anticipate and avoid potential socioeconomic no environmental risks.

Table 9: National Standards Applicable to the Program

Standard	Applicability	Comment
Law 64-00: General Law on the environment and natural resources	<ul style="list-style-type: none"> - Environment and social norms - Issues environmental authorizations - Planning and monitoring of water resources, forests and biodiversity 	Main public policy of sustainability, protection of the environment and social participation.
Law 176-97 on the National District and municipalities	<ul style="list-style-type: none"> - Issue municipal authorizations - Manage the participatory budget 	Main policy for local governments as the first level of land use planning.
Environmental standards and complementary regulation	<ul style="list-style-type: none"> - Environmental standards on water quality and discharges [NA-AG-001-03] - Standard for the environmental management of non-hazardous solid waste [NA-RS-001-03] - Environmental standard on the quality of groundwater and discharges to the subsoil - Environmental standard for the forestry industry that processes woods - Forest technical standards - Environmental standard on air quality and emission control [SGAN03] 	Included in the Evaluation of the Environmental Impact Study of the Program. It includes a comprehensive environmental management system based on relevant standards and best practices.
Other guidelines	<ul style="list-style-type: none"> - Social impact assessment procedure - Environmental impact assessment procedure 	
Presidential Decree 42-05	<ul style="list-style-type: none"> - Include guidelines and codes of practice, which provide a basis for economic and sustainable access to drinking water. 	It includes technical standards to design, operate and build infrastructure for fresh water and sanitation services.

The consultations with experts and representatives of the community did not raise any concerns regarding possible environmental and social impacts of the Program that require changes in the design of the project. However, although it is not required (nor is it necessary), it carried out an Environmental Impact Assessment (EIA) for the proposed interventions which includes specific devices for each type of intervention²⁶. The identified impacts will be managed through the Environmental and Social Management System Plan (EMSP), which includes the necessary mitigation measures in consultation with the communities and in accordance with the provisions of the Ministry of Environment Resources. The implementation will be monitored in a participatory manner as part of the Program's M&E system.

Specific sites where the intake, well fields, and pumping stations will be located were defined following the specified technical standards by personal from INAPA which confirm that the places chosen are the most appropriate. From the perspective of water quality, the interventions of the Program comply with the national water quality standards described in the section that regulates the extraction and use of the resource. Likewise, the minimum water quality standards for direct consumption have been established by INAPA and the Ministry of Public Health, and which have been compared with the FAO and WHO forecasts (which establish pollution prevention measures to be observed from the design of water supply works). In addition, the Program fully complies with the policies that regulate the general management of water, specifically the rules for building and operating works by the community.

As it was verified during the elaboration of the proposal, the Program evaluation included quality standards based on the applicable norms and standards applicable to different sectors. The necessary safeguards were followed and incorporated into the design of the Program. In addition, the proposed interventions fulfill with all current national technical standards, particularly those related to water and sanitation services, civil and mechanical infrastructure, construction and operation, environmental and social standards, public health and occupational safety²⁷. The program identified gaps/overlaps in technologies and techniques appropriate (i.e., potable water, sanitation, re-forestation, etc.), that are aligned with adaptation needs or that can be synergic (where this is possible) and feasible, and possible solutions or opportunities as sources of technical assistance, transfer modalities, and other supports.

As the Program's interventions will be coordinated with key institutions (such as MoE and INAPA) and it will be supported by universities and local NGOs, it will be easy to monitor the alignment with technical standards in aspects as water management, water supply, sanitation services, community participation, associativity and empowerment, and respect for people's humans and labor rights. The entry into force of unforeseen standards (up to date) will be part of the quality management of the Program.

With the participation of the key institutions, the Program could establish cooperation agreements with other relevant institutional partners in areas as water resource management, small infrastructure, environment, livestock and agriculture, which can support this process. Such associations could include protocols that create synergies with the activities of the Program, such as:

1. The National Institute of Drinking Water and Sewerage (INAPA), which can provide training in operation and management of water infrastructure, and technical advice.

²⁶ To enforce the EIA, a set of environmental and social assessment tools specific to the project were developed, based on the *UNDP Project-wide Environmental and Social Assessment Procedure*, which is part of UNDP Program Policy and Operations Procedure, to implement a redundant system to detect potential impacts and mechanisms to address them. These tools are available at: <https://goo.gl/g2LwWv>.

²⁷ *Report 2: Definition of Adaptation Interventions*, prepared by Brightline Institute, includes a compilation of the technical standards applicable to water management, construction and operation of infrastructures, re-forestation schemes, and other aspects such as security and protection, environmental quality and social development. This report feeds with documented evidence the Program EMSP. Available at: <https://goo.gl/xxcLhi>.

2. The National Institute of Water Resources (INDHRI), including planning and management of water resources, as well as the supervision of the management of the basins by the communities;
3. The National Office of Meteorology (ONAMET) that could train the local population on the conformation of the climate and the qualification and the equipment of the meteorological stations;
4. The Ministry of Agriculture, in particular for training activities and dissemination of improved agricultural techniques, and studies of shallow water irrigation systems;
5. The Ministry of Public Health, in particular for training activities and dissemination of community health techniques, as well as the prevention of diseases related to hygiene;
6. The state owned Agricultural Bank (Banco Agrícola), ADEMI and ADOPEM can provide financial solutions for producers and women, and training in finance and microcredit; and
7. The Dominican Institute for Agricultural and Forestry Research (IDIAF), to improve seed development activities and the supply of improved seeds.

For the engineering (ie, planning, design, financing and construction) of the facilities, specific INAPA criteria have been used for the construction of rural aqueducts throughout the country, and have been correlated with some existing benchmarks for sizing (i.e., wells fields, intake, storage tanks, treatment plants, etc.). In relation to the quality of the infrastructure, the existing construction standards provided by the Ministry of Public Works (MOPC) have been followed. This approach has been complemented with feasibility studies (social, economic, demand, safety, quality, capacity, etc.) of the program. Once the resources and assistance provided by the AF have been received, other aspects will be followed, such as drawing up plans, administrative authorization processes, formalizing the management committees, informing the public, education, and periodic monitoring, including interested parties.

The intake will be built close to the communities, but in a way that avoids contamination. In addition, it has been established that the community retains the land ownership around water points (such as intake, reservoirs, tanks and treatment plants), and that any activity or construction-within a specific radius around the facilities that could threaten the water quality (as latrines, laundry, etc.) is prohibited.

In December 2016, INAPA issued a letter of approval to the Program, stating *“as the national authority on drinking water and sewerage in the Dominican Republic, INAPA confirms that the proposed Program is in accordance with local regulations for water supply and sanitation and applicable regulations and that the program will be fully supported”* (a copy is attached). This support has been evidenced with its participation in the selection of target communities, its presence in the field visits, designing the infrastructure works, verifying the applicable technical standards, and monitoring the proposal progress.

As part of the *Environmental Impact Study*²⁸, the legal and regulatory compliance of the Program was addressed in detail, which allowed identifying and analyzing possible management options in case of conflicts. This analysis showed that the Program complies with all national environmental and social regulations and with the Environmental and Social Safeguards of international entities such as FAO, GEF, PAHO/WHO, and especially the AF. Program meets the norms established by MoE in relation to the fight against drought and desertification, rehabilitation of ecosystems, and biodiversity protection. Regarding this last point, the inclusion of MoE as executing entity has turned out to be a measure of efficiency and cost-effectiveness. Technicians from Ministry areas (ie, Forest Resources, Hydrology, Soils and Water,

²⁸ The Environmental Impact Study (which covers the environmental and socioeconomic impacts and the measures to avoid them) is included in Report 3: Environmental Impact Study, prepared by the Brightline Institute. This document was done to complement the Program’s Environmental and Social/Gender Impact Assessment (ESIA).

Planning, Climate Change and Social Participation) have actively participated in the preparation of this proposal, and especially in the technical design of the projects afforestation and water conservation.

The program has included the experiences and recommendations of independent local research centers (such as INTEC, UAFAM, Loyola Institute, Brightline, IDIAF, etc.) and other government agencies. Particular attention has also been paid to the internationally established forecasts and criteria by the United Nations, when considering specific measures such as the choice of water supply and conservation measures. Therefore, an emphasis has been placed on local and traditional species that are capable of adapting and have good commercial value, in order to promote a better climate adaptation.

Therefore, the criteria to be used in the selection of land for community for infrastructure works and forests, considered the system of land tenure in each of the communities targeted by the Program. That is, if it is a fiscal land, family land or individual land. Before separating the land for project interventions (for example, storage tank, and treatment plant), the Program also considered the following factors:

- Clarification of the type of property / management;
- Cost-benefit analysis and
- Appropriate agreements between the Program and the land managers / owners.

F. Describe if there is duplication of project / programme with other funding sources, if any.

The proposed Program is the first integrated approach to expand sustainable water management and increase the resilience of water resources of rural communities in SC, while contributing to their institutional and community capacity. The components of the Program correspond to the products of the "Environmental Protection Program of USAID / TNC (No. 517-A-00-09-00106-00)", which produced the study *Critical Points for the Vulnerability to Climate Variability and Climate Change in the Dominican Republic*, but go further in terms of interventions, integration of climate change adaptation for water management, water supply and sanitation services, the scope of monitoring and evaluation (M&E), and the dissemination of knowledge as proposed by Berigüete et al. (2015) and Berigüete & Terrero (2016).

The USAID / TNC 517-A-00-09-00106-00 project ended in April 2014, so it can be excluded from the list of interventions / funding sources that can be duplicated. Other existing initiatives in the Dominican Republic, which integrate adaptation to climate change and resilience, in their general framework, and implemented by government entities and local NGOs, do not cover the selected province. Among these interventions, the most recent climate change adaptation projects are:

- "CCRD Project for Climate Resilient Infrastructure Services (CRIS)". A USAID multinational project focused on increasing the resilience of the National District's infrastructure services (for example, transportation, water, sanitation, waste, energy, communications and housing) to climate change. This project ended in 2014.
- CCCCC / EU "Assessment of Vulnerability and Capacity (VCA) in the face of climate change in agriculture in the province of San Juan and Subzone of Hondo Valle in Elías Piña, Dominican Republic". This project ended in 2015.
- The ongoing projects of USAID / DR "Program of Planning for Adaptation to Climate Change (CLIMA-Plan)"; "Implementation of climate change adaptation measures (CLIMA-Adapt)"; and the "Program for Enhanced Climate Information (CLIMA-Info)"; which focus on the provinces of Santiago, Samaná, San Pedro and the National District.

Additionally, the Program incorporates lessons from the aforementioned projects and other initiatives.

Table 10: Lessons Learned from other Adaptation Projects

Project	Applicability
Critical Points for the Vulnerability to Variability and Climate Change in the Dominican Republic and its Adaptation to the Same	<ul style="list-style-type: none"> – Understanding vulnerability, sensitivity and exposure to climate change in water, agriculture and other sectors, can help design better projects and activities of adaptation to climate. Includes discussing the causes of vulnerability
Sanitation Project Of 5 Pilot Municipalities	<ul style="list-style-type: none"> – Design and construction of sanitary sewer networks, based on the specific needs of the beneficiaries. – Include integral development approaches and gender equity in water works, and improve the conditions of hygiene and public health of the beneficiary communities. – Monitor the jobs created during the execution of the works, and the effect of this on the local economy.
CCRD Project on Climate Resilient Infrastructure Services (CRIS)	<ul style="list-style-type: none"> – Anticipate institutional challenges to maintain the cities' internal capacity for climate resilience and take advantage of opportunities to introduce climate considerations into the decision-making planning process. In the Program, this applies to the community context. – Involve and retain the appropriate municipal staff and take advantage of the value of the working groups. Involve the private sector with a different strategy, including consider preparing short and long-term options in an adaptation portfolio.
Program National Sanitation Strategy Of The Dominican Republic [Program DOM-014-B]	<ul style="list-style-type: none"> – Carry out diagnoses of the management status of excreta, wastewater, solid waste, and hygiene practices of the communities. – Agree, among the main actors (at the community level), the objectives to be reached in the horizon of the Program. – Define the general guidelines of the adopted strategies, and prepare a general plan to prioritize investments.
ECOMICRO - Green Funding for Adaptation to Climate Change (IADB DR-M1048)	<ul style="list-style-type: none"> – Includes design of green financial products that include loans and technical assistance to facilitate the implementation of climate change adaptation measures for small farmers in the southern region of the Republic Dominican.
Vulnerability and Capacity Assessment (VCA) against climate change in agriculture in the province of San Juan and Subzone of Hondo Valle in Elías Piña, Dominican Republic	<ul style="list-style-type: none"> – Gain credibility: Use the best data and information available, of the highest quality; Apply and recognized methods and procedures of analysis; Clearly communicate data gaps, method limitations and uncertainties in results; Discuss non-weather related factors that may cause confusion. – Gain legitimacy: Involve key stakeholders in the design of the Program and Projects; Ensure that stakeholders represent the full range of appropriate technical sectors and levels of society; Maintain open dialogue and participation, providing voice to many actors throughout the process (especially the most vulnerable).
Program of Planning for Adaptation to Climate Change (CLIMA-Plan); Implementation of climate change adaptation measures (CLIMA-Adapt); and the Improved Climate Information Program (CLIMA-Info)	<ul style="list-style-type: none"> – The documents of these projects have been used only as a reference. However, the design of the projects suggests the participation of the direct / affected beneficiaries as a reasonable approach to address vulnerability to climate change and achieve other collateral benefits (such as political participation, institutional capacity, and more information). – The link between community structures that work with risk management and those that are interested in or committed to

	increasing the adaptive capacity of communities in the face of climate change has been strengthened.
Preparation of projects to reduce emissions from deforestation and degradation (REDD +)	– Promote the use of sustainable forest resources throughout the national territory and reduce emissions from deforestation, to the benefit of poor rural communities and biodiversity.
Santiago Human and Resilient [within the 100 Resilient Cities International Initiative - 100RC]	– Establish strategies to facilitate the implementation of integral solutions to face the challenges generated by globalization, urbanization and climate change, and their socio-economic and environmental impacts.

Other reviewed interventions are focused in human settlements, watersheds, and tourism. No other interventions were found in the Programme's targeted province of San Cristóbal that was verified with officials of the Ministry of Environment and Natural Resources and the Strategic Development Plan of San Cristóbal.

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

An Information and Knowledge Management (I&KM) system is an integral component of project management, particularly within the context of climate change, where the context is constantly evolving and there may be necessary exchanges between different objectives. The Program has been conceived as a demonstration mechanism to improve the capacity to implement measures aimed at strengthening adaptation to climate change at the community level. In this sense, the dissemination of lessons learned will be a key activity. The Monitoring and Evaluation (M&E) Plan will pay special attention to capture the lessons learned to raise the results of the project to other areas and vulnerable communities in the country. Component 2 of the Program ("Capacity Building and Capacity Development in Key Institutions and Communities to Manage Risks Related to Long-term Climate Change") focuses particularly on the dissemination and exchange of information²⁹. As is detailed in this document, different knowledge materials (manuals, website, calendars, presentations, etc.) will be produced for specific target groups (politicians, field workers, communities, academia, media, etc.), integrating practical lessons on "how to achieve more sustainable and more resilient water management" in rural communities. Greater reach will also be achieved at higher levels, participating in the ministerial dialogues and COPs of the UNFCCC.

The program will develop a series of tools and instruments to be applied in the selected sites, and will serve as a basis to address climate change in target communities by increasing resilience through better IWRM. Component 1 will create technical instruments to support a wide range of concrete adaptation activities for sustainable water management and drinking water and sanitation services, based on the identification of best practices, appropriate technologies and learned lessons that will be mainstreamed into best practice manuals and guidelines. Participatory development of these tools and instruments, as well as in development of pilot activities will ensure the endorsement by stakeholders, therefore contributing to successful future replication efforts, especially in other areas or similar communities.

²⁹ The objective of this approach is to create opportunities to generate knowledge that can be widely disseminated, and to develop the capacities of a wide range of stakeholders and key actors beyond the project. In addition to the guidelines provided by the AF, the guidelines proposed by CARE have been considered, which are recognized for their efficiency in the context of communities-based adaptation. These tools are available at: <https://goo.gl/kNZ1HP>.

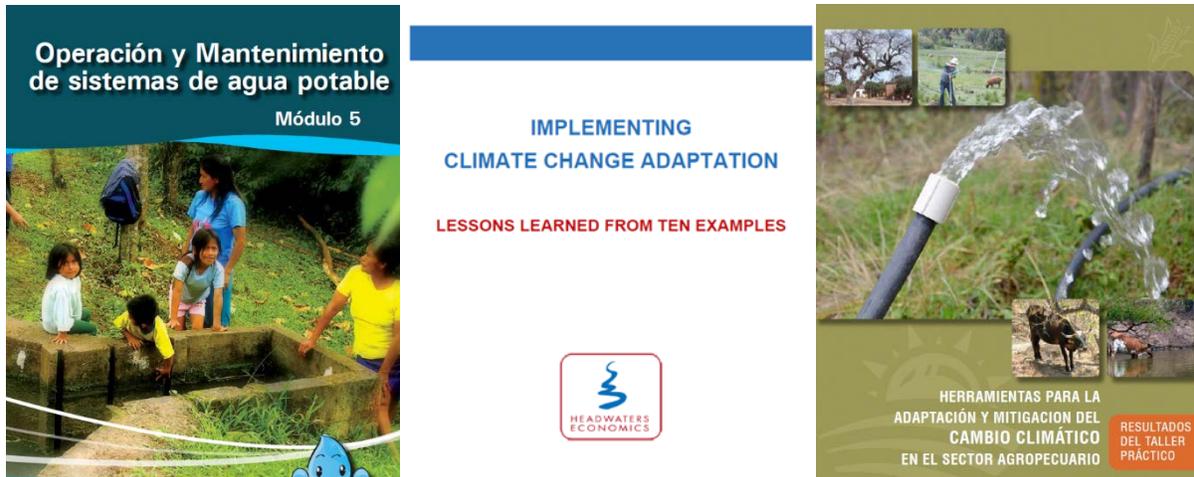


Figure 11: Examples of Materials to be Produced by the Program

At the field level, the Program will benefit from the experiences and knowledge of community members, municipalities, government agencies, entrepreneurs, local leaders, NGOs, universities, and consultants. The program will facilitate the development of community adaptation activities through participatory workshops at local level to ensure a higher level of participation, promoting the empowerment and ownership of the program and strengthen its long-term sustainability. Workshops will serve to identify local conditions (strengths-weaknesses-opportunities-threats), understand the needs of the community, especially with respect to vulnerability and adaptation, and identify and prioritize adaptation activities.

To date, several development programs and projects have been identified that can incorporate the experiences and lessons learned in their work activities. Component 2 will facilitate replication through training, awareness and activities in the field. As this component includes establishing and maintaining a website; a newsletter; training and outreach programs targeting key stakeholders (empowered women and young leaders) that may include field exchange visits, information materials, training workshops and events; as well as the dissemination of the results and impacts of the Program and the lessons learned, and to promote the exchange of experiences. International agencies can share the lessons learned by the Program through their national, global, or regional initiatives. Local universities will do the same.

All knowledge products of the Program will be socialized with the relevant public. To ensure that this will work beyond the duration of the project, all products will be transferred to key institutions (not only as training, but also to introduce climate change adaptation into the decision-making process), which could become the main impact of the Program, especially if this can establish regular processes for institutions and communities. For example, in the preparation of each written guide two consultation steps will be included: (1) to capture the existing knowledge of interest to be disseminated (particularly among the most experienced people in the community); and (2) to verify the adequacy of the guide's design, through the use of a preliminary version to be tested with the members of the community. The final version of the teaching materials will also be transferred to the local authorities during the monitoring and replication agreements, after carrying out consultative and validation processes.

The evaluation and monitoring activities of the Program incorporate criteria and indicators to evaluate the knowledge management activities, and include precise elements for the identification, description, documentation and reporting of the lessons learned. At the end of the Program, a final report will be made on the lessons learned (in digital format) that will be presented to the authorities and institutions related to the project. This report will have a printed version, for its dissemination to the participating

communities and other identified communities that may be interested in the experience and that share the conditions of vulnerability before the projects. This will be shared with NGOs.

- H.** Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

The Program reflects the main pillars and cross-cutting approaches of the National Development Strategy, the National Climate Change Policy and other relevant instruments. Executives of IDDI, officials of the Ministry of Environment and Natural Resources, professionals and technicians of INAPA, as well as consultants, advisors and academics, participated in the preliminary consultative process. As a result of several meetings, the possible areas of intervention of the Program and the multi-interdisciplinary approach to the consultative process to be followed were established to ensure that the goals of the Program cover the key sectors, the stakeholders, and the final beneficiaries of the interventions.

Screening of Stakeholders

The Ministry of Environment and Natural Resources, as main government counterpart of the process, through its Department of Climate Change, suggested the key government institutions related to the Program objectives and general activities. To this end, he instructed IDDI to communicate with these institutions and organizations, seek their support and evaluate the possibility that they could provide it, and coordinate additional consultations with all the main stakeholders (during the conceptualization and design phase of the Program). This process resulted in a series of meetings with government executives to ensure the participation of their respective institutions, and confirm their availability.

The main topics discussed during these meetings (from May to December 2016) addressed the climate scenarios elaborated in the context of the Third National Communication, the relevance of the Critical Points Report, the areas of DR most severely affected by climate change, as well the criteria to select the areas to intervene. After four rounds of meetings, five criteria were finally agreed:

- Climatic vulnerability (exposure and sensitivity to climate change);
- Social vulnerability and poverty of the family nuclei (low adaptation capacity);
- Availability of relevant information (water service, conflicts of use, etc.);
- Existence of ongoing programs and projects (to avoid duplicity and overlaps); and
- Diversity of production systems and target groups (housewives, women, etc.).

The province of SC presents many areas that meet the above mentioned criteria. Within these areas, the communities identified as beneficiaries of the program's interventions were consulted directly and on a vis-à-vis basis. This strategy was particularly successful, because it allowed the identification of specific sites for the activities implementation and individual projects (i.e., rural aqueducts, forestry plans, etc.).

Other relevant institutions consulted on the possible outcomes of the Program and the relevant actors were: Ministry of Agriculture, Dominican Agrarian Institute (IAD), Dominican Institute of Hydraulic Resources (INDRHI), Dominican Agribusiness Board (JAD), Pro-Nature Fund (PRONATURA), Technological Institute of Santo Domingo (INTEC), Center for Sustainable Agriculture with Appropriate Technologies (CASTA), Foundation for the Development and Welfare of Women and Children of San Cristóbal

(FUNDEBMUNI) and Foundation for Water and Sanitation of Haina. In the opinion of the consulted officials, it was necessary to make specific consultations with the rural communities, their organizations, leaders and representatives, to point out the commitment of the interested parties in the complete proposal and to define the specific sites of the Program in the design phase this. As a result, a first map of actors was drafted, which was the basis to design the consultations, according to local regulations³⁰.

Participation Plan

After all the actors consulted during the development of the concept note were informed about the AF endorsement to the proposed Program, and there was consensus regarding the main components and the logical framework of the program (results, products, activities, indicators, etc.), a technical meeting was held at the MoE in April 2017. The following institutions participated in these meetings:

- Ministry of Environment and Natural Resources,
- National Institute of Potable Water and Sewerage (INAPA), and
- Dominican Institute for Integral Development (IDDI).

These meetings validated the logical framework and included extensive discussions on the proposed activities and their relevance to the objectives of the Program. Special emphasis was placed on the need to involve communities in the planning of water resources interventions, the need to use existing organizational structures, including local NGOs, the need to ensure that funds lead to real action on the ground and the scale of interventions that could be possible within particular amounts of funding. There was considerable debate about which livelihood options would be most effective and about the need for communities to be part of the decision-making process when choosing particular options. Agro-forestry was identified during the meetings as a particularly suitable livelihood option within the conservation efforts of the basins. In addition, the need to ensure that the project focuses on drinking water supply and access to water resources was strongly emphasized by the participants, following their experience in previous projects at the community level. The interested parties identified the importance of considering multiple uses of water as a problem in the construction of water-related infrastructure.

As the concept note adopted by the AF included a wide range of stakeholders (at national, provincial and community level, government sector, private sector and civil society), a series of visits and consultations were planned. In accordance with the Terms of Reference of the Environmental Impact Study (and the *Guide for Social Impact Assessment* and the *Guide for Environmental Impact Studies*, provided by the MoE) consultations would be convened after completing the Environmental Impact Assessment, to ensure that the proposed interventions do not have significant negative impacts on the communities, that they can contribute to their development, that they will increase their resilience, and that the communities give their approval to the Program at full proposal stage. Complying with this aspect was the main requirement to be able to proceed with the technical design of the Projects.

Preparation of the Consultations

The stakeholder consultation and participation process for the full proposal was based on the planned strategy included in the concept note to achieve greater participation and commitment from the communities and their organizations. Said strategy included -among others- the following:

³⁰ To ensure that participants present institutional (and not personal) viewpoints, they were asked to freely communicate their participation in the Program so far, and to seek the due approval of their executives or leaders to continue collaborating in the proposal development. More meetings are scheduled after program approval by AF.

- Holding workshops with key actors (individuals and / or organizations) to present the project, carry out evaluations, identify activities and establish objectives and commitments. As needed, the workshops included some sessions in Creole (for Haitians who do not speak Spanish).
- The whole process included preliminary visits to potential communities to provide them with information about the Program and allow community leaders and their members to discuss the Program with each other before the workshops, respecting their own processes and times regarding internal consultation and decision making.
- After the communities discussed the Program and were clear about the expectations and possible benefits, the workshops were scheduled. The objective of each activity was to identify and prioritize the actions of the Program taking into account the resources and capacities of the communities. This process facilitated the successful participation of stakeholders and, therefore, achieved an adequate assessment of needs and the establishment of appropriate objectives.
- The communication was cordial and with an adequate and respectful cultural approach to ensure adequate inclusion, understanding and contribution. The participation of women and the elderly was encouraged to ensure equitable participation and a more comprehensive vision.

In addition to face-to-face consultative meetings and interactive events, the Program also prepared a sample of knowledge management material on resilient-resilient IWRM and potential livelihood diversification activities (in form of a fact sheet, using with the content of the concept note). This material was prepared in an easily understandable format for dissemination to key stakeholders and.

Conducting the Consultations

In December 2017, two consultation workshops were held with representatives of local communities and organizations. Representatives from a total of 20 organizations had the opportunity to comment on the proposed program and provide detailed feedback, in particular on the range of water management activities and livelihood diversification that should be supported using AF resources, to ensure the effectiveness of the interventions and to make the designs of the individual Projects more efficient.

Among those consulted are:

- Provincial Development Council-San Cristóbal Strategic Plan (PESC),
- Association of United Women for the Progress of San Cristóbal (AMUPROSANC),
- Chamber of Commerce of San Cristóbal,
- Dominican-Haitian Women (MUDHA),
- Institute for Environmental Studies - San Cristóbal,
- Association of Coffee Growers La Esperanza (ASOCAES),
- National Police,
- House of Women Villa Altagraciana (CAMUVA),
- Community Battalion,
- Ministry of Women,

- Foundation for the Wellbeing of Children (FUNDABINI),
- City Government of Villa Altagracia,
- Federation of Neighborhood Boards of Villa Altagracia (FEJUVEVA),
- Pro-Development Board of the Cacaos (APRODECA),
- Liceo Felix E. Mojica,
- "Quisqueya Learns with You" (Dominican Government),
- National Institute of Potable Water and Sewerage (INAPA),
- Ministry of Public Health,
- Fernando Arturo de Meriño Agroforestry University (UAFAM) and
- Ministry of the Environment and Natural Resources.

The key points discussed during the meeting were the following:

- The participants supported the proposal.
- The participants, who identified a strong link between the inability to manage the impacts of climate on their livelihoods and environmental degradation, praised the livelihoods part.
- The need to pay special attention to gender roles was emphasized, citing problems such as abuse and domestic violence, lack of income and childcare.
- All participants strongly supported the outstanding participation of women, as well as any other livelihoods activity that can be included in the full proposal.
- Potable water supply projects must include domestic sanitation systems, to avoid environmental pollution and use wastewater as fertilizer.
- As far as possible and feasible, include provisions for payments for environmental services, in accordance with community-based water management planning.
- The participants identified the importance of linking agro-forestry activities with the management and conservation of water sources.

Participants were presented with a range of water management and livelihood options. Those that were particularly and positively supported by the participants (drilling, excavations, rainwater harvesting, wood lots, dry season gardening, beekeeping, animal husbandry, bottled water, handicrafts, production of soap, butter and other processed products) They were identified as those of greatest interest to the participants, who requested that they be included in the complete proposal. However, it was clarified that despite the wide range of options and alternatives for livelihoods diversification, the Program could potentially support, to be more efficient, those that are compatible with the primary objectives of the water supply systems will be prioritized. Drinking water and basic sanitation (construction of rural aqueducts, rehabilitation and repair of works, planting of water, planting of fruit trees, creation of water marketing structures, systems to take advantage of water served for agricultural purposes, water bottling, etc.). All of these alternatives can increase income and diversify the livelihoods of communities.

The participants were asked to identify the factors that should be used in the selection of the areas targeted by the program, in accordance with the information provided and their best knowledge and experience. A wide range of factors was discussed, but in particular the degree of vulnerability of water resources and household income (and its linkage with factors such as poverty and livelihoods) was emphasized. Therefore, these factors were used to identify target communities. For this reason, poor rural communities were privileged, and particularly, those that do not have potable water supply, those that have it but with deficiency, and in general those that do not have community sanitation systems.

With respect to implementation arrangements, participants understood the importance of investing most resources directly in communities, through existing governance structures, but at the same time recognize that in some communities existing structures may not necessarily be the most appropriate. The management structure at the community level may vary from one community to another. However, the participants are optimistic when they point out that some communities have created associations, committees and organizations (i.e., risk management committees, water user associations, etc.) with great success. The participants confirmed the important role of MoE as a key actor, and cited the positive experiences of the ASOCARES that have been supported by INAPA in different communities.

Results of the Consultations

In terms of community participation, each community is different from the others. Some participants suggested holding another meeting when the Program be approved and financial resources are obtained (to ensure that the AF will provide these resources), and with a definition of the individual projects that would be executed. After that, the Program can begin to make inter-institutional/organizational arrangements with the communities and their representatives. Participants expressed their interest in participating cooperatively and collaboratively as partners, but they indicated that the Program should not create excessive expectations in the communities to create more confidence.

In the opinion of the attendees, the proposed Program has been developed with considerable great detail, the most important elements of the development of the original proposal were explained and the results of the community consultation have been rationally included in the context of the complete proposal. They agree to provide more information and / or assistance if requested. Practically everyone indicated interest to participate in the planning and / or execution of some specific activities in the field.

Annex 6 is a detailed report of the consultations and meetings (including a copy of attendance lists).

I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Under a baseline scenario, the specific intervention areas reported conditions of poverty, socio-economic and climatic vulnerability (lack of adequate water supply and sanitation) that will continue and even increase over time. Given that the Dominican Republic is very vulnerable to climate impacts, under increasing temperatures it is very likely that the availability of water, forest and soil resources will be greatly affected. Changes in total precipitation, increases in drought or frequency of storms would act in a similar direction. In relation to these matters, the program's interventions seek synergies with public health, the family economy, food security and risk management. While there is great uncertainty regarding the precise local consequences of global warming, inaction would surely be detrimental to the country, both for the losses incurred due to current climate variability and future changes.

With respect to the proposed interventions of the Program, in general there are limited options available in terms of alternative actions to develop climate resilience in sectors such as water resources

and public health. Under these conditions, the additional program, with respect to any socioeconomic baseline, is difficult to prove due to the multifaceted nature of the vulnerability (environmental, social, economic, territorial, etc.). However, it is expected that the Program will have a positive impact on the conditions and quality of life of the communities, and that it will reasonably increase their resilience.

The following analysis shows several justifications regarding the request for funds by component.

Component 1: Community-level implementation of climate resilient water resource management activities

Baseline scenario (without the resources and support of the AF)

The participation of the community in planning management activities, especially by women, is very limited, which increases their vulnerability to the effects of climate change. There are also no links between the river basin management plans and the specific needs of the communities and the potential impact they may have on the ecosystem through proper sanitation, limiting cross-water services with social and economic potential highlighted in the National Development Strategy. As a result, the momentum and purpose for integrated climate resilient water management is lost and the support of local communities is not achieved; or the programs of civil society and government cannot achieve transformational changes. There is a lack of information in communities about how to manage water, diversify their activities and increase their livelihoods, in response to the impacts of climate change on their water resources, which limits their ability to respond and adapt to climate change. As in many communities in DR, vulnerable communities in the province of SC currently face significant limitations in the implementation of water management measures that can create resilience to the impacts of climate change. There is not enough capacity within the communities and the government to support them, identifies appropriate measures, implement them and maintain them. Even where infrastructure exists, such as pump fields, lack of resources and community organization result in insufficient maintenance.

Program scenario (with the resources and support of the AF)

Using the AF resources, the Program will implement extensive training of key institutions and communities, which will provide long-term support to communities in the planning and implementation of climate-resilient water management measures. This will be an essential element, both for the implementation of the proposed AF program, and for greater support to the target communities. Thirty communities will receive support for the development of water management plans at the community level. Essential to this process will be the establishment of appropriate institutions at the community level, with a goal of at least 50% representation of women in these organizations. A key aspect of this component will be to convene regular meetings of representatives of these 30 communities, to share experiences and help maintain momentum in the implementation of the plans at the community level, and to promote the long-term adaptive management of water resources within these communities. AF resources are necessary to implement an extensive water management infrastructure program in the 30 target communities. This will mainly include drinking water supply and sanitation systems, and watershed reforestation. These measures will provide communities with the capacity to manage their water resources at the community level, which will greatly help them adapt to the impacts of climate change, including the increasing prevalence of droughts and floods. INAPA is a key institutional actor, being the main authority in water and sanitation services, and being the executor of these projects.

Several mechanisms will be developed through community-level institutions to ensure the maintenance and ongoing management of the measures beyond the duration of the proposed program. Specifically, the creation and/or strengthening of the ASOCARES will be encouraged, which will be empowered by the built systems and will be supported for their efficient operation in the medium and long term. The

lessons learned from the development and operationalization of community water management plans will be documented and disseminated among key stakeholders throughout SC and other regions. This will establish a situation in which the key institutions will have the necessary capacity to support water management activities (climate resilient) driven by the community throughout the country.

Component 2: Capacity building and capacity building in key institutions and communities to manage the risks related to long-term climate change

Reference scenario (without the resources and support of the AF)

In a baseline scenario, the 30 targeted communities report conditions of poverty, socioeconomic and climatic vulnerability (lack of adequate water supply and sanitation, unsustainable agricultural practices, environmental degradation, and dependence on activities incompatible with the ecosystem). As DR is very vulnerable to climate impacts, under increasing temperatures it is very likely that availability (production) and access (prices) to drinking water will be affected. Changes in total precipitation, greater drought or the frequency of storms would act in a similar direction. While there is great uncertainty regarding the precise regional or local consequences of global warming, inaction would surely be detrimental to the target communities, both in terms of losses incurred due to current climate variability and future change. In this context, socioeconomic scenarios point to increasing risks of problems related to poverty, such as water scarcity, health or social welfare. Climate variability and climate change place a heavy burden on rural communities and the most households, exceeding their capacities.

Program scenario (with the resources and support of the AF)

The focus of this component includes both the strengthening of specific capacities through adaptation planning and climate risk management. Although this represents only a first step in the scaling up of successful actions and learning, the results of the Program for the object areas and in the Country represent a significantly positive alternative scenario in comparison with the baseline. The lessons learned from the development and operationalization of water management plans at the community level will be documented and disseminated to the main stakeholders throughout DR, through the use of a wide range of alternatives. This will establish a situation in which the Program will have produced the necessary capacities to support community management of drinking water and climate-resilient water conservation activities throughout the country. With respect to the proposed interventions, there are limited options available in terms of alternative actions to develop climate resilience in the management and use of water resources, and their links to the health and economy of communities. For a reference socioeconomic scenario such as the communities identified, it is difficult to prove any additionality due to the multifaceted nature of the vulnerability (environmental, social, economic, territorial, etc.) and the lack of public policies to manage the climatic risks and climate impacts in poor communities.

J. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme.

The sustainability of Program results is directly related to "*practice-focused*" Component 1 (*sustainable water management under climate change*) and the "*capacity-focused*" Component 2 (*capacity building/development and outreach*) of the institutions. At community level, capacity building will provide permanent benefits once the program is completed: trained local staff (especially vulnerable women) will have strengthened positions and will be able to participate in future development projects and/or continue to improve their efforts related to climatic adaptation. Due to the novel but realistic design of the Program, its results will influence practice and policy beyond the time of project implementation.

The Program long-term sustainability is based on several pillars. On the one hand, the empowerment of the community is critical and measures have been taken to ensure this, such as the incorporation of all possible partners and populations during the Program formulation stage (as is above discussed). The dissemination of the expected results, with sufficient quality and transparency to constitute -by itself- the best practices of community-based adaptation (and demonstrate it on the ground with the Component 1) will dramatically promote this. The Program will also take into account the needs of local organizations, respecting their cultural and legal status, avoiding conflicts and being sufficiently useful to create the appropriation of the end user. This is also relevant for NGOs and other local organizations.

The Program will also build on best practices and knowledge of key institutions (Moe and INAPA), and will make practical use of the tools developed to identify profitable technologies and practices. This has allowed us to design a set of specific activities (in the form of individual projects) of adaptation to climate change that will be executed in the field. The learned lessons will provide solutions for sustainable and climate-smart water management, which can be consolidated and replicated beyond the useful life of the Program; thus incorporating adaptation technologies into the current spectrum of conservation and development instruments. In terms of water supply and sanitation services, a similar approach can be used to achieve savings and maximize the economic function of AF resources.

The poorest households, small farmers and representatives of target communities will be trained to take charge of small-scale infrastructures, and the Program will train women and young people to carry out lighter maintenance tasks, thus contributing to strengthening local capacity and empowerment. This commitment was prioritized during the consultation phase; it was agreed in the complete proposal, and it will be an obligation of the implementation of each Project. At higher level, a factor of sustainability is government participation, both at political and operational levels. Through the Ministry of Environment, the Program brings the commitment of the water authorities (INDRHI and INAPA) and other authorities to support the communities to maintain the water and sanitation infrastructures built once the Program is finished. Similarly, the Ministry of Public Health and the Ministry of Education can make significant contributions to supporting communities to extend health and hygiene practices beyond the Program.

Indirectly, the Program will demonstrate how climate-smart investments can be profitable, promoting the extension of similar activities beyond the selected sites. With a greater awareness of market opportunities related to adaptation to climate change, the Program will promote new investments in. The methodologies, results and lessons learned will be compiled and disseminated to other third parties through the Program and through a range of well-focused media. To maximize this function, a public awareness campaign and demonstrations of interventions effectiveness of in the field will be organized.

The Program will monitor and evaluate its performance on an ongoing basis (M&E); reducing any risk that the beneficiaries may be dissatisfied with the interventions. Lessons from other projects seem to indicate that the risk of the projects ending after the project teams left is low and quite manageable.

In summary, the following aspects of the sustainability of the program have been identified:

Table 11: Program Strategy for Long-Term Sustainability

Criteria / Explanation
<p>Development of Capacities</p> <p>The capacities development and strengthening of the planners, and at all levels of government, will provide a central focus for all activities. The training related to climate change will be developed with a focus on community-based adaptation and restoration activities of the aquatic ecosystem. These will be designed with replicability in mind, and will remain after the completion of the Program as a continuous key resource for</p>

workers, authorities and other sector agencies. The program will develop evidence of the cost of adaptation per beneficiary unit (i.e., cost per household, productive hectares of forest land, community income, etc.).
<p>Investment in Infrastructure</p> <p>The interventions and infrastructures have been subject to a financial feasibility assessment during the design and prioritization process, to guarantee sustainability and maximize the cost-benefits of each of the interventions and for each of the communities. This extends to the institutions.</p>
<p>Financial Sustainability</p> <p>The program will channel the support provided by FA finance to the most vulnerable communities, but with an approach that helps community groups of users/ households (i.e., ASOCARES, risk management committee, forest micro-entrepreneurs, etc.) so that become independent and self-sustaining. In the context of the program, this means that these groups would continue to operate beyond the execution period.</p>
<p>Institutional Sustainability</p> <p>The proposed Program will help DR to improve and create management plans for SC, and for vulnerable rural communities in particular, and mainstream them to the activities of the relevant institutions. These plans (top-down) will also strengthen the local plans of the communities (bottom-up). The design and execution of strong management plans will be important for the sustainability of the activities implemented in Component 1 (such as increased water supply, soil and water conservation measures, agro-forestry, new income, etc.).</p>
<p>Social Sustainability</p> <p>Capacity building activities, networking and presence on the ground will help to achieve the program's social sustainability. Increasing trust through stakeholders' dialogue and consultation, and mobilizing stakeholders through capacity building will help to achieve long-term sustainability. It is expected that a strong focus on the construction of local knowledge, capacities and incentives, as well as a strong programmatic approach, will be sufficient to guarantee gender equity in all operational matters and lead to social sustainability.</p>
<p>Environmental Sustainability</p> <p>It is expected that the Program's focus on achieving a correct adaptation to climate change within degraded micro-basins and vulnerable communities of SC will lead to better environmental sustainability and better management of natural resources. Reforestation and all the variety of "soft" measures adopted to protect watersheds will stabilize the physical environment. The program will promote integrated water management with communities and organizations commitment. In addition, the Program can support the use of renewable energy, such as solar pumping systems or photovoltaic panels, as opposed to fossil fuels, to operate facilities and infrastructures (where be technically and economically viable). As evidence existing water installations powered by solar energy, it can to provide power and lightning for facilities. The sustainability of a system with solar energy depends on the existence of technical and financial capacity of the community to acquire the system. Therefore, under the Program, it will conduct an evaluation first to determine the preparedness of the community to maintain such a system, and if other community actors could co-finance them.</p>

K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

An overview of environmental and social impacts and risks identified as relevant to the Program is summarized below. A detailed analysis on the AF ESP is provided in *Appendix 1: Environmental and Social/Gender Impact Assessment (ESIA)* and the *Appendix 2: Environmental and Social Management System and Plan (EMSP)*. The risks presented were compiled using the following baseline documents:

- Programme's Environmental and Social Impact Assessment (EIA) for all Components
- IPCC AR5 (2014) risks and challenges to Small Island Developing States.

- Consultations with the technicians from IDDI, INAPA and the Ministry of Environment.
- USAID (2013). Dominican Republic Climate Change Vulnerability Assessment Report³¹.
- The Risk Registry (offline registry log) for UNDP.

Table 12: Overview of Environmental and Social Impacts and Risks

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	<p>The Program (and all sub-projects) has been designed to comply with relevant national laws, regulations and policies. Compliance with laws and, in particular the following key Legislation, will be monitored during implementation:</p> <ul style="list-style-type: none"> - Law 64-00 on Environment and Natural Resources - Law of Protected Areas (202-04) and its modifications - Freedom of Information Law (200-04). 	<p>Low: necessary monitoring is limited to compliance with proper laws and communicates the grievance mechanism.</p>
<i>Access and equity</i>	<p>Equity begins with the Program staff, and then with the approaches and processes in design and finally in project implementation. IDDI approach to access and equity is enshrined in its <i>Code of Conduct and Ethics</i>³², which staff and consultants shall to sign and adhere throughout their service to the Program (including provisions for Conflicts of Interest and Confidentiality).</p> <p>The intervention logic of the Program is to provide benefits in most vulnerable communities with fair and equitable access to activities, equipment, resources and training throughout both planning and implementation phases. It's necessary note that targeted areas count 4,680 households (which means 12,200 poor women) that would need additional resources and assistance to build resilience.</p> <p>All groups which participation has been requested have an equal opportunity to access to the activities proposed by the Program. Eligibility criteria of the Program have been clear and transparent, and it was defined jointly with key government institutions, relevant stakeholders, and local authorities.</p> <p>Program interventions were designed to remove barriers as: difficulty of access to water resources; vulnerability in terms of biophysical and climate risks; social vulnerability; and as defined selection criteria. Through these criteria, the Program assured participation of less endowed groups, including women, elderly and particularly poor people.</p>	<p>Mid: Program interventions could be “over-demanded” (especially jobs to be created) and some groups may not get access. Potential risks are lack of transparency and favoritism. Potential impacts will be monitored to ensure access and equity is equally provided to all communities and members.</p>

³¹Dominican Republic Climate Change Vulnerability Assessment Report. Available at: <https://goo.gl/2eWBkg>.

³² Código de Conducta y Ética del IDDI. http://iddi.org/file/repository/Codigo_de_Etica_y_Conducta.pdf.

	<p>Fairness and access to contracts under the Program, particularly local micro and small businesses, is guaranteed through a Department's procurement rules, oversight by Program Steering Committee (PSC) and planned audits.</p> <p>The proposed Program's results framework will measure developments related to 'access and equity for vulnerable groups' throughout the Program duration. Components and activities are designed in consequence.</p> <p>All groups which request participation will have an equal opportunity to benefits from the adaptation activities. The Program ESMP include management measures to ensure fair access, transparency, and equity throughout implementation, clearly stating there will be neither discrimination nor favoritism in accessing project benefits.</p>	
<p><i>Marginalized and vulnerable groups</i></p>	<p>Program focuses on marginalized and vulnerable groups (women, youth, elderly without fixed income, etc.) and aims to assist them to improve their water supply and sanitation access thus its living conditions. A particular focus has been placed on single mothers who are vulnerable and Dominican citizens descendants from Haitians and Haitian immigrants (especially the undocumented population) and their families³³.</p> <p>The project will be focusing on reducing the specific impacts of climate change by building resilience in the environment, with both individual households and community services (under Component 1). In this way, all vulnerable groups are expected to be positively impacted notwithstanding pre-existing non-climate factors affecting these persons (under Component 1 and Component 2). The Program does not have negative impact on these groups.</p> <p>Climate risks awareness activities of the Program and the community-based water resources management plans, will provide detailed assessments on the impacts of events as droughts, floods, storm and hurricanes. This information (which will be based on the last IPCC AR) will be used to make planning decisions and will also be used by the local community organizations and institutions. It is likely that these studies will find some properties that will be impacted and may cause the property values to decline.</p>	<p>Mid: There may be some downsides to the climate risk awareness activities of the Program, as the potential risk of to identify zones which water and/or jobs are not sustainable under climate change. In cases where a land use change can displace an economic activity (as re-afforestation), in accordance with the laws, the new activities will be defined with the affected people, which will be offered a job with similar payment. Potential impacts will be monitored to ensure they don't affect to marginalized groups.</p>

³³ IDDI is the Dominican Republic's UNHCR's primary implementing partner for humanitarian assistance for Haitian immigrants and their families, including Dominicans of Haitian descent. The humanitarian assistance program entails emergency support for them by providing material assistance, specifically housing, food and health, as well as psychological support and legal assistance. More information available at: <https://goo.gl/zBnLkF>.

<p><i>Human rights</i></p>	<p>The Dominican Republic is a democratic nation that ratified important international treaties related to human rights as: <i>Torture and Other Cruel Inhuman or Degrading Treatment or Punishment (CAT)</i>, <i>Civil and Political Rights (CCPR)</i>, <i>abolition of the death penalty (CCPR-OP2-DP)</i>, <i>Protection of All Persons from Enforced Disappearance (CED)</i>, <i>Elimination of All Forms of Discrimination against Women (CEDAW)</i>, <i>Elimination of All Forms of Racial Discrimination (CERD)</i>, <i>Covenant on Economic, Social and Cultural Rights (CESCR)</i>, <i>Protection of the Rights of All Migrant Workers and Members of Their Families (CMW)</i>, <i>Rights of the Child (CRC)</i>, <i>involvement of children in armed conflict (CRC-OP-AC)</i>, <i>sale of children child prostitution and child pornography (CRC-OP-SC)</i>, and the <i>Rights of Persons with Disabilities (CRPD)</i>.</p> <p>The Program will ensure that national working standards (Labour Code) are respected totally. Also, Program will ensure that appropriate wages will be paid per assigned task and that no child labor will be employed. Security and safety standards will also be respected and enforced. The Program affirms the fundamental rights of people in targeted areas, and thus does not affect their freedom. Furthermore, the Program does not integrate any activities contrary to custom law or traditions. Participation in the Program will be participatory, voluntary and free. IDDI and key executing institutions have a track record of respecting and to promoting human rights³⁴.</p> <p>The Program affirms the fundamental rights of people in targeted areas, and thus does not affect their freedom. Furthermore, the Program does not include any activities contrary to custom law or traditions. Participation in the Program will be voluntary and free. IDDI and key government executing institutions have a demonstrated track record of respecting and to promoting fundamentals human rights.</p>	<p>Low: necessary monitoring is limited to compliance with proper laws and communicates the grievance mechanism.</p>
<p><i>Gender equity and women's empowerment</i></p>	<p>In general, in DR, the national laws and programs are equal for men and women, but in the practice, men have better access to education, jobs, credit, and other consumer items, so they are better able to get life quality³⁵. The Program impacts however may not be equally known and accessible to both genders, due to vulnerable women (mainly whose are head of family) does not have enough time to participate in</p>	<p>Low: vulnerable women could not have enough time to assist to meetings or activities for take decisions and/or men which are head of family could decide in behalf of them. The progress with regards participation of women and empowerment will</p>

³⁴ The Ministry of Environment and Natural Resources has a track record of protecting and promoting human rights, and an online complaints mechanism is available at <https://goo.gl/MxVsW3>. As the real risk is that persons do not know their rights, IDDI will promote awareness of human rights before and during project implementation.

³⁵ Dominican Republic-Poverty Assessment: achieving more pro-poor growth. Available at: <https://goo.gl/LPGfNM>.

	<p>community institutions and/ or any community-based development activities³⁶.</p> <p>However, independent literature, government reports, and consultation with communities and institutions, points that women will disproportionately benefited by program interventions. The program logical framework foresees direct participation for women and women's associations so they can benefit directly from the activities (mainly women that are single mothers and/or head of households).</p> <p>Under Component 1, the Program proposes to support to develop more sustainable income generating activities (ASOCARES) and improve thereby their living conditions, therefore also empowering them in the context of a traditional and male-dominated society. This includes, but not limited to, prioritizing women for program employment and any demand of goods and services.</p> <p>The greatest risk to equity under this project is poverty and poor men, women, children who are the most at risk for not benefiting from project impacts. However, Component 2 was designed to ensure that even poor persons particularly women who cannot access to resources for climate adaptation, can immediately benefit from resilience building from Component 1. Over time and with the success of other national social and welfare programs, these persons will have future access to the long-term benefits of Component 2, in form of capacity building, empowerment and training.</p> <p>The Program foresees direct participation for women and women's associations so they can benefit directly from the activities (mainly single mothers and/or head of homes). This includes, but not limited to, prioritizing women for employment, finance, training and productive and processing schemes. The Program policy for contractors is gender-neutral, but it will be enforced with Program Executive Board (PEB), which will be a balanced team of women and men.</p>	<p>be measured through M&E. Potential impacts will be monitored to ensure women's participation, involvement and empowerment.</p>
Core labour rights	<p>The Dominican Republic is a democratic nation that has ratified 7 fundamental ILO conventions. The country has a comprehensive legislation to protect the labour rights in aspects as <i>forced labour</i> (C029), <i>freedom of association and protection of the right to organize</i> (C087), <i>right to organize and collective bargaining</i> (C098), <i>equal remuneration</i> (C100), <i>abolition of forced labour</i> (C105), <i>discrimination</i> (employment and occupation) (C111), <i>minimum age</i></p>	<p>Low: necessary monitoring is limited to compliance with proper laws and communicates the grievance mechanism.</p>

³⁶ Incorporating a gender perspective in rural water and sanitation projects: experience of MUDE (Women in Development, Dominican Republic). Country Report. Available at: <https://goo.gl/hgHM9y>.

	<p>(C138), and <i>worst forms of child labour</i> (C182).</p> <p>The Program will be implemented in compliance with legislation including the Labour Code. No child labour nor forced labour is expected to result from this Program. Core labour rights concern gender, respect, work hours, etc., and any labour standard will be observed and respected on infrastructure interventions and new production facilities.</p> <p>Also, the Program will also ensure that appropriate wages will be paid per assigned tasks, and that no child will be employed. Social security drivers (i.e., access to first aid, health insurance, etc.) will also be respected and enforced. Core labour rights on gender, respect, work hours; and national labor standards will be respected³⁷. Appropriate wages will be paid per assigned task, and that no child will be employed.</p>	
<i>Indigenous populations</i>	DR does not have any indigenous populations	N / A
<i>Involuntary resettlements</i>	<p>Water supply and sanitation services do not require any resettlement and re-forestation schemes are focused on to bring socioeconomic benefits to communities living on targeted areas so, there will be no involuntary resettlement under the Program and adequate mechanisms are in place to ensure projects do not result in involuntary resettlement. In cases where any activity (including physical intervention, or land use change) can displace people or their livelihoods, these are considered as ineligible and will be discharged. IDDI's <i>Environmental and Social Policy</i> states its commitment with AF to not support "any resettlement of people or the removal or alteration of any physical cultural property"³⁸.</p> <p>One impact on the Programme would be if the construction works within the Component 1 would need equipment that could not be able to reach all targeted areas, so building of access might be necessary. This potentially might slow down the work and increase costs if property owners believe their property boundaries are being infringed on. Public consultations suggest that this risk is low because there is high awareness and concern about Program benefits impacts, and its transparency.</p> <p>Baseline studies did not identify any significant formal or informal livelihood-based economic activities within the area that shall be affected by the Program interventions. Public, municipal, or organizational lands will be used to avoid any conflict with third</p>	<p>Low: Although no resettlements are necessary for the activities, this will be closely monitored. Frequent monitoring and regular consultations will identify risks of resettlement, including to physical/ natural assets and economic/livelihood activities, and manage potential risks per the ESMS. Necessary monitoring will include to compliance with proper laws, human rights, international provisions and grievance mechanism.</p>

³⁷ Applicable labor standards are included in *Código de Trabajo de la República Dominicana*. <https://goo.gl/FnAJtm>

³⁸ Declaración de la Política Social y Ambiental del IDDI (with the AF): Available at: <https://goo.gl/ZMXCxx>.

	<p>parties that can be landowners. A grievance/complains mechanism will be put in place in order to protect any potential affected by the Program.</p> <p>In general, there are no involuntary resettlements under the Program, and mechanisms are in place to ensure sub-projects do not result in resettlement. The Program does not fund any physical or economic resettlement of people nor the removal or alteration of any physical cultural property under any circumstances. A transparent grievance/complains mechanism will be put in place in order to protect any potential third party affected by the Program.</p> <p>To ensure vulnerable groups not be resettled, IDDI follows its significant experience working in sugarcane cutter communities called “Bateys”, providing training and legal assistance to Dominicans descendants from Haitians and undocumented Haitians, and their families³⁹.</p>	
<i>Protection of natural habitats</i>	<p>Program activities under Component 1 will be carried out on areas already under usage. As the Program aims to rehabilitate and protect NatHab through ecosystem-based adaptation measures, the Program will teach practices to dispense traditional agriculture, reducing pressures on ecosystems.</p> <p>Furthermore, the program will work with measures for water conservation (Output 1.3) to limit the runoff and soil erosion in the selected areas. As well, it will reduce the demand of more water-demand products, agro-chemicals and other substance that’s pollutes the soil and the water.</p> <p>The Program may cause negative impacts on the biophysical environment (as noise, pollutants or solid waste during the construction of infrastructures), if activities are not monitored consequently. The Law 64-00 and Law 22-04 protect any area identified as Protected. So, the relevant protected areas of San Cristobal will be protected from further development. No protected areas are affected by the Program.</p> <p>Water facilities may impact NatHabs particularly when areas need to be cleared to build/ operate.</p>	<p>Low: risks to natural habitats occur during the construction of major facilities/infrastructures. The natural habitats will be undertaken by the Program and proper measures will be triggered according to EIAS/ESMP. Monitoring on natural habitats will be undertaken throughout the Program.</p>
<i>Conservation of biological diversity</i>	<p>The Program will adopt agro-forestry practices that increase biodiversity compared to the baseline scenario, including conservation agriculture. Further, the Program will not introduce any exotic or invasive species in the targeted areas. However, as noted before, water storage facilities and irrigation may</p>	<p>Low: potential risks to biological diversity occur during the operation of major facilities/ infrastructures and with the usage of invasive species. The biodiversity will be undertaken</p>

³⁹ IDDI works with the UNDP, USAID, European Union, UNHCR, private sector and others in programs such as health, housing, infrastructure, education, labor rights, migration, risk management, and legal assistance. <https://goo.gl/5xFLNF> and <https://goo.gl/WVx3A8>.

	<p>impact biodiversity particularly when areas need to be cleared to build new facilities.</p> <p>The Program may cause negative impacts on the biological diversity, if activities are not monitored consequently. Habitat and species protection and monitoring will be consistent with the Law 64-00 (environment and natural resources) and the Law 22-04 (protected areas). No endangered or threatened species are located on the Program targeted areas.</p> <p>The Program will adopt practices that increase biodiversity compared to the baseline scenario, including conservation agriculture and agroforestry. Furthermore, the Program will not introduce any exotic or invasive species. Water facilities and small irrigation systems may impact biodiversity particularly when areas need to be cleared to build/ operate.</p>	<p>by the Program and proper measures will be put in place according to EIAS/ ESMP. Monitoring on flora/fauna affectations will be undertaken.</p>
<i>Climate change</i>	<p>The Program is focused on climate change adaptation through sustainable water management that, from a climate perspective, incorporates resilience (adaptation) and reduction or removal of greenhouse gases (mitigation).</p> <p>All adaptation actions undertaken under the umbrella of this Program will need to be assessed constantly in order to understand whether they contribute to build resilience under increasingly variable climate. The final assessment of the Program as well as the socio-climatic vulnerability assessment will support achieving this principle. Potential impacts on land use will also be registered, thus contributing to GHG emissions assessment (for mitigation and/or sinks).</p> <p>However, some minor GHGs emissions can occurs due to the fossil fuel and electricity consumption on building infrastructure, facilities and operations, which will be monitored during Program lifespan. Also, water resources are currently exposed to various forms of pollution associated with the use of fertilizers and pesticides and manure, as the Program will work to prevent it, it will reduce more GHG (CO₂ and CH₄).</p>	<p>Low: climate change adaptation of communities will be included in M&E. GHG emissions risk will be monitoring and managed as is indicated on ESIA/ESMP.</p>
<i>Prevention of pollution and efficiency of resources</i>	<p>Water resources are currently exposed to various forms of pollution associated with the use of fertilizers and pesticides and manure. The Program activities will work to prevent these types of pollution (Output 1.1) and with the introduction of more resilient agriculture/forestry practices (Output 1.3). Under component 3, educational material that can be to include additional content for communities interested into care their own environment conditions.</p> <p>There may be further pollution linked to the build of water capture/ treatment/ storage facilities, including deterioration in water quality downstream, or</p>	<p>Mid: The environmental integrity (air pollutants, oil spill, wastewater, noise, solid waste) will be monitored and proper measures will be put in place according to the EIAS/ ESMP.</p>

	detrimental effects through limiting access to water by downstream users. During the construction of water infrastructure other affectations can occur (noise, solid waste, wastewater, dust, accidents, etc.).	
<i>Public health</i>	<p>By supplying more and better water and sanitation services it is expected a positive impact in public health of selected communities, due to water-related diseases and vectors. Proposed education and training in water management and planning at community level can be extended to prevent water-related diseases (amoeba, cholera, etc.) and vectors as mosquito, avoiding Zika, Dengue, Malaria, Majaro, etc. Mosquito and vector borne-diseases impact severely community members, particularly women, among childbearing age, children and elderly people⁴⁰.</p> <p>All Program workers (staff, personal, technicians, extension agents, labors and consultants) will be equipped with safety equipment to protect them, according the potential risk of their respective tasks.</p>	Low: water storage facilities may increase mosquito habitats, which carry vector-borne diseases. Measures will be designed to specifically avoid mosquito and vectors according to the EIAS/ ESMP.
<i>Physical and cultural heritage</i>	<p>Is not foreseen any adverse impacts on physical and cultural heritage of the people in the targeted areas. As Program activities are designed through a participative approach and with support of key government institutions (i.e., MoE and INAPA) chances to damage any physical assets are practically zero.</p>	Low: necessary monitoring is limited to compliance with proper laws and communicates the grievance mechanism.
<i>Soil and soil conservation</i>	<p>There are no particular fragile lands that would be lost nor degraded by the Program activities. The Program will have positive impacts on the landscape of the intervention areas through the establishment of agroforestry systems and conservation agriculture. Soil conservation and restoring fertility is a key practice in smart-agriculture and forestry.</p> <p>The capacity building and education material produced by Program (under Component 2) it will include manuals for repairing and maintenance infrastructure. The cleaning and maintenance of irrigation systems will also to reduce erosion (especially during floods or periods of heavy rain).</p>	Mid: clearing areas for infrastructure has a risk of exposing land to erosion, however this will be small in scale and mitigation measures from EIAS and ESPM can reverse potential impacts.

Based on the above presented findings, from an environmental and socioeconomic risks perspective, the Program is ranked as **Category B** (across all three components). The impacts and design of the program are not overall high risk when evaluated against the ESP principles. Risks identified at this stage have potential adverse impacts that are fewer in number, smaller in scale, less widespread, reversible or easily mitigated. However, the project design and budget allocations have been designed to focus on those areas with moderated or potentially low risks. Other actions that contribute to reduce risks are:

⁴⁰ See the Health in the Americas Report: *HEALTH STATUS OF THE POPULATION* - Emergent Diseases (2016). Available at: <https://goo.gl/5ZJEPy>. And *Dominican Republic is first country in the Americas to publish guidelines for clinical management of chikungunya*. Available at: <https://goo.gl/X8oiQm>.

- Utilization of short-term community adaptation plans, detailing the specific objectives, adaptation activities, implementation arrangements and commitments, partner institutions and beneficiaries.
- A key aspect for adaptation will be the M&E plan to evaluate the activities progress and results. This plan includes a set of indicators to measure the results of the activities, and to demonstrate how the proposed interventions will increase the community resilience.
- Measures for water conservation under climate impacts (ie catchments / riverbanks, reforestation plans) implemented for at least 2,722 hectares will help to ensure the sustainability of the project in the long term, in terms of preservation and protection of the Water.
- The sensitization, training and technical assistance activities for the execution of the projects will be carried out by relevant government agencies, universities (i.e., UAFAM, INTEC and Loyola) and local NGOs. The Program has identified the NGOs that work directly in specific communities.
- The relevant government institutions have made the designs of the specific projects, and there are agreements for the participation of these in the monitoring and evaluation of them. This approach has allowed almost all of the Program's resources to be invested in the community.
- Stakeholder participation at all levels of the program will ensure proper planning and execution of activities, consistent with the Program objectives, local development priorities and stakeholders.
- Management / advisory groups will be established at different levels of governance of the Program, to ensure the commitment and involvement of institutions and beneficiaries. This will help identify and prioritize measures to manage unforeseen risks, and facilitate decision-making. These structures can help to forge a joint vision of the implementation and progress on the ground. These groups include representatives of beneficiaries, partners, organizations, cooperatives, churches, clubs, etc.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme implementation.

Implementation Agreements

Shared Vision of the Program

The Program will be implemented by IDDI with support of the relevant public entities: Ministry of Environment (MoE) and INAPA, which will be the executing entities. Other private (Water Users Associations and SMEs), civil society organizations (PRONATURA, UAFAM, Loyola, Fundación H+D, etc.) and selected community groups have been involved at full-proposal level (especially ASOCARES), as well as independent professionals (i.e., contractors, consultants and advisors). As the Dominican Republic has established a regulatory and institutional framework for climate change, the Program activities have been aligned with country's priorities and its national commitments under the UNFCCC. This includes, but is not limited to, the Nationally Determined Contribution (NDC) of DR, which includes adaptation.

Management Agreements

The management arrangements of the Program have been designed to facilitate extensive linkages at all levels, from national-level policymakers to institutional-level operations down to communities and beneficiaries. In designing such arrangements, following criteria were taken into account:

1. Consistency with governance structures and mandates of agencies;
2. Accountability and transparency in fund flows to ensure cost-effectiveness;
3. Disbursement in a timely manner to ensure delivery within the stipulated timeframe;
4. Fostering participation and ownership; and
5. Mainstreaming and sustainability.

National Implementation Entity

The Dominican Institute of Integral Development (IDDI) will serve as the National Implementing Agency (NIE) for the Program. IDDI will have the technical and administrative responsibility for achieving expected outcomes/outputs as defined in the Program. Also, IDDI is responsible for:

- timely delivery of inputs and outputs and, in this context, for the coordination of all other third parties, including ministries, municipalities, decentralized agencies and other authorities.
- recruitment and hiring of Program personnel, staff and consultants, including subcontracting.
- monitor Program implementation and the achievement of the project outcomes and outputs, and ensure that the funds provided are used efficiently

Strategic and operational oversight and oversight to ensure compliance with Adaptation Fund's ESP will be the responsibility of the IDDI, as it's presented in the M&E section. Any implementation agreement for the Program should clearly recognize the separation between aspects related to implementation and execution. With respect to this matter, IDDI will meet the relevant guidelines of the Adaptation Fund.

Program Execution Partners

The Ministry of Environment will be an executing entity. In addition, the Ministry will act as the main government institution to facilitate linkages between the national and local levels, and to coordinate the activities of the Program at the local level. The Ministry is in a good position to do this, as it has offices and staff at the provincial level. The deliverables of the Program at community level will follow the channels of the current structure of the government of the Dominican Republic. Through the Vice Ministries for Forest Resources, for Soils and Water and for Protected Areas, the activities of re-forestation, conservation of the micro-basins, and/or ecosystem restoration will be coordinated.

The implementation of activities at community level will be the responsibility of the Community Committees / Community Groups (CC/CG), through the corresponding decentralized agencies, mainly INAPA which will also be in charge of the execution of the drinking water and sanitation projects, as well as the creation and formalization of the ASOCARES. In the places where the conditions exist, all the activities foreseen by CC/CG will be closely related to water users associations and the irrigation users committee (for the management of water resources and irrigation systems, supervision of infrastructure projects, identification of private contractors, etc.). In accordance with this approach, CC/CG will be strengthened to work with other decentralized agencies regarding to the Program.

Other governmental bodies such as INDRHI, Ministry of Public Health, Ministry of Public Works, Ministry of Agriculture, Ministry of Women, Ministry of Youth, etc., could be invited to support the executing entities if necessary and/or depending on the nature of the activity carried out. This measure not only helps strengthen the capacities of these institutions, but also reduces delivery risks.

Organization of the Program

Program Structure

The structure of the Program will be arranged as indicated in the following figure:

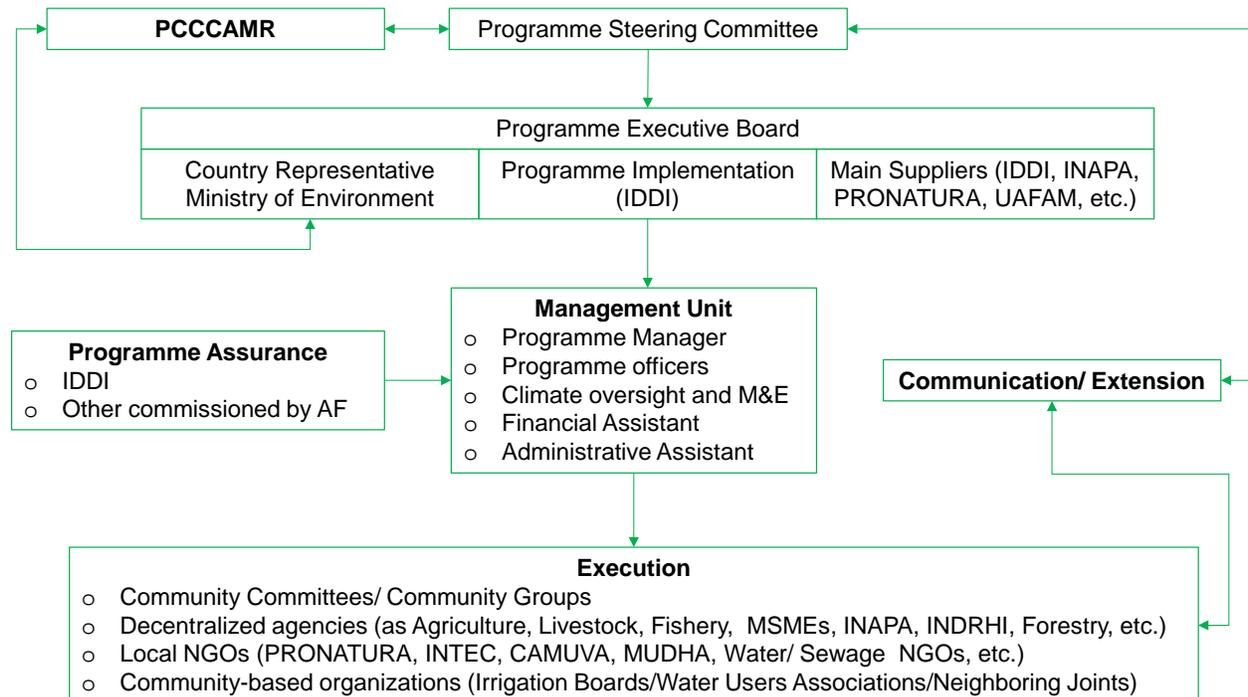


Figure 12: Proposed Program Structure

Steering Committee

The Program will create a Steering Committee composed of high-level representatives of IDDI, the Ministry of Environment and Natural Resources, INAPA, and key institutions such as the Government of San Cristóbal, INDRHI, MEPyD, local governments, universities and NGOs. This committee will be chaired by IDDI, and the Ministry of Environment will be permanent secretary. In addition, the membership of the PSC could include the governing ministries of the decentralized agencies that will participate in the delivery of the project's products at the community level, such as the Ministries of Public Health, Public Works, Industry and Commerce, Youth, Agriculture, of Women and others.

Table 13: Program Steering Committee Membership

Regular (with key responsibilities)	Occasional (according agenda/ interest)
- Ministry of Environment and Natural Resources	- Local Governments (according to agenda)
- IDDI	- Community based organizations
- INAPA	- Representatives of empowered women
- INDRHI	- Ministry of Public Health
- MEPyD	- Ministry for Women
- Governorate of San Cristobal	- Universities (UAFAM, INTEC, Loyola)
- PESC	- Local NGOS (ProNatura, Brightline)

PSC is constituted as a device to enforce decision-making process of the Program, especially to mitigate or avoid risk out of the IDDI control. PSC will meet every 3 months and the minutes of the meetings will be recorded and shared with all PSC members. The PSC will be governed by a *Terms of Reference*⁴¹, the *IDDI's Code of Conduct and Ethics* and the *IDDI's Conflict of Interest Manual*. To secure gender inclusion and representation, 50% or more of the PSC members shall be women.

Executive Board

The Program Executive Board (PEB) will be responsible for approving the key management decisions of the Program and will play a key role in ensuring technical quality, financial transparency and overall impact on the Program's development. The Board will be composed of high-level designated representatives of agencies with direct participation in the implementation of the Program (i.e., IDDI, INAPA, MEPyD, Governorate of San Cristóbal, MoE, etc.). Once the Program has been approved, the PEB will be formalized during the inception phase. At this point, a complete list of the PEB members designated by the institutions and their alternates will be included on the inception report. To secure gender inclusion, 50% or more of PEB appointed members shall be women.

Management Unit

IDDI will establish a Program Management Unit (PMU), which will be responsible for the implementation of Program activities. This Unit will prepare annual work plans, progress reports, and carry out the M&E plan of the Program. The PMU will be in charge of coordinating the activities under each component with the different government agencies / local organizations collaborating and participating in the Program execution. This unit will also be responsible for guaranteeing the appropriate participation of the stakeholders and the involvement, transparency and performance. The PMU grants that there will

⁴¹ The Terms of Reference for the Programme Steering Committee are included in *Términos de Referencia: Comité de Dirección (Steering Committee)*, elaborated by Brightline Institute. Available at: <https://goo.gl/xxcLhi>.

be effective coordination and efficiency, especially when activities depend of various actors for its execution. To secure gender inclusion, 50% or more of PMU members shall be women.

Provincial Committee

A Provincial Climate Change Adaptation Monitoring Committee will be created and empowered to provide overall guidance and supervision to lead the Program to its long-term sustainability. The PCCAMC will act as “representative” of Program beneficiaries and community-based organizations towards key government institutions. Its main activities will be related with the inclusion of the Program achievements and further steps within both central and local government investment plans. This include the National Budget and Public Spending Law, Participative Budget (a well-known/well established existing mechanism that promotes civil society participation into local governments investments to secure its plurality, efficiency, sustainability and transparency), further Multi-Year Public Sector Plan, and the further revision of the National Development Strategy in the long-term.

As well PCCAMC can work with other national and/or international relevant institutions (cooperation agencies, developed countries and/or multilateral donors) into develop further climate and development related projects in benefit of communities and organizations of the San Cristobal Province.

The PCCAMC final design, attributions and members will be defined after the inception phase. However, it's highly anticipated that it will include existing entities as the Governorate, local governments, MEPyD, COE, Ministry of Public Health, Ministry of Environment and Natural Resources, INDRHI, INAPA, Ministry of Agriculture, Ministry of Energy and Mines, and Ministry of Industry and Commerce. Private sector representatives from industrial, services, banking, and agriculture, and civil society organizations, as universities, NGOs, women, youths and communities will be included. Plan Estratégico de San Cristobal (PESC) has interest into host PCCAMC as they do with other provincial committees.

The Program will support the establishment of this committee initially, to serve the Program objectives but with a wider view of supporting the identification of other adaptation needs and to implement solutions in benefit of most vulnerable people and the long-term sustainable of the San Cristóbal.

Participate into PCCAMC does not implies to receive any payment from the Program.

Program Staff

Program Manager

IDDI will designate a Program Manager (PM), who will be appointed during the inception phase of the Program (after tor receive the AF approval and before to receipt the first disbursement for the implementation). PM shall be an empowered woman and will act as dedicated professional, designated for the total duration of the Program. The main responsibility of the PM is to ensure that the Program produces the results specified in the Program document, with the required level of quality, with efficiency and transparency, and within the time and cost limitations specified as a way of ensuring the integration of the Program into key institutions structures and process, the PM will be a senior official with at least 10 years of experience on climate change adaptation-related issues in Dominican Republic, and relevant experience with gender, environment, community-based adaptation, rural development, land use and planning, legislation and local governments. PM will be paid by the Program.

Technical / Support Staff

The PM will be supported by a central team of technical and support staff, who will form the Program Management Unit (PMU) within the IDDI to implement the Program activities, including daily program operations, management and reporting operational and financial transactions. The support staff may

include - typically - accountants, consultants, engineers, drivers, secretaries, etc. The PM will appoint the technical/support staff based on criteria of transparency and competitiveness, and respecting the aspects of equality, equity and gender. In correspondence with what is established by the AF and by the regulations in force, the personnel of the Program will be recognized their fundamental rights, their labor rights, and the provisions established by law. To increase the Program impact of the gender equity 50% or more of the Program Management Unit (PMU) members (hired and staff) shall be women.

Local Coordination and Implementation

Community Committees and Community Groups

At local level, Community Committees and Community Groups (CC/CG) will be established in each site to be intervened and/or where the individual projects will be executed. This will ensure adequate coordination and participation of key actors and representatives of beneficiary groups at local level. In the areas of intervention, the CC/CG will be responsible for the delivery of the project's products at the community level, through the appropriate government agencies, mainly INAPA, the Vice Ministry of Forest Resources, the Vice Ministry of Soils and Waters, and the Directorate of Climate Change.

To execute the activities and transfer the economic resources required to carry them out, IDDI will sign a Cooperation Agreement with the CC/CG, in line with its practices for the implementation of projects at community level. The PSC will have the responsibility to ratify the scope of said agreements. In case of not achieving with a particular CC/CG, IDDI may propose other projects. The nature and extent of the Cooperation Agreements are defined based on IDDI's experience in implementing community-based initiatives, which has been shown to encourage greater local ownership, ensure accountability, encourage local creativity and mobilize local counterparts for the Program implementation. It also ensures that the Program is integrated into community work, instead of being seen as an additional responsibility that does not align with its own development plans.

Under the proposed Program, key government agencies will work in coordination with the CC/CG to deliver the Program products, and to ensure that the institutional capacity for local adaptation action is built and it will survive beyond the Program lifespan. At the beginning of the program, the capacity of government agencies to determine the capacity gaps and the necessary support for the development of capacities to execute the program financed by the AF will be evaluated. Based on the findings, the Program, in coordination with MoE and INAPA, will strengthen the areas that must be built to achieve the Program's objectives (i.e., technical capacity, financial management and M&E, etc.).

The nature and extent of the Cooperation Agreements will follow IDDI experience on community-based initiatives, which have proven to create greater ownership, ensure accountability, encourage local creativity and mobilize local counterparts. It also ensures that the Program is integrated into community work, instead of being seen as an additional responsibility not aligned with its own development plans. After Program ends, the long-term sustainability of the extension services included in the Cooperation Agreements are granted by: (a) including extension agents within key institutions (i.e., MoE and INAPA) regular training programs for their staff; and (b) nominating outstanding community agents to hold permanent jobs -performing similar tasks- within the institutions. Also, training activities for extension services will enable them to provide on-going support to activities carried out by communities, so they can provide other services to future more resilient communities and other communities in other places.

The processes for the CC/CG are robust and mature throughout DR, and also the processes to establish institutional arrangements with them. However, in some communities there are already community structures that can play -under an appropriate dialogue - the role of the CC/CG. This is important

because it avoids efforts duplication. In order to strengthen the program's gender equity approach, empowered women represent 50% or more and youth represent 35% or more of the CC/CG members.

Community Agents

For the implementation of the Program, particularly in the management of water and forest resources in the intervention zones, it is essential the participation of community agents, who will provide technical assistance to the communities. Therefore, it is necessary to ensure that they have the necessary technical skills to implement the activities. Experience from *Small Grants Program* (UNDP-GEF-PPS), appoints institutional arrangements can be used related to the use of community agents.

The first option, and the preferred one, is to form a group of community agents from interested members of the community, beneficiary groups and local NGOs staff, through practical and concrete training in aspects that will focus -in principle- on the types of services that will be required by the Program interventions. The community agents will be empowered by the trainers (technicians of the Ministry of Environment and INAPA, and consultants that will be hired by the Program) to offer their services to beneficiary communities as it has been established for the Program. Officials from government institutions and Program staff will periodically conduct field visits to ensure that the services provided by community agents conform to national standards and / or good practices. This approach is inclusive, profitable, innovative and sustainable, since it builds capacities, transfers technology and empowers people to diversify their livelihoods and helps them meet their needs.

The capacity of the community agents will be established through the evaluation of their skills, as well as an evaluation of the capacities of target communities to assimilate the technical support they can provide. The Program will carry out an assessment of the functional, technical and other critical needs in support of the delivery of Component 1. It is expected that the capacity needs will vary significantly among communities, but common skills that will be developed under the Program would be appropriate practices in changing climatic conditions, community mobilization, and climate risk management in the field (i.e., water conservation techniques). The resources needed for the capacity development activities of the extension agents are budgeted within the components, as well as the budget for the local / external consultants who will carry out the training that will be provided.

The experience of consultations, meetings and field visits, indicates that there is a great interest on the part of local people to become community agents (at least based on their knowledge of the communities and their perception of the services that could provide to these) due to the opportunity to acquire new skills and more income. Some community agents even charge some fees for the services they perform for other members of the community (i.e., seedlings, fertilizers, etc.).

In cases in which the target community does not have the capacity to constitute community agents, an alternative option for the Program would be to include the extension service in the Cooperation Agreements to be signed between IDDI and CC/CG. Under these agreements, the plans, activities and operations are developed specifying in detail the type of community service required, the frequency of visits, the types of services to be provided, and an estimate of the costs of these will be provided. The deliverables and monitoring mechanisms can be included on appendix to the Agreements. Program will cover the additional cost to provide these services in form of a subsidy (DSA).

CC/CG in coordination with relevant government institutions will submit regular reports to PMU for monitoring, and to activate the release of funds to cover the incremental costs. The incremental emphasis is due to the fact that, as is established for the projects implemented under the National Implementation Modality (NIM), **the Program will not pay the professional services of personnel paid by the government, nor will it dedicate or provide them with any asset, amount, sum or other values.**

The MoE and INAPA, through their respective provincial offices in SC, will coordinate CC/CG in target communities, to ensure they learn from each other's experiences during the Program implementation. In addition, it is essential for the coordination of these institutions, to ensure that the Program can take advantage of economies of scale as much as possible during implementation. This is particularly crucial in cases where CC/CG could obtain a better price if they negotiate collectively (i.e., civil works, plant seeds, etc.). The provincial office of MoE will collaborate with the Provincial Committee for Monitoring Adaptation to Climate Change (Output 2.2), giving opinion, information and advice.

After Program ends, INAPA and the Ministry of Environment and Natural Resources will provide regular training/updates to community agents on the learned techniques to keep –or even increase- their expertise. In the case of the Ministry of Environment, this training program will be the same scheme utilized to train/update their local staff on aspects as forest fires, solid waste/recycling, ecoturistic guides, plant nurseries, etc., and the training-to-trainers scheme established by the Environment Education Department. In the case of INAPA, these such training will follow their capacity development program, which include commercial management, secretarial techniques, customer support, draft reports, public health, water-works maintenance/ reparations, corruption avoiding, team work, etc.⁴²

The experience of consultations, meetings and field visits, indicates that there is a great interest on the part of local people to become community agents (at least based on their knowledge of the communities and their perception of the services that could provide these) due to the opportunity to acquire new skills and income. Some community agents even charge some fees for the services they perform for other members of the community (i.e., seedlings, fertilizers, etc.). To maximize the Program impact on equity approach, selected people to perform as community agents (and/or to receive training to play this role) will be empowered women or youth (under 35) from the community.

Local NGOs

A Program like this one cannot rely solely on government system. Fortunately, local NGOs are rapidly acquiring capacities to execute climate, forestry and environmental projects, in collaboration with communities and international agencies. The strategy of the Program will be to complement the government and NGOs with new and/or existing capacities (in other sectors) to create a group of community agents. This has proven to work in the Dominican Republic, based on the experiences of local NGOs (i.e., the Disaster Risk Management Programs and the Small Grants Program). Regarding this aspect, it is expected that, according to their mission, experience and availability, organizations as PRONATURA, UAFAM, Fundación H+D, and Loyola, could achieve some leadership in support of water management (Component 1) and capacity development (Component2); while local organizations (as CAMUVA, MUDHA, and ASOCARES) can provide services and support at the field level.

Executions and Guarantees

Program Guarantees

IDDI will support the implementation of the Program by assisting in the monitoring of program budgets and expenses, hiring Program staff, consulting services, and subcontracting and acquiring equipment and materials at the request of the PMU. Regarding the technical aspect, IDDI will monitor the progress of the implementation of the Program and the achievement of the outcomes/outputs. Several designated program officers will be assigned to the PMU to provide financial and technical support and

⁴² Other training can be provided by the Ministry of Agriculture, according to its regular programmes to assist to communities and farmers (in agro-forestry systems, for example). More details available at: <https://goo.gl/vBpG4U>.

implementation services. External consultants can be included if necessary. Program audits it will follow international financial rules and regulations and the applicable audit policies, transparency and general efficiency will be increased, and it will be ensured that the resources have been correctly invested.

Program Execution

Table 14: Program Execution Expenditures (in USD)

DESCRIPTION	Y1	Y2	Y3	Y4	Total
Program Manager	48,000	49,056	50,135	51,238	198,429
Climate Specialist	24,000	24,528	25,068	25,619	99,215
Financial Specialist	24,000	24,528	25,068	25,619	99,215
Accountant	19,200	19,622	20,054	20,495	79,372
Technical Official	15,000	15,330	15,667	16,012	62,009
Administrative Official	15,000	15,330	15,667	16,012	62,009
Driver	8,400	8,585	8,774	8,967	34,725
Furniture	9,736	-	-	-	9,736
Computers	18,000	300	300	300	18,900
Miscellaneous supplies	3,500	1,600	1,600	1,600	8,300
Vehicle	40,000	2,500	2,500	2,500	47,500
M&E + Audits	24,000	15,000	17,500	20,000	76,500
TOTAL	248,836	176,379	182,333	188,362	795,910

Notes: (1) Social charges are not included.

(2) Section D provides a detailed breakdown of the costs for M&E.

Safeguards for ESMP

The MoE is the authority responsible for overseeing and enforcing the national Environmental Impact Assessment (EIA), per mandate of the General Law on Environment and Natural Resources. The Ministry of Environment regulates the EIA process for both government and the private sector initiatives (Law 64-00, chapter IV, art. 41, par. II). The EIA process conducted by IDDI generates recommendations and alternatives within the EIAS. The assessment of EIA and the recommendations included are reviewed by the Ministry of the Environment and Natural Resources, and a final decision is taken by the higher level of such entity. As the IDDI is the Program proponent, the EIA follows the standard procedure, however the Ministry of Environment delegates, or shares, certain responsibilities of the EIA process that may be subject to bias (in this case, the IEAS has been submitted to secure the Program does not results in significant negative impacts and is being reviews by the Ministry). This is the case for the Adaptation Fund project, where MoE is serving as Executing Entity and key partner of NIE.

The arrangements and responsibilities for managing the EIA process are summarized below. These roles and responsibilities are supported by several budget lines which include *inter alia* followings:

- A budget of USD 30,000 (Project Formulation Grant) was allocated to contract independent experts to conduct the basic EIAS and other studies required to draft the full Program proposal.
- Approximately USD 76,000 for Monitoring and Evaluation (M&E) including EIA provisions and USD 99,215 for hiring specialist on adaptation measures.
- Other lines can be identified for independent oversight EIAS within their respective physical interventions. All expenses shall be reported according M&E (and per any legal agreements).

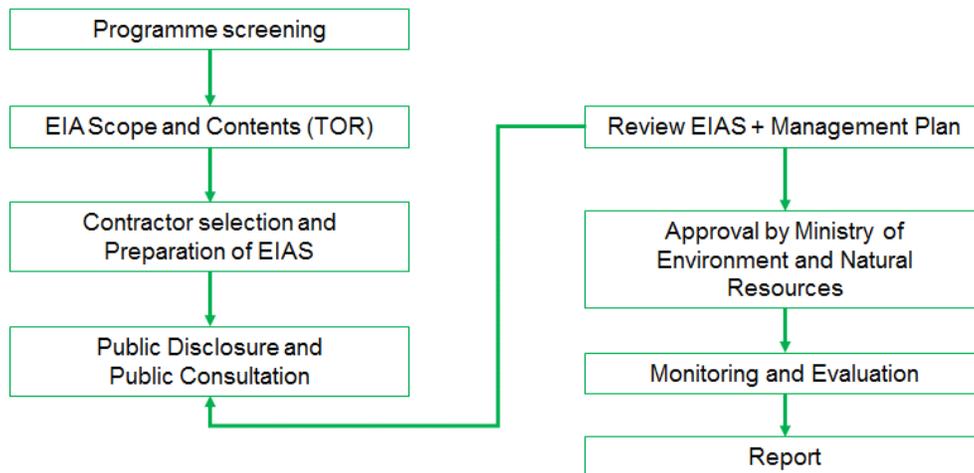


Figure 13: EIAS Process for the Program

The AF budget has allocated funding so that financial resources are used by IDDI to hire third-party's experts. These experts will provide technical reports to the Ministry of Environment and Natural Resources, to the Committees, and to Program partners if counts with IDDI approval. Final drafts of Program EIAS has been completed and was reviewed by IDDI and submitted to the Ministry of Environment and Natural Resources and INAPA (in English and Spanish) for their approval (June)⁴³.

B. Describe the measures for financial and project / programme risk management.

Program Risk Management

Risks Related to Program Development

The key risks underlying the Program have been analyzed during the formulation phase in relation to the sites targeted by the Program. Main risks derived from Programme development are described below.

Component 1: Community level implementation of climate resilient water resource management

After complete Output 1.1. (Community plans), to implement of Output 1.2 (resilient water supply) and Output 1.3 (re-afforestation activities) an individual EIA will be realized by INAPA and the Ministry of Environment (with support of PMU and external consultants), in order to be produce all interventions final technical drawings, budget and technical specifications. Both institutions are committed to approve their respective work plan before to start the physical interventions (as to build new infrastructures).

The above figure defines the steps consistent with identified sub-projects approach. The EIA and ESMP will be implemented in accordance with the EIAS and ESMP and the Adaptation Fund's 15 ESP principles. The EIA and ESMP will screen for all 15 principles of the ESP using specific checklists (as is discussed later). All these precisions are reflected in the draft Terms of Reference for the EIAS.

The EIA will identify any potential risks for final designs of the water works and re-afforestation interventions mainly to avoid involuntary resettlement, whether physical or economic displacement. Under the Programme, any involuntary resettlement is ineligible. Additionally, affected persons or communities have the right to refuse land acquisition or restrictions on land use. These rights shall be

⁴³ The EIA (which cover environmental and socioeconomic impacts of the Program and the measures to avoid it) is included in *Estudio de Impacto Ambiental*, elaborated by Brightline Institute. Available at: <https://goo.gl/xxcLhi>.

communicated through public notices, on the IDDI website, and by the staff and consultants of the Program. Affected community members will be notified of the grievance mechanism that is available to them (defined below).

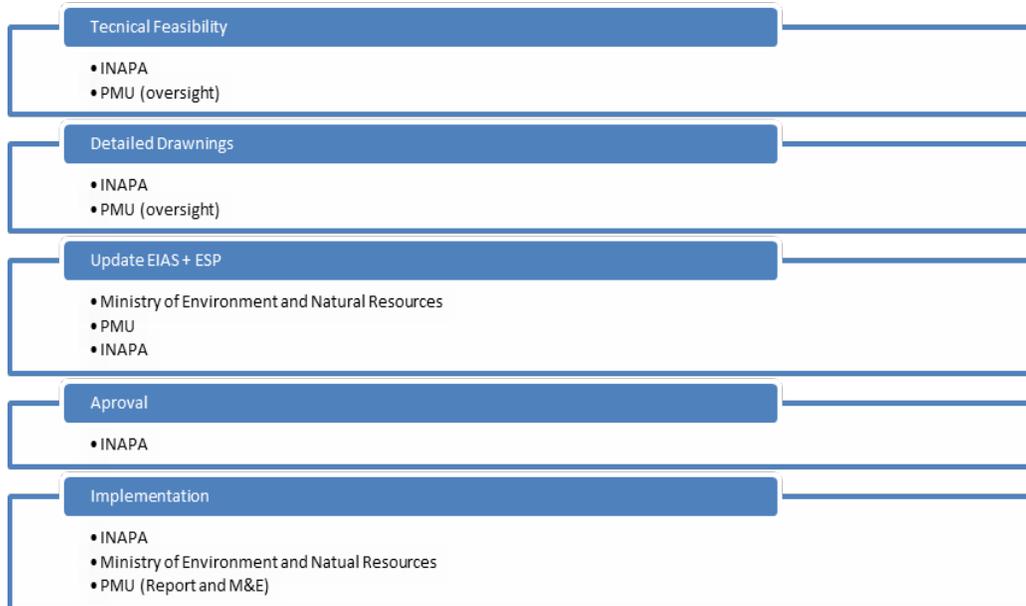


Figure 14: Process for Risk Management for Component 1

The ESMP and Monitoring Plan will detail the monitoring requirements for pre-, during- and 2 years’ post-implementation. This will include risk identification and recommendations to ensure the documented implementation of mitigation measures; long-term minimization of negative impacts; and maximization of positive impacts. Full costing of the Monitoring Plan implementation will be included, and indicators used for monitoring will be disaggregated by gender. The EIA and ESMP will include public disclosure, community consultations, and the outputs shall be appraised.

Component 2: Capacity building and capacity development to manage climate change-related risks

After to develop the Program communication strategy, any potential community resistance to the Program interventions, will be avoided through an adequate approach to aim an early and consistent stakeholder involvement and engagement, and permanent hearings and data sharing. Regarding this matter, the EIAS and ESMP just will be updated to include indicators as women reached directly by the Program, visits to website (including material consulted or downloads), and dissemination activities related learning platforms, IWRM, and adaptation. Most of this work will be developed by third parties (as universities and local NGOs) under the PMU supervision and with the participation of communities.

In the case of PCCMAC, its development and performance will be monitored. However, the impact of this provincial committee will be promoted as it serve to mainstream ESP to other aspects of the live of San Cristobal and its linkages with greater levels of decision-making in the country.

Summarizing: the Program includes sub-projects, which have been identified by The Ministry of Environment and Natural Resources, INAPA, IDDI, and communities. In case of Component 1, community-based water management plans shall be in place before the design the final infrastructure according to climate induced stress and the needs of the community. For Component 2, appropriate knowledge management and dissemination of learned lesson and best practices, will depend on the

communication strategy adopted, the effectiveness of relevant media, and buy-in of target public.

Risks Related to Program Implementation

Key risks underlying the Program have been analyzed during the formulation phase in connection with the targeted areas. Over the course of the Program, a conventional risk log will be regularly updated in intervals of no less than every six months in which critical risks to the Program will be identified. With respect to this aspect, "templates" used by UNDP or the World Bank can be used to record risks.

The following table summarizes the main risks of the project.

Table 15: Program Risks and Risk Management

Identified Risks	Type	Level	Mitigation Measures	Responsible
Lack of coordination, collaboration and cooperation between the executing agencies.	Institutional	Medium	<ul style="list-style-type: none"> – Operational agreements between the implementing partners and the relevant agencies with an adequate definition of roles and responsibilities. – Dialogue and consensus building. 	IDDI, MoE, INAPA, INDRHI, Government
Changes and staff turnover in local implementing agencies may affect the schedule and / or program activities.	Institutional	Low	<ul style="list-style-type: none"> – Training. Information and communication. – Inter-institutional agreements that provide a framework to appointment of qualified staff – Awareness among authorities. – Strengthening of target groups for the implementation of activities. 	IDDI, local institutions
Lack of acceptance and participation of key stakeholders and target groups, or differences between groups or stakeholders can weaken and delay activities.	Social	Medium	<ul style="list-style-type: none"> – Capacity building, training and awareness. – Participatory processes to promote commitment and inclusion of all interested parties. – Representation of key groups and stakeholders in community committees and field activities. – Mediation in case of conflicts. 	IDDI, local institutions, private sector
The instruments developed by the Program could take more time to provide tangible results than their duration.	Financial	Low	<ul style="list-style-type: none"> – Prioritization of activities that can be designed and implemented within the Program lifespan. – Inclusion of long-term research in institutional work plans. – Awareness and lobbying among the authorities for the approval of incentives / licenses (if any) within a period that ensures a sufficient schedule for on-site piloting. 	IDDI, MoE, INAPA, INDRHI, Governorate
Politicians prioritize economic benefits over social and / or environmental benefits.	Social	Low	<ul style="list-style-type: none"> – The project activities explicitly integrate the needs of social, economic and environmental development in an integrating framework of climate resilient agriculture and water 	IDDI

			<p>management.</p> <ul style="list-style-type: none"> – The project will give priority to low-cost resistance strategies that demonstrate the impact on revenues. 	
Congress is discussing a new law that regulates the use of water resources.	Social	Medium	<ul style="list-style-type: none"> – This risk is minimized with greater coordination and communication with the Ministry of the Environment, which coordinates the environmental policy between the different levels of government. 	IDDI, MoE, INAPA, INDRHI
The lack of information at the local (and reduced) level on many aspects of climate change.	Technical	Medium	<ul style="list-style-type: none"> – Prepare specific studies on specific areas and / or at the community level with respect to the threats of climate change. – The project foresees the need to start with a short-term evaluation of the priority activities and interventions. 	IDDI
Delays at the start of the Program have an impact on the achievement of outputs and results and reduce the scope to deliver the Program as described.	Financial	High	<ul style="list-style-type: none"> – Develop a detailed work plan to guide the start phase of the Program. 	IDDI
Insecurity in specific areas (ie, robberies, strikes, etc.) can jeopardize the implementation and monitoring of the Program.	Social	Low	<ul style="list-style-type: none"> – Cooperation with local communities and structures. – A good cooperation with the leaders of local organizations for the execution of activities. – Use of social networks to create alerts about social conflicts and / or security problems. 	IDDI, local governments
A poor understanding of the objectives by the Program team.	Tecnical	Low	<ul style="list-style-type: none"> – Strong participation of leaders, especially in executing agencies and key actors. – Support of national experts. – Training adapted for target groups. 	IDDI
Low mobilization of the target group due to a poor understanding of the problems of climate change.	Social	Low	<ul style="list-style-type: none"> – Greater collaboration with target communities. – A participatory approach. – Sensitization to the effects of climate change at different levels. 	IDDI, MoE, INAPA, INDRHI, Governorate
Lack of capacity to fulfill financial commitments, and in particular of resources by the partners in the implementation of the program.	Financial	Medium	<ul style="list-style-type: none"> – A continuous dialogue will be established before and after the signing of the Program document among the program partners. – Sufficient allocation within the detailed proposal and 	IDDI, MoE, INAPA, INDRHI

			<p>cooperation agreements made to develop teams with sufficient capacity (both in terms of size and technical capacities), which are sufficiently integrated in the executing agencies.</p> <ul style="list-style-type: none"> – Establish realistic objectives for the contributions of the partners in the first instance 	
The lack of sufficiently qualified partners.	Technical Institutional	Low	<ul style="list-style-type: none"> – Capacity building. – Selection and evaluation of partners, needs assessments. – Collaboration with communities at a decentralized level 	IDDI, CFSP, Governorate

Program Sustainability

Summarizing: The activities proposed by the Program will help DR to create community-based water management plans for SC, and will incorporate them into process of MoE, INAPA, and other relevant institutions. These plans include 30 rural communities that are highly vulnerable due to factors related to poverty and climate change. The construction of robust IWRM plans is important for the sustainability of the activities implemented in Component 1 (i.e., greater water supply or diversification of income through practices such as agroforestry). The appropriation created through the participation of local communities and the capacities development at community level for the planning and management of water resources further guarantees the sustainability of the actions of the Program. The prospect of participating in activities that produce income is a key asset to involve communities and organizations as beneficiaries. The Program emphasizes the inclusion of long-term sustainability measures since its design.

Statement on Program Risks Management

After analyzing the potential impacts of the Program, as well as the magnitude of the main risks faced by the initiative. It is concluded that both the Program, in general, and the individual projects are viable from the point of view of their contributions to reduce climate vulnerability and increase the resilience of the target communities. This statement is extensive to the technical, financial, environmental and social aspects of the program, as well as its cost-effectiveness and general sustainability.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

Management of E&S Risks

According to AF ESP, The Program has a risk rating Category B. Therefore, it can have minor (or easily reversible) environmental, social or gender impacts. These impacts and risks have been evaluated during the preparation of the Program Environmental and Social Management System (ESMS), which includes an ESIA (Environmental and Social Impact Assessment) and an ESMP (Environmental and Social Management Plan). Both reports are attached to this document as Appendix 1 and Appendix 2.

The program includes clearly identified interventions in each of its components. These sub-projects, mean interventions defined in the approval stage of the Program. For example, in the case of Component 1, community water management plans must be made before the final design of the water

infrastructure, in accordance with the stress induced by the climate and the needs of the community. For Component 2, the appropriate management of knowledge and the dissemination of lessons learned and best practices will depend on the communication strategy adopted in the context of the Program, the effectiveness of the relevant media and the acceptance of the general public.

The ESMP focuses on process-oriented risk management, where the mechanisms are incorporated into the program's implementation to ensure that rigorous risk assessment and management measures are applied to each intervention, as they are defined, approved and implemented the relevant activities. Because of this, the ESMP has been designed to facilitate a pre-inception phase of the three-month program, to facilitate the following activities prior to the implementation of the project without default. This means that, once the proposal is approved by the AF, the IDDI and the participating institutions will take a period of up to three (3) months to define or agree on any aspect not fully defined (at the proposal level) so that the Program start the phase of inception when receiving the funds of the AF.

Screening for Interventions

During the implementation of the Program, a checklist will be used for the regular examination of the components, according to the aspects described in Section II.A (Program Components). An explanatory document has been prepared for training and capacity building purposes, which is included in the ESMP. This document attempts to apply the 15 principles of AF ESP to all interventions, in a way that partners and beneficiaries can easily understand better what they are trying to achieve and the AF objectives.

Table 16: Checklist for Compliance with ESP

Principles of the ESP	Activity			
	Existing Risk	Activity with Positive Impact	Activity with Negative Impact	Explanation
Compliance with the law				
Access and equity				
Marginalized and vulnerable groups				
Human rights				
Gender equity and women's empowerment				
Basic labor rights				
Indigenous populations				
Involuntary resettlements				
Protection of natural habitats				
Conservation of biological diversity				
Climate change				
Prevention of pollution and efficiency of resources				
Public health				
Physical and cultural heritage				
Land and Soil Conservation				

Non-Eligible Activities

The funds provided by the AF for the Program will not be used directly or indirectly to:

- Operational or administrative costs of the ministries, directors, departments or agencies of the government of DR nor the government of any other country;
- Salaries for executive officers and core staff of non-governmental organizations, except if such salaries are related to services performed specifically for achieving the Program objectives;
- Activities related to the extraction or depletion of non-renewable natural resources (including, among others, forests, aggregates, beach sands, and oil & gas);
- The resettlement of persons, their means of subsistence, or the elimination or alteration of any physical or cultural heritage under any circumstances; or
- Any other use that is considered incompatible with the Law and / or the legal framework.

This list of exclusionary activities may be amended upon the recommendation of the Program Steering Committee, or by resolution of the Ministry of Environment and Natural Resources.

Public Consultations

Any potential resistance of the communities to the Program interventions will be avoided through a communication strategy to aim an early and consistent stakeholder involvement and engagement, and permanent hearings and information sharing. The following table provides for an indicate timeline and frequency of community consultations during project implementation. Following table provides a reference calendar, and establishes the frequency of community consultations during the Program life.

Table 17: Timeline for Community Consultations

Frequency	Responsible	Purpose	Expected Outputs
3-month pre-inception phase	IDDI and program partners	Training Program tailored to the needs of the community members and project partners.	Network of validated project partners
Start of the program	IDDI	To gather baseline socioeconomic information.	Baseline data
As necessary and at least every 3 months (rotating communities)	IDDI	Discuss any impacts of interventions, challenges, schedule, review the 15 ESP principles; and notify the public about the grievance mechanism.	Program interventions and activities impacts Assessment.

The PMU will ensure that marginalized and vulnerable groups in the targeted areas are included in public consultations, holding smaller focus groups as necessary, including: the disabled, single mothers who are heads of households, the elderly including those who on a fixed income (pension, if any), small children and migrants of questionable immigration status and their families. The Program stakeholders and community consultations should follow the *Guidelines for Information and Public Participation* of the MoE. This document is publicly available and includes the step-by-step guidance and for capture, analysis and reporting of feedback In addition to the existing law for free access to public information, in DR there is a culture of requesting government intervention for cases in which projects violate people.

Grievance Mechanism

MoE has an established complaints procedure, which will be the Program Grievance Mechanism. This is covered in the Law 64-00 (General Law of Environment and Natural Resources). Complaints pertaining to the Program activities implemented with AF resources will be addressed to executives of the PMU.

The public can submit complaints via the following channels:

- Ministry of Environment website: <http://ambiente.gob.do/denuncias-ambientales/>
- By email to: despacho@ambiente.gob.do
- In writing to: Ministry of Environment and Natural Resources
Ave. Cayetano Germosén esq. Gregorio Luperón
El Pedregal, Santo Domingo.
- By Phone: Monday to Friday: 8am to 4pm
(+1) 809-539-6400; (+1) 809-200-6400 (free)
- By social networks: Whatsapp: (+1) 849-356-6400
Twitter: AmbienteRD
Instagram: AmbienteRD
Facebook: AmbienteRD

Depending on the nature of the complaint, or if for any reason the complainant is unwilling to make a report to the Ministry of Environment and Natural Resources, it can submit a complaint through the correspondent municipality. When a complaint is communicated, following information is recorded:

- The nature of the problem;
- The location of the problem;
- When the problem occurred (date and time);
- Who or what is the perceived source of the problem;
- Any information or evidence -particularly eyewitness, documents, photographs, or videos
- Water or soil sample (evidence must be credible and relate directly to the incident reported) and
- Optionally, the contact information of the complainant: Name, Phone number, ID, etc.

Complaints will be handled by correspondent staff at the Ministry of Environment and Natural Resources, who will investigate the complaint. This process usually includes an on-site visit for investigation. Depending on the case, the Ministry may invite other relevant agencies (legal, coercive, technical, etc.) to participate in the investigation. During the investigation, individuals or agencies responsible for action to correct the issue will be identified. The Ministry will produce a report of its findings and recommendations and action if necessary. Complainants may request for a copy of the reports related to the complaint, as establishes the Freedom of Information Law.

Additionally, the Adaptation Fund Board Secretariat can be contacted directly anytime regarding any grievance or complain related to the Programme. Following contact options are available for targeted communities, projects beneficiaries, local authorities, stakeholders and any other third party:

- By email to: afbsec@adaptation-fund.org
- By writing to: Secretariat at the following address:
Adaptation Fund Board Secretariat
c/o Global Environment Facility
Mail stop: N 7-700
1818 H Street NW
Washington DC 20433
USA
- By Phone: Monday to Friday: 9am to 5pm
+1.202.458.7347 (v)
+1.202.522.3240 (f)

Adequate support and guidance in Spanish language will be provided.

Risk Registry

The integral risk management strategy is an integral part of the Program. The Program Management Unit (PMU) will establish and maintain a "Risk Registry" to record, track and evaluate risk management during the implementation of the Program. To increase the efficiency and transparency of the implementation, this will be evaluated and updated quarterly through the four-step process:

1. Filling and updating of the risk register by the PMU and IDDI (shared with the PEB quarterly);
2. Risk assessment and classification of interventions by beneficiaries, the PMU and IDDI;
3. Risk assessment by PEB, which will recommend risk mitigation and management measures for IDDI;
4. IDDI will work with the PMU and beneficiaries to integrate additional mitigation measures into the design and execution of project activities.

An independent external audit, conducted by a recognized firm, will be conducted annually.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

M&E Arrangements and Budget

M&E Arrangements

The Program approach to monitoring, reporting and evaluation is explained in its Technical Manual. The results of Monitoring and Evaluation (M&E) will be to provide project updates, risk assessments and any Program change required. In summary, M&E will provide answers, in a systematic way, on the progress and success of the Program and its partners in achieving the desired outcomes and outputs. This includes community's progress on climate adaptation.

Given the nature of the Program, PMU will contract the services of a M&E officer to be responsible for data collection, compilation, and project monitoring and reporting, as well as operational support and additional assistance in the design and implementation throughout the Program, adjusting projects outcomes and activities according to a changing context. It is important to remain flexible to and learn from inevitable unforeseen in the operational landscape using an adaptive management approach.

Reporting will take place on a quarterly and annual basis in accordance with AF standards. The monitoring and reporting plan involves an iterative approach to collecting data and improving the Program design and its proposed interventions. The Program will start following and inception workshop with key stakeholders, IDDI, PMU and M&E officer assigning and clarifying the Program purpose, roles and responsibilities, and addressing any outstanding barriers.

There are specific budget lines dedicated for M&E to ensure that the necessary resources are allocated to execute the M&E framework. The Program comprehensive M&E framework will meet the Adaptation Fund's policy, and drawing on the IDDI safeguards formalized under the Accreditation process.

M&E Budget

The costs associated to implement the M&E system are detailed below.

Table 18: Costs Associated with Implementing M&E

Type of M&E Activity	Responsible	Budget (Excluding PMU time)	Timeframe
Initiation Workshop and Report	- Program Manager - IDDI	Estimated Cost: \$ 5,000	Within the first 2 month after Program start up.
Measurement of means of verification of Program expected results.	PM will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	Estimated Cost: \$ 10,000 (to be finalized in inception phase and workshop)	Start, mid and end of Program (during evaluation cycle) and annually if required.
Measurement of means of verification for Program progress on output and implementation.	- Supervised by PM - Program Staff	Estimated Cost: \$ 5,000 (to be determined as part of the annual work plan's preparation)	Annually prior to the definition of annual work plans.
Periodic status/ progress reports	- Program Manager - Team Program	None	Quarterly
Mid-term Evaluation	- Program Manager - Program Team - Key government institutions and partners - External consultants (i.e., evaluation team)	Estimated Cost: \$ 11,000	At the mid-point of Program implementation.
Final evaluation	- Program Manager - Program Team - Key government institutions and partners - External consultants (i.e., evaluation team)	Estimated Cost: \$ 11,000	At least 3 months before the end of Program.
Program terminal report	- Program Manager - Program Team - IDDI - Local consultant	Estimated Cost: \$ 6,000	At least 3 months before the end of the program.
Audit	- Program Manager - Program Team - IDDI - External consultants (i.e., audit team)	Estimated Cost: \$ 17,000	
Visits to field sites	- Program Manager - Program Team - Key government Institutions and partners - IDDI	Estimated Cost: \$ 11,500	Program lifespan.
ESTIMATED TOTAL (USD)		\$ 76,500	

At the beginning of the Program, basic indicators will be established to evaluate the impact of the interventions in each community. The PMU will collect the baseline data during the 3-month pre-inception phase. The indicators for the results-based monitoring framework are shown below.

Performance criteria / Standard: Environmental and Social / Gender Risk Management

Component 1

1. Minimize the removal of vegetation in the intervention areas;
2. Minimize contamination by solid waste, oils and agrochemicals;
3. Improvement in the quality of water available to communities;
4. Decrease in diseases related to water and related to mosquitoes;
5. Avoid impacts on flora and fauna and communities;
6. Do not include exotic or invasive species for reforestation;
7. Not cause any involuntary resettlement, be it a physical or economic displacement;
8. Equal participation of men and women in the design and improvement of water infrastructure; and
9. Participation and participation of women and vulnerable populations.

Component 2

1. Capacity building and capacity development;
2. Training on best practices for water management;
3. Training to create more resilient livelihoods through better water management;
4. Dissemination of the results / impacts of the program; and
5. Establish long-term platforms to incorporate the results of the Program.

The M&E of the benefits and effectiveness of the projects will be maintained beyond the duration of the Program, through the creation of more capacities within MoE, INAPA, and other government institutions (including support to develop new internal processes). Relevant to this, agreed strategic indicators are:

1. Development of water management plans at the community level;
2. Impact of water resources and livelihoods on unplanned development;
3. Groundwater and surface water quality (physical-chemical and microbiological); and
4. Incidence of diseases related to water, sanitation and climate change.

A comprehensive Results Framework of the Program below (Part III, Section E) defines success indicators for Program implementation as well the respective means of verification. The table also indicates where gender-disaggregated data, targets and indicators will be collected. A Program M&E system will be established, based on these indicators and means of verification. An assessment of baseline situation and indicators at household levels at the beginning of the project completed through households

surveys at mid-term and project termination will allow the monitoring and assessment of project impacts in livelihoods and confirm the cost effectiveness of the options included for this project.

Baseline data will be obtained from ENHOGAR⁴⁴. Moreover, NGOs that have projects in the targeted areas typically collect data as income, demography and economic activities. In sites where baseline data do not exist, it will be collected as part of the Program's own baseline setting under the proposed M&E.

- E. Include a results framework for the project proposal, including milestones, targets and indicators.

Table 19: Program Results Framework

Indicator(s)	Baseline	Target	Source of Data
Outcome 1: Implemented climate resilient management of water resources by small communities of San Cristóbal			
Number of communities in which the management plans have been developed and are implemented.	There are no community management plans. Lack of coherent and planned water management activities in the communities.	Community water management plans implemented by 30 small rural communities.	Program progress/ technical reports
Number of operative infrastructure projects for water supply and storage implemented by communities.	Communities have limited infrastructure projects for water supply and storage.	30 communities, benefiting at least 24,300 people (of which 50% are women).	Program progress/ technical reports
Number of measures for water conservation implemented.	There are some individual and non-inclusive measurement systems for water conservation.	Forest systems implemented on the site, which supply water to 2,722 hectares.	Program progress/ technical reports
Result 2: Increased technical capacity of communities and institutions to assess impacts, vulnerability and adaptation needs according their respective competences.			
Number of training materials produced and utilized in training	Community members and their households remain vulnerable to climate change.	Availability of materials on best practices for climate-resilient water management.	Progress of the program / technical reports
Number of provincial committees for adaptation to climate change.	Reduction of the link between key institutions and communities regarding climate change.	A Provincial Committee to Monitor Adaptation to Climate Change, fully established in San Cristóbal.	Progress of the program / technical reports
Learning platform created under the operating program.	Communities and institutions do not work collaboratively to adapt to climate change.	A collaborative platform increases community participation in climate change adaptation.	Progress of the program / technical reports

⁴⁴ DR National Multipurpose Household Survey (ENHOGAR) covers use of information and communication technologies, public safety and crime, international migration and remittances, ownership of livestock, and agricultural production. All information produced by ENHOGAR is publicly available at: <https://goo.gl/h9WqxJ>.

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Table 20: Program alignment with AF Results Framework

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator
Improve resilience and capacity to adapt to climate impacts and risks on water resources in San Cristóbal.	Number of communities with capacity to adapt to climate risks	Outcome 2: Strengthening institutional capacity to reduce the risks associated with socio-economic and environmental losses induced by climate.	2.1. Number and type of specific institutions with greater capacity to minimize exposure to climate variability risks.
Improve resilience and capacity to adapt to climate impacts and risks on water resources in San Cristóbal.	Number of communities with capacity to adapt to climate risks	Outcome 3: Greater awareness and ownership of adaptation processes and reduction of climate risk at the local level.	3.1. Percentage of rural beneficiary population that knows the anticipated adverse effects of climate change and the appropriate responses.
Improve resilience and capacity to adapt to climate impacts and risks on water resources in San Cristóbal.	Number of communities with capacity to adapt to climate risks	Outcome 4: Greater capacity for adaptation within the relevant development and natural resources sectors.	4.2. The physical infrastructure was improved to resist climate change and stress induced by variability.
Improve resilience and capacity to adapt to climate impacts and risks on water resources in San Cristóbal.	Number of communities with capacity to adapt to climate risks	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in specific areas.	6.1 Percentage of households and communities that have more secured (increased) access to livelihood assets.
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator
Outcome 1: Community-level implementation of climate resilient water resource management activities	Percent of the population with improved water management practices that are resilient to the impacts of climate change in the selected areas.	Output 3: Specific population groups participating in awareness-raising activities on risk reduction and adaptation	3.1.1 Number and type of actions or risk reduction strategies introduced at the local level.
Outcome 1: Community-level implementation of climate resilient water resource management activities	Percent of the population with improved water management practices that are resilient to the impacts of climate change in the selected areas.	Output 4: vulnerable physical, natural and social assets strengthened in response to the impacts of climate change, including variability	4.1.2. Number of physical assets strengthened or built to withstand the conditions derived from climate variability and change (by asset types)
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	Number and type of targeted institutions with increased capacity to minimize exposure to climate variability risks	Output 2.1: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	2.1.1 Number of staff trained to respond to, and mitigate impacts of climate-related events

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

See Annex 2

H. Include a disbursement schedule with time-bound milestones.

	Upon signature of Agreement	1st Disbursement	One Year after Project Start	Year 3	Year 4	Total
Schedule date	Jun-19		Jun-20	Jun-21	Jun-22	
Program funds		718,673.46	2,818,412.18	3,757,882.91	1,878,941.45	9,173,910.00
Implementing Entity Fee	233,934.71	42,761.07	167,695.52	223,594.03	111,797.02	779,782.35
Total	233,934.71	761,434.53	2,986,107.71	3,981,476.94	1,990,738.47	9,953,692.35

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government⁴⁵ *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Ing. Pedro García Brito, M.Sc Director of Climate Change and CDM Ministry of Environment and Natural Resources, Dominican Republic +1 809-567-4300 / +1 809-807-1116 pedro.garcia@ambiente.gob.do	Date: July 18, 2018
---	---------------------

B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (National Development Strategy, National Communications to UNFCCC, National Policy on Climate Change, and Dominican Republic's National Action Plan for Climate Change Adaptation) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
David Luther, Executive Director, Dominican Institute of Integral Development -IDDI Implementing Entity Coordinator 	
Date: December 30, 2018	+1 809 534-1077 dluther@iddi.org
Project Contact Person: David Luther (Executive Director)	
Tel. And Email: +1 809 534-1077 dluther@iddi.org	

⁶. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

@AdaptationFund Project Proposal Development

Enhancing climate resilience in San Cristóbal Province,
Dominican Republic – Integrated Water Resources
Management and Rural Development Programme

#ClimaSanCristobal

Environmental and Social/Gender Impact Assess-
ment

Annex 7. Environmental and Social/Gender Impact Assessment

Prepared by:

Brightline Institute, Inc.

Dated on: July 30th, 2018

Commissioned by:

Instituto Dominicano de Desarrollo Integral (IDDI)

Proyecto #ClimaSanCristobal

February 4th, 2019

Content

Executive Summary	iv
1. Scope and Methodology	1
1.1 Methodology	2
2. Programme Description	3
2.1 Approach	4
3. Policy Approach	5
3.1 National Legislation	5
3.2 International Agreements	6
3.3 National Policies	8
3.4 Administration	9
4. Environmental and Social/ Gender Assessment	10
4.1 Environmental Conditions	10
4.1.1 Geography and Geology	10
4.1.2 Hydrology and Climate	11
4.1.3 Extreme Events	12
4.1.4 Land Use and Land Planning	12
4.1.5 Water Resources	12
4.1.6 Environment Issues	14
4.1.7 Other Issues	15
4.2 Socioeconomic Conditions	16
4.2.1 Socioeconomic Context	16
4.2.2 Gender Socioeconomic Analysis	18
5. Stakeholder Consultations	21
5.1 Other Partnerships	22
6. Environmental and Social/ Gender Impacts	24
6.1 AF Social and Environmental Policies	24
6.2 Identified Risks to the Programme	31
6.2.1 Component 1	31
6.2.2 Component 2	33
6.2.3 Other Measures	34
Appendix 1: Matrix of Impacts (Construction)	35
Appendix 2: Matrix of Impacts (Operational)	36

Acronyms

AF	Adaptation Fund
EIS	Environmental Impact Study
EIA	Environmental Impact Assessment
CBD	United Nations Convention on Biological Diversity
CEDAW Women	Convention on the Elimination of all Forms of Discrimination Against Women
CSW	Commission on the Status of Women
DOP	Dominican Peso
FOI	Freedom of Information
GCF	Green Climate Fund
GHG	Greenhouse gases
IDDI	Dominican Institute of Integral Development
INAPA	National Institute of Drinking Water and Sewerage
INDC	Intended Nationally Determined Contributions
INDRHI	National Institute of Hydraulic Resources
IPCC	Intergovernmental Panel on Climate Change
MSME	Micro, Small and Medium-sized Enterprises
NGO	Non-governmental organization
PESC	Strategic Plan for San Cristobal
RIO+20	United Nations Conference on Sustainable Development
SDG	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
UN WOMEN	United Nations Entity for Gender Equality and the Empowerment of Women
WUB	Water Users Board

Environmental and Social/ Gender Impact Assessment

Proyecto #ClimaSanCristobal

Environmental and Social/ Gender Impact Assessment

Executive Summary

The Dominican Republic is in the Caribbean tropical zone¹, which is impacted by heavy rainfalls from cyclones and El Niño-induced drought. The Climate Risk Index places the country among the most affected globally by climate change, resulting in increased frequency of extreme weather events including floods, droughts and cyclones. All projections indicate a dryer and warmer future.

The overlap between climate shocks exposure and poverty is evident: integrated management of land and water resources in farmers' fields and watersheds is critical for rural livelihoods. However, around 34% of the land is currently used for activities in conflict with its vocation, mainly affecting the upper part of the watersheds in mountain zones. This is causing soil erosion, siltation and degradation of watersheds, reducing their hydrological capacity to absorb and buffer against extreme climate events. The result is high impacts from floods and periods of water scarcity.

Rural poor people's livelihoods are also affected by the complex land tenure situation (less than 50% of land is titled) and unequal land distribution. The water provided through irrigation systems has drastically increased in the last decade (IDIAF, 2012)² but access to irrigation for small producers is still low. Inadequate land use and the poor health of watersheds put the sustainable provision of water at risk and increase operation and maintenance costs. Despite progress in strengthening water user associations, water is still used inefficiently³. In southeastern coastal areas, over-extraction of groundwater resources is causing sea water intrusion up to 50 km inland.

Similar to other provinces of Dominican Republic, in general terms San Cristóbal has a mid-to-high degree of exposure to climate variability and climate change characterized by increasing temperatures and decreasing and erratic rainfall, which, when coupled with low socio-economic development, produce as higher vulnerability to climate change and high opportunities areas for climate change adaptation, mainly in the water sector. Despite showing some indication towards commerce and industries, but subsistence agriculture remains prevalent for most of the people.

The objective of the Programme is to enhance the resilience and adaptive capacity of rural communities to climate impacts and risks on water resources in San Cristóbal. This objective will be achieved through key results focused on improving access to potable water and sanitation services, with reforestation activities in line with a correct planning of land use, and increasing institutional and community capacity and coordination for integrated management of water that supports other uses of water resources, especially for the diversification of the livelihoods of rural communities. The ways in which this will happen include: (a) Improved planning and management of water resources taking

¹ Annual average rainfall is 1,500 mm, which is unequally distributed from arid zones receiving 350 mm (*Valle de Neiba*) to very humid zones receiving 2,750 mm (*Laguna de Limon*). Average annual temperature is 28°C.

² This finding is reported in *Rural Territories and Adaptation to Climate Change in the Dominican Republic*. Elaborated by the Dominican Institute of Agricultural and Forestry Research (IDIAF).

³ It is important to consider water resources as a natural resource in tandem with forestry and direct land uses, rather than a commodity, as this undermines its judicious use. The availability of water affects socio-economic conditions, and its variations under extremes events present a serious hazard to the development.

into account climate change impacts on surface and groundwater sources; (b) Climate resilient management of water resources by communities; and (c) Improved knowledge and institutional capacity for coordination, management of water resources and diversification of livelihoods.

There are also inherent risks and potentially negative side effects from project activities. These can be summarized as follows:

1. Contamination during construction of infrastructure by pollutant emissions, wastewater, inadequate disposal of solid waste, and noise.
2. Disproportionate exclusion of most vulnerable, including women, elderly and persons with disabilities regarding taking-decisions.
3. Issues related to buy-in the Programme by communities and institutions to reach a long-term climate change adaptation.

All these impacts can be eliminated or minimized with an adequate management plan. Measures include, but are not limited to:

- Protection of the affected areas removing waste promptly or storing it adequately to prevent its affects soils and/or watercourses.
- Inclusion of guidelines for environmental protection and caring disposal of waste when up-grades are being made for climate adaptation.
- Monitoring of water and air quality, at key stages of programme interventions to ensure there is no deterioration of the environment.
- Prompt re-afforestation of the banks of the watercourses to minimize erosion, and not introduce any exotic or invasive species.
- Deliberate targeting of vulnerable groups and training for inclusion of women at as many stages and activities as possible, including procurement.
- To establish special institutional arrangements to reduce costs, fees, tariffs and taxes, so the resources provided by AF will go directly to beneficiaries.

After conclude the assessment, it can be concluded that **the proposed programme meets the requirements of the Adaptation Fund's Environment and Social Policy and Gender Policies (ESP)**. Also, the programme has adequate provisions to manage its expected environmental and social impacts, and propose rational strategies to mitigate, reduce, avoid o compensate any gender-related impacts. These potential impacts include climate change effects and GHG emissions.

1. Scope and Methodology

The programme implies 7 sub-projects targeting 30 small poor rural communities from 4 remote locations within San Cristóbal (**Villa Altagracia, Medina, Cambita Garabito** and **Los Cacaos**). San Cristobal is a high risk and populated province on the southwest of the Dominican Republic.

Table 1: Targeted Communities / Included on the Programme

Sub-project	Included Communities	Beneficiary Population	Women Included	Poverty	Climate Change Vulnerability
El Caobal	1. El Caobal 2. Cuco 3. Delgado 4. Puyenes 5. Los Mosquitos 6. La Yaguita 7. Domingo 8. Peleopoldo 9. Los Pinedas	15,500	7,780	41.4%	High
Loma Verde	10. Loma Verde (par- tial)	3,500	1,760	72.6%	Very High
Castaño	11. Castaño 12. Los Jesús 13. Nuñez Abajo 14. Los Mejias 15. Vietnam 16. La Cuaba 17. La Cuabita 18. Loma Verde (par- tial)	3,250	1,630	76.3%	Very High
Los Algarrobos	19. Los Algarrobos	900	450	82.2%	Very High
San Francisco	20. Ochoa	500	250	84.2%	Very High
Arroyo Higüero	21. San Francisco	450	225	84.6%	Very High
Arroyo Higüero	22. Arroyo Higüero				
El Fundo	23. El Fundo 24. Toronja 25. Esperanza 26. Juanita 27. Medina Abajo 28. La Sabana 29. Pachín 30. Juliana Abajo	200	105	90.4%	Very High
TOTAL	30	24,300	12,200	54.2%	Very High

Commented [DL1]: Inserted column with number of women disaggregated.

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The main objective of the programme is to enhance the resilience and adaptive capacity of rural livelihoods to climate impacts and risks on water resources in the San Cristóbal Province. This objective will be achieved through the improvement of water access and also increase institutional and com-

Environmental and Social/ Gender Impact Assessment

munity capacity and coordination for integrated water management, and to support other uses of water especially for diversification of livelihoods by rural communities. Socioeconomic, demographic environmental and cultural characteristics of communities were considered to choose the target area.

This Environmental and Social/Gender Impact Assessment aims to ensure that programme interventions are designed in accordance with the *Environmental and Social Policy* of the Adaptation Fund, policies of the Ministry of Environment, laws of Dominican Republic and principles of human rights, gender equality, women's empowerment, and environmental sustainability.

1.1 Methodology

Programme interventions were assessed for gender responsiveness and consistency with the needs of most vulnerable populations in targeted areas. **The methodology included literature review, 16 meetings with technical staff of the Government, 20 days of fieldwork, 2 community consultations, and 22 unstructured interviews with key informants from of community-based organizations.** The output of the analysis is an Environmental, Social and Gender Impact Assessment (ESIA) across the two components of the project.

The following analytical approach was utilized for the assessment:

1. Review existing data (environmental and social/ gender-differentiated development indicators and constraints) and relevant analyses. The assessment discusses such data, challenges, priorities, concerns, and approaches in such a way that it not only informs updates to the relevant strategy but also provides useful guidance to use in the next phase of programme development. Where appropriate, it does include examples that demonstrate the application of environmental and social/ gender analyses and lessons from past and ongoing initiatives.
2. Identify linkages between environmental and social/ gender and development objectives that are relevant to the programme strategy, both in outlining the overall community context and in describing the programme proposal. Relevant Adaptation Fund policies were used as guide.
3. Identify environmental and social/ gender-related factors to be taken into account by the IDDI in subsequent operational plans, analyses, activity, and designs. These are to be presented in the form of issues and recommendations for further examination. Some statements of the key environmental and social/ gender-based are provided -including relevant constraints to the programme, IDDI, beneficiary communities, local organizations and key institutions.
4. Identify resources and sources of sex-disaggregated data (and possibly other variables as appropriate) and how these factors are important for developing environmental and social/ gender-appropriate indicators, taking into account standard and custom indicators.
5. Advice on how to analyze the potential impact of programme proposed strategic approaches can mean the next step regarding climate change adaptation from a gender point of view. Identify local expertise on environmental, social and gender (e.g., NGOs, academics, research institutions, government officials) that can be called on to provide further technical assistance.
6. Draft recommendations for developing an environmental and social/ gender management plan, which lays out the steps to address risks and impacts towards the proposed programme implementation. Recommendations are as practical as possible and include the perspective of both

Environmental and Social/ Gender Impact Assessment

environmental and social / gender technicians and community leaders. The draft action plan is not a deliverable, but a document that will develop based on this assessment.

2. Programme Description

The project, titled "**Enhancing climate resilience in San Cristóbal Province, Dominican Republic – Integrated Water Resources Management and Rural Development Programme**" aims to increase resilience to climate change through both immediate and long-term adaptation measures by way of rural development activities, projects, and actions. Such outputs are organized according to two main components:

- (1) Community-level implementation of water resource management activities;
- (2) Capacity building and capacity development to manage climate-related risks.

Table 2: Programme Components, Outputs and Outcomes

Project Components	Expected Outputs	Expected Outcomes
1. Community-level implementation of climate resilient water resource management activities	1.1 Community water supply and management plans developed for 30 communities to incorporate climate change-related risks.	Implemented climate resilient management of water resources by 30 small rural communities of San Cristóbal
	1.2 Water supply increased for multiple uses and users in 30 communities during the period of shortages under climate impacts (as droughts, heat stress, etc.).	
	1.3 Measures for water conservation under climate impacts (as catchment/river bank, re-afforestation schemes) implemented for 2,722 hectares.	
2. Capacity building and capacity development in key institutions and communities to manage long-term climate change-related risks	2.1 A set of manual and other materials on best practices for water management and resilient livelihood are developed, including a fully operational website.	Increased technical capacity of communities and institutions to assess impacts, vulnerability and adaptation needs according to their respective competencies.
	2.2 A Provincial Climate Change Adaptation Monitoring Committee established in San Cristóbal.	
	2.3 Learning platforms and systems for integrating climate change-related risks into community management of water resources and livelihoods activities institutionalized in 30 communities.	

2.1 Approach

The Programme will address key vulnerabilities of identified areas regarding agriculture and water resources management and thus contribute to the immediate and long-term development and resilience needs of communities, households, and vulnerable farmers/ producers, with a particular focus on extremely vulnerable groups: women, elderly, children and young, and local producers. **The programme benefices 24,300 people, which 12,200 are women (~52% living under poverty line).**

3. Policy Approach

3.1 National Legislation

- **Law 1-12: National Development Strategy**

The National Development Strategy contains a central theme that mandates national adaptation to climate change. The Law establishes a binding commitment to achieve a reduction in GHG emissions of 25% by 2030, compared to 2010 levels and mandates a review of targets to reduce emissions every five years until 2030. The proposed programme is aligned with provisions from the law 1-12, regarding climate adaptation to poverty reduction, climate change, water resources management, women empowerment, livelihoods diversification, environment protection and gender equality.

- **General Law on the Environment and Natural Resources (64-00)**

This law establishes standards for conservation, protection, enhancement and restoration of the environment and natural resources ensuring their sustainable use. To reach such objective, this law creates the Ministry of Environment and provide guidelines for environmental protection and management, effective allocation of administrative responsibilities for environment management, the undertaking and coordination of environmental management and related activities, and the incorporation of international treaty obligations with respect to the environment into national and law matters. Specific to the proposed programme, Law 64-00 provides for preventative and remedial measures for mitigation of all forms of environmental degradation. The law allows (and promote) public participation and transparency of the decision-making process regarding environment and sustainability.

- **Sectorial Law of Protected Areas (202-04)**

This law aims to guarantee the conservation and preservation of representative samples of different ecosystems and natural and cultural patrimony of the Dominican Republic, in order to secure the permanence and optimization of environmental and economic services that these ecosystems offer or may offer to the dominican society in the present and future generations. The law creates the National System of Protected Areas (SINAP), including its management, finance, norms, and sanctions. In conjunction with the Law 64-00, this law is very important to the programme due to some rural communities in San Cristobal are located close to the so called "*buffer zones*" of protected areas.

- **General Youth Law (49-00)**

This law is the main legislative tool for youth in the Dominican Republic. It was introduced in order to promote the comprehensive development of young people trough establishing seven priority areas: *health, culture, education, training, community participation, legislation, and sports and recreation*. The proposed programme will be aligned with the youth law due to it focuses on key areas such: strengthening social fabric, education and training, employment and sustainable livelihoods, water-health links, participation and empowerment, and gender equality and gender relations. Proposed more resilient livelihoods ensure that youth is mainstreamed in environmental and climate actions.

- **Freedom of Information Law (200-04)**

This law gives effect to those parts of the Constitution that grants rights to receive and disseminate

public information. It promotes a maximum disclosure of information and requests the creation of an information officer for every public authority. All programme relevant information will be submitted to government institutions (Ministry of Environment and INAPA) according to such legislation. Important as well for the programme is the provision which requires that the public institutions make available on an annual basis. It does include the content of all decisions and policies adopted which affect the public, along with the reasons for them, any authoritative interpretations of them, any important background material; and any mechanisms or procedures by which the citizens may make representations or otherwise influence the formulation of policy or the exercise of powers.

- **Risk Management Law (147-02)**

The Dominican Republic has taken steps to advance disaster risk management, including developing a comprehensive legal and institutional framework for Disaster Risk Management (DRM). This Law established the National System for Disaster Prevention, Mitigation, and Response. To build on its DRM goals, the government's priorities include: (a) Supporting provinces, municipalities and communities to establish their own Disaster Prevention, Mitigation, and Response Committees and to develop and implement their own emergency and DRM plans; (b) Integrating DRM criteria into building codes, regulations, and zoning laws to increase the resilience of education and health infrastructure (including works for water supply and sanitation services); and (c) Developing a financial strategy that will support the mitigation of disaster impacts, specially natural hazards. Under the programme, expected interventions will be aligned with this law, due to it also create specific technical devices for water supply facilities, including additional funding in case of extreme events.

- **Law 86-99 (Creation of Ministry for Women)**

The most important institutional mechanism established to promote equality between the sexes and empower women in the Dominican Republic. Under this regulation, Ministry for Women takes responsibility for establishing standards and coordinating the implementation of policies, plans, and programmes for the achievement of gender equity and the exercise of full citizenship by women, at the sectorial and interdepartmental, level and in conjunction with civil society.

3.2 International Agreements

- **Sustainable Development Goals (SDGs, 2015)**

The Sustainable Development Goals are a collection of 17 global goals set by the United Nations. The broad goals are interrelated though each has its own targets to achieve. SDGs cover a broad range of social and economic development issues. These include *Poverty* (1), *Hunger* (2), *Health* (3), *Education* (4), *Climate Change* (13), *Gender Equality* (5), *Clean Water and Sanitation* (6), and *Sustainable Communities* (11). The Dominican Republic participates actively on several the SDGs platforms.

- **United Nations Framework Convention on Climate Change (UNFCCC, 1992)**

This convention provides a framework for intergovernmental efforts to deal with climate change and its effects. The governments meet and share data on greenhouse gas emissions, national policies, and best practices. The convention allows for the development and implementation of strategies for tackling emissions and the challenges of expected impacts and provides for financial and technical assistance for developing countries. Each country formulates its Intended Nationally Determined Contributions (INDC) to the UNFCCC. The Dominican Republic has a climate action target that will be directly addressed by the programme (integrated water management). In its INDC, the country aims

to reduce floods and droughts risks, climate-related health impacts, and damages to infrastructure⁴.

- **United Nations Convention on Biological Diversity (CBD, 1992)**

The convention deals with biodiversity and all direct and indirect facets of its role in development. The major goal is the conservation and sustainable use of biodiversity. CBD promotes women's knowledge and practices in the conservation and sustainable use of biological diversity in the agricultural sector. It also promotes gender-specific ways in which to document and preserve women's knowledge of biodiversity and calls for gender balance in various bodies and activities. Dominican Republic has submitted a National and Strategic Biodiversity Action Plan covering the full scope of the CBD⁵. Ministry of Environment and Natural Resources is the National Authority of CDB.

- **Commission on the Status of Women (CSW, 1962)**

The 52nd session of the CSW (2008) identified gender perspectives on climate change as its key emerging issue. The Commission on the Status of Women urged governments to integrate a gender perspective in the design, implementation, monitoring and evaluation and reporting of national environmental policies, strengthen mechanisms and provide adequate resources to ensure women's full and equal participation in decision making at all levels on environmental issues, in particular on strategies related to climate change and the lives of women and girls.

- **Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW)**

The principal instrument for the protection of women's rights is CEDAW, which was adopted in 1979 by the General Assembly of the United Nations. Dominican Republic ratified CEDAW in 1982 aiming that women are given the opportunity to represent their governments at the international level and to participate in the work of international organizations; that women have equal rights to bank loans, mortgages and other forms of financial credit; and that women in rural areas can:

- (a) participate in and benefits from rural development;
- (b) participate in development planning at all levels;
- (c) obtain training, education, and extension services;
- (d) have access to credit and loans, marketing facilities and appropriate technology;
- (e) be treated equally in the land, agrarian reform, and land resettlement schemes.

- **United Nations Conference on Sustainable Development (Rio+20, 2012)**

Rio+20 affirm that green economy policies and poverty eradication should enhance the welfare of women, mobilize their full potential and ensure the equal contribution of women and men. *The Fu-*

⁴ Also, UNFCCC aims for gender balance in bodies established pursuant to the Convention, to improve women's participation and inform more effective policy that addresses the needs of women and men equally. The UNFCCC calls for the national adaptation plan (NAP) process to be gender-sensitive and calls on the Green Climate Fund (GCF) to promote environmental, socioeconomic, and development co-benefits under a gender-sensitive approach.

⁵ Available at: <https://www.cbd.int/doc/world/do/do-nbsap-01-es.pdf>.

ture We Want, the outcome document adopted in the context of this meeting, resolves to unlock the potential of women as drivers of sustainable development, including through the repeal of discriminatory laws and the removal of formal barriers. It also commits to actively promote the collection, more participation of women on sustainable public policy, and use of gender-sensitive indicators.

3.3 National Policies

Other relevant policies to the programme are:

- National Policy on Climate Change
- National Literacy Plan ("*Quisqueya Aprende Contigo*")
- National Strategy for Water and Sanitation
- Strategy Plan for Science, Technology, and Innovation
- National Plan on Violence Against Women
- Climate Compatible Development Plan of the Dominican Republic
- National Regularization Plan for Foreigners
- National Policy for Integral Solid Waste Management
- National Strategy for the Conservation and Sustainable Use of Biodiversity
- National Public Policy for Youth Development
- Multi-Year Public Sector Plan
- National Contingency Plan for Hydrometeorological Events
- National Plan for Systemic Competitiveness of the Dominican Republic
- National Plan for Climate Change Adaptation in the Dominican Republic
- National Plan for Comprehensive Disaster Risk Management
- National Health Quality Policy
- National Plan on Land Titling
- Strategy Planning of INAPA
- National Policy for Climate Change

The Third National Communication defines as a top-priority the climate adaptation measures and policies which support vulnerable communities and prioritizes water resources and agriculture-resilient. As the Programme includes activities in all these sectors, it contributes to the country's food security. With a focus on addressing threats to food production and water access, the Programme

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will contribute to putting the Dominican Republic on a firmer path towards food security with better utilization of water and improved public health in vulnerable communities making it more resilient.

3.4 Administration

Programme administration will be carried out by IDDI, in its role of Implementation Entity. Main IDDI policies and procedures related to procuring, acquisitions, account, auditing, and ethics, have been reviewed by the Adaptation Fund during the implementation entity accreditation process. Main executing entities are the Ministry of Environment (www.ambiente.gob.do) regarding Policy, and the INAPA (National Institute of Drinking Water And Sewerage, www.inapa.gob.do) regarding Projects.

4. Environmental and Social/ Gender Assessment

4.1 Environmental Conditions

4.1.1 Geography and Geology

The topography of San Cristóbal consists of mid-to-high hills. Highest elevations are *Loma La Maja-gua* (1,969 m), *Loma El Grito* (1,800 m), *Loma Pio* (1,400 m), *Loma Vieja* (1,400 m), *Loma La Humeado-ra* (1,315 m), etc. This general slope appears furrowed by several fluvial courses, between which, the most important are the rivers *Nigua*, *Nizao*, *Itabo*, *Najayo*, and *Haina*. Landslides are dispersed, being larger and more frequent on the slopes of the valleys of Nigua and Nizao rivers.

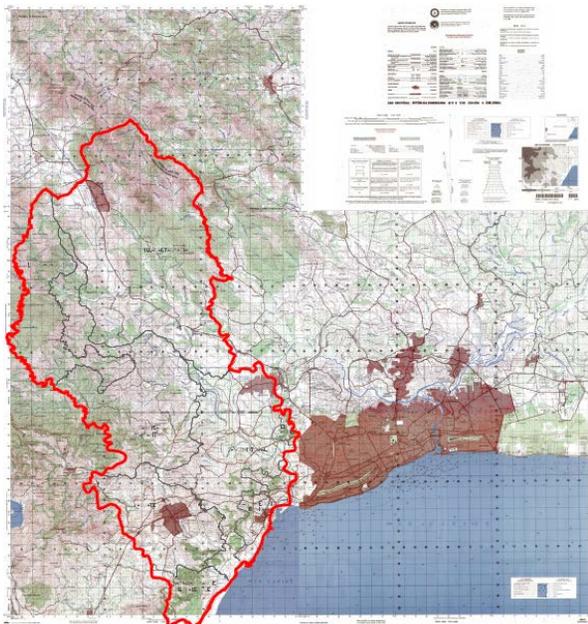


Figure 1: Topographic Map of San Cristóbal

Source: Environmental Study of the Programme.

Most of the soils in the target area are *Type VII*, with some zones of *Type VI*. *Type VII* are rugged mountain terrains, with rugged topography, not cultivable, and suitable for logging purposes. *Type VI* are most suitable for forests, pastures and mountain crops, with limitations of topography, depth and rockiness. The rest of the soils are a mixture of class II, III and IV, which means that they can be cultivated using moderate to intensive conservation and management practices.

4.1.2 Hydrology and Climate

The climate of the San Cristóbal province is influenced basically by the orographic characteristics of the *Cordillera Central* and the *Sierra de Yamasá*, constituting the main climate driver of the area, with variations due to the climate of the Caribbean coast in the southern part of the province.

Hydrology: main rivers of the province are Haina, which constitutes the eastern boundary of the province; Nizao, that forms the limit with Peravia province, and Nigua. Other important rivers are *Mana*, *Yubaso (Blanco)*, *La Toma* and *Itabo*, *Sainaguá* and *Najayo* streams. Humid areas are found across intermontane and hilly zones, with the longest wet periods occurring up to 5-7 months.

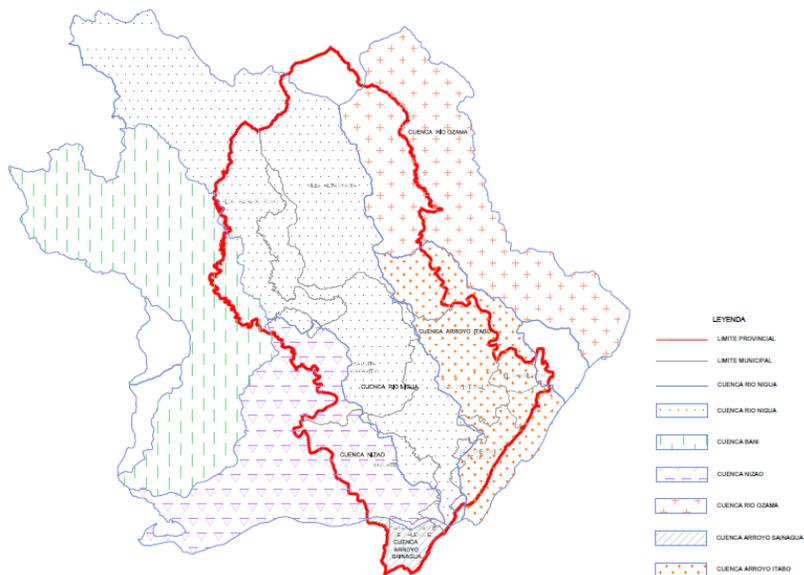


Figure 2: Map of Watersheds of San Cristóbal

Source: Environmental Study of the Programme.

Pluviometry: province average rainfall is 2,270 mm. January is the driest month (86 mm), while the rainiest is August (291 mm). The rainfall variation (the difference between the precipitation of the driest month and the rainiest month) is 205 mm. Los Cacaos is the rainiest area of the province.

Winds and Humidity: winds occur with speed between 12.2 km/h in September and 14.1 km/h in January, and their annual average is 13.3 km/h. The predominant direction of the winds is towards the northeast. The relative humidity goes from 72% to 79%, being the annual average 76%.

Temperature: average annual temperature of the area is 25.9 °C. The hottest month is September (26.2 °C) while January is the coldest (24.0 °C). The variation in temperature of the province (the difference between the hottest and coldest months) is 2.2 ° C.

4.1.3 Extreme Events

Most relevant climate related events in the country with the incidence in San Cristobal are:

- 1980 Hurricane ALLEN affected to the south of the island, sufficiently close to creates great waves in all the south coasts and hurricane conditions in *Barahona*.
- 1987 Hurricane EMILY, with an atypical parabolic trajectory penetrated on the south coasts near Nizao and the Neiba's Bay leaving by the Atlantic north of Haiti.
- 1998 Hurricane GEORGES passes through the entire country, with great destruction, and heavy rainfall in the central mountain range, causing overflows and floods.
- 2003 Tropical Storm ODETTE enters the southwestern part of the country, causing abundant rainfall and landslides along the southwest coast.
- 2007 Tropical Storms OLGA and NOEL impacted the south of the country, with heavy rainfall, winds, and thunderbolts, causing floods and many fatalities.

In 2016, the Dominican Republic suffered from the most severe drought on record there is an accumulated deficit of an entire year's worth of rainfall since the beginning of the drought late in 2014. According to official records, these 16 months (November 2014 to February 2016) have been the driest ever period for the country. A similar or even worst drought is expected in 2020⁶.

4.1.4 Land Use and Land Planning

According to most recent map of Land Use and Coverage prepared by the Ministry of Environment (2012), San Cristóbal have different agricultural uses occupying an area of 567.19 km², of which cocoa, grass, citrus, cane and intensive cultivation occupying 536.99 km², equivalent to 95% of its agricultural area, while the remaining 5% is occupied by mixed agriculture, coconut, and coffee. Land Use and Coverage Study (2012) shows a forest cover of 554.1 km² (44.8% of the surface of the province), where the coniferous has 79 km² (6.4%), and the broad-leaf 474.8 km² (38.3 %). The agricultural area composed of perennial or permanent crops, annual intensive crops and pasture has an area of 617.6 km². Long-term plans of land use shall be addressed by municipalities on a project-by-project basis.

4.1.5 Water Resources

Fresh water is perennially available from reservoirs on the western border and from streams

⁶ Researchers from INTEC forecast an extreme drought due to climate change for all Dominican Republic in 2020 or before. Main findings of this research are included on the reports of Clima-Info (USAID-INTEC, 2017).

throughout the province. Very large quantities are available from the *Jigüey*, *Aquacate*, *Las Barías*, and *Valdesia* Reservoirs, which are on the *Nizao* River. According with INDRHI, sedimentation had reduced the capacity of the Valdesia Reservoir by 42.6%. The capacities of Jigüey and Aquacate Reservoirs are also seriously reduced by sedimentation. The fresh water availability from Nizao and Haina rivers are critically minimal if any. Similarly occurs with the water from the Nigua River. The rest of the province has a meager to moderate quantities of fresh water available from intermittent streams. All surface water should be considered biologically contaminated, especially near and downstream from populated places. Surface water is usually moderately hard and very turbid (see Table 3 further).



Figure 3: Water Sources Contamination in San Cristobal

Source: field visits (November 2017).

Regarding ground water, the best areas for ground water exploration are the alluvial aquifers in the southwestern and southeastern parts of the province (5%). Small to large quantities of fresh water are available from Quaternary to recent age alluvial aquifers. These aquifers consist primarily of sand and gravel interbedded with clay at depths ranging from 5 to 50 m, but locally up to 200 m. Large quantities of ground water are available as the percentage of clay content in the aquifer decreases. Ground water is soft to moderately hard. Within or near urban areas, shallow ground water may be contaminated with biological and/or chemical wastes. Care should be taken to avoid excessive pumping along coastal areas where saline water underlies fresh water zones.



Figure 4: Precarious Water Supply in Cambita Garabito (left) and Los Cacaos (right)

Source: field visits (November 2017).

Very small to very large quantities of ground water are available from Tertiary to Quaternary age limestone at depths ranging from 5 to 25 m in low-lying areas and 100 to 200 m in mountainous areas (20% of the province in the southern part). Ground water quality is generally fresh and very hard, except near coastal areas where it is brackish to saline. Within or near urban areas, shallow ground water may be contaminated with biological and/or chemical wastes. Major aquifers include the karstic limestone in *La Toca*, *Cevicos*, *Arroyo Blanco*, *Higuerito*, *Arroyo Seco*, *Sombrieto*, *Lemba*, *Florentino*, *Abuillot*, *Plaisance*, and *Neiba* Formations. *Villa Trina* formation is also present.

Very small to large quantities of fresh water are available from differentiated and undifferentiated Tertiary age sedimentary rocks with minor metamorphic rocks at depths ranging from 5 to 25 meters in low-lying areas and 100 to 200 meters in mountainous areas (15% in the south-central part of the province). Ground water is locally very hard only in areas with high hydrogen-ion concentration (pH) where limestone is encountered. Within or near urban areas, shallow ground water may be contaminated with biological and/or chemical wastes. Primary aquifers include the Miocene age *Arroyo Blanco*, *Arroyo Seco*, and *Via* formations. Other aquifers include the Oligocene age *Luperón* Formation and the Eocene age *La Isla* formation. In the rest of the province ground water exploration is not recommended in these areas without site-specific local references.

4.1.6 Environment Issues

According with the Ministry of Environment and Natural Resources, the pollution and environment degradation should be raising alarm as a major health risk for San Cristobal. According to recent environmental research (carried by *Ozama Green Foundation*), many areas of the country shows water and soil contamination, smog, and light, sound, and electromagnetic pollution. According to such organization, 21 out each 30 illness reported are related to lack of access to water and/or the consumption of contaminated water. Such illnesses include dengue, parasites, amoebas, cholera, etc.

According to relevant regulation, the Ministry of Health has established the national standards for the drinking water. Samples of water taken from superficial sources supplying water to San José del Puerto, Cambita, Medina and Villa Altagracia, as part of the programme Environmental Impact Study. The findings are indicative of a high level of pollution, similar to many other areas of the country, which obligates the population to use bottled water affecting the household's income (see Table 3).

Table 3: Aggregated Results of Water Quality Tests

Parameter	Unit	Value	Acceptable	Permitted	Comment
Mesophilic aerobic count	UFC/ml	291	<200	<200	non-compliant
Total coliforms	NMP/100ml	43.3	<1	<1	non-compliant
Fecal coliforms	NMP/100ml	2.00	<1	<1	non-compliant
Echerichia Coli	NMP/100ml	present	absent	absent	non-compliant

Mushrooms and Yeasts	/100ml	<1	absent	absent	compliant
Pseudomonas	/100ml	present	absent	absent	non-compliant

Source: Programme's Environment Impacts Study.

60 samples from Los Cacaos (14), Villa Altagracia (12), Medina (16), Najayo (6), and Cambita Garabito (12) Sample and tests realized by Institute of Innovation in Biotechnology and Industry -IIBI (November 2017).

Other analyses reviewed during the research, indicates other non-compliant related to elevated nitrates, phosphates and ammonia levels in almost all areas. The source of these is most likely untreated human sewage, animal waste and for those areas downstream of farms, fertilizers. Ammonia is directly toxic to freshwater organisms while the nitrates and phosphates can lead to algal blooms. The depletion of dissolved oxygen by the large concentrations of algae is further compounded by an increase in organic material attracting large numbers of aerobic bacteria which also deplete oxygen.



Figure 5: Precarious Water Supply (Medina) and Community Protests (Villa Altagracia)
Source: field visits (October 2017).

4.1.7 Other Issues

Beyond climate change vulnerability and poverty induced conditions, identified problems also occur by other aspects as:

- Inadequate or poor legal and institutional framework
- Inadequate operation and maintenance of equipment;
- Lack of trained professionals and technicians;
- Insufficient knowledge of water resources;

- Deficiency of water resources itself, which requires the transfers from one basin to another;
- Inadequate cost-recovery framework;
- Preferred solutions are not the best technically;
- Lack of definite government policy and lack of planning;
- Funding limitations and logistical problems.

4.2 Socioeconomic Conditions

4.2.1 Socioeconomic Context

The population of San Cristóbal is 0.57 million. According to last National Homes Survey for Multiple Purposes, 36.2% of the population has an income below the upper poverty line, while 6.4% is below the extreme poverty. Poverty is predominantly severe in rural areas, where more than 82% is poor. In 6 out of the 14 municipalities, more than 50% of the people live in poverty (see Figure 6). According to official statistics, of an economically active population of 447,270 inhabitants, only 39.1% are employed (formal, informal, permanent and temporary). This indicates that unemployment is a bigger issue in the province, especially for vulnerable segments such as women, elderly, people with disabilities, youth and discouraged. The distribution of employment is discussed on table 4 below.

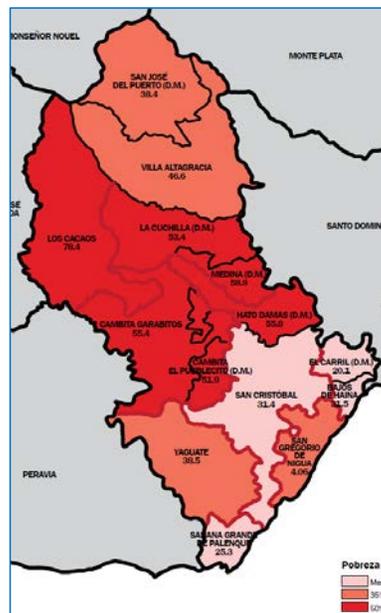


Figure 6: Poverty by Municipality in San Cristóbal
Source: Oficina Nacional de Estadísticas, 2014

Table 4: Employed Persons by Economic Activity

Activity	Men	Women	Total	%
Agriculture, Livestock and Fishing	9,253	905	10,158	5.8
Industry and mining	20,658	9,130	29,788	17.0
Financial and real estate services	5,196	2,181	7,377	4.2
Transport and relatives	14,639	752	15,391	8.8
Commerce and hospitality	28,976	13,764	42,740	24.5
Domestic services	1,075	17,136	18,211	10.4
Government	7,479	8,429	15,908	9.1
Building	12,295	299	12,594	7.2
Other services	5,096	9,425	14,521	8.3
Not declared	4,988	3,062	8,050	4.6
TOTAL	109,655	65,083	174,738	100.0

Source: IX Censo Nacional de Población y Vivienda 2010 (ONE, 2014).

San Cristóbal shows higher school attendance rates for all ages, which shows a high turnover of capacity development through formal educational programmes. According to official statistics, 88% of the population is literate. The dominance of men over women, in terms of land's ownership and other assets, access to and control of resources and in decision-making, is overwhelming. Together with the low access of women to land ownership, women also have limited access to formal employs in non-agriculture activities (43.3%). All these impose time constraints on women and tend to limit their awareness about opportunities, participation, and development in general.

The intervention areas of the program are essentially rural communities, whose main vocation is self-subsistence agriculture, and extensive family farming. As established in the selection criteria of beneficiary communities, most of these communities are economically and socially depressed. This is exacerbated by the presence of Haitian descents and immigrant Haitian nationals, many of whom live in conditions of profound marginality. The infrastructure of services of these places ranges from low to precarious, reason why the community values positively the programme.



Figure 7: Conditions of Marginality in Target Communities

Source: field visits (November 2017).

4.2.2 Gender Socioeconomic Analysis

There are significant differences in vulnerability and exposure that are a result of non-climatic factors and systemic, multidimensional forms of inequalities such as discrimination based on gender. As is stated by the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), gender equality refers to:

“the equal rights, responsibilities, and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women’s and men’s rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs, and priorities of both women and men are taken into consideration – recognizing the diversity of different groups of women and men.”

- Women, UN coherence, and you (2000).

This definition implies gender inequality, is often due to systemic, institutionalized and culturally based forms of marginalization. This inequality has led to differentiated vulnerability, given that gender dynamics in the society contribute to shaping the power, roles, and resources that are available to men and women. Because of this, the programme has a strong focus on women.

Although both boys and men are affected by climate change, women bear more of the burden, which is due to biological or physical differences but is formed by the social, institutional and legal context, which reinforces differences in women and men. These differences are seen in the productive and social-reproductive roles and responsibilities, differential access to productive resources, including land, credit, technology, and employment. As well, women still have limited participation in political decision-making both at the community and governmental levels.

As it relates to climate change, gender refers to how the socio-political relations between men and women affect the planning and implementation of adaptation actions, access to resources, the ways in which climate change impacts and adaptation measures differentially affect men and women, and the ways in which men and women contribute differently to adaptation actions.

The Country Gender Assessment (USAID, 2009)⁷ for the Dominican Republic forms a backdrop for situating gender equality in the country. The report reveals that approximately 35% of households are headed by women. More men consider themselves to be heads of household than women, and subsequently more women consider themselves to be the spouses or partners of male heads. Of the population of persons surveyed for the 2010 Census, 94,666 households of San Cristobal are headed by males (62.5%), while 56,932 (37.5%) declared that they were headed by females.

Poor female-headed households, particularly those with children, tend to experience greater negative impacts than male-headed households even with adaptation practices; therefore, they would be worse off without adaptation. The components of the programme will be instrumental in improving the lives of everyone in the community, particularly female-headed households.

The USAID assessment reveals that women restricted access to and control over the means of production -land, and credit in particular- act as hurdles, which make them and their families more vulnerable to poverty. Land tenure and access to credit are serious constraints for all farmers (as any small businesses) in the Dominican Republic, but the constraints are magnified for women.

Regarding access to credit, for example, ADEMI and ADOPEM (two local based development banks that began as credit institutions for micro-enterprise, to provide agricultural credit to member associations) not provide finance to single women. Despite both project's intents to be responsive to the gender-based constraints, only about one percent (1%) of their loans have gone to women. A study carried by the Food and Agriculture Organization of the United Nations (FAO) in 1998, found that in the Dominican Republic, 22% of the women-owned lands received as an inheritance (being men 72%), and just 5% of farmers benefited by the settlements of the agrarian reform are women⁸.

Despite the limited collection of sex-disaggregated data, it is critical for an effective response to climate change for a disaggregated analysis to provide insights to improve policies and strategies. As there is no any official gender policy in the country, programme will be undertaking tools developed by international organizations (i.e., USAID, United Nations, GIZ and JICA) most of which aims gender capacity building, training, and development to ensure that programs and adaptation strategies are genders responsive to benefit both men and women equally.

To mitigate potentially negative impacts during project implementation, gender inequalities have been factored into the analysis. The 2014 Beijing Declaration and Platform for Action report for the Dominican Republic⁹ highlighted challenges to achieving gender equality nationally which includes issues such as social security not catering to women in unpaid sectors who end up working all their lives, but cannot be cared for in their old age due to limited savings and the absence of adequate resources through government pension schemes. As such, elderly women within the community who have contributed to the care economy more vulnerable and at risk. Similarly, the lack of resources is

⁷ Gender Assessment - USAID/Dominican Republic, Prepared by Virginia Lambert, DevTech Systems, Inc. Available at: http://pdf.usaid.gov/pdf_docs/Pnadq847.pdf.

⁸ Aspectos jurídicos en el acceso de la mujer a la tierra Cuba, Honduras, Nicaragua y República Dominicana. Prepared by FAO. Available at: <http://www.bio-nica.info/biblioteca/Galan2002Genero.pdf>.

⁹ Informe nacional REPUBLICA DOMINICANA (Country Report towards Beijing+20). CEPAL. Available at: https://www.cepal.org/mujer/noticias/paginas/3/51823/Informe_Republica_Dominicana_Beijing_20.pdf.

pointed as the biggest challenge to developing better policies.

Further, a Country Poverty Assessment prepared by the World Bank in 2006¹⁰ highlighted women, single mothers and elderly as most vulnerable groups. However, through consultations and focus groups meetings, members of the community participated which comprised of single mothers, unemployed and underemployed women. Some women who participated in such consultations explained their difficulties to access to the make-decisions levels in their respective communities and/or organizations, and even worst to bring the attention of authorities to their problematic (meaning employment, housing, market-barriers, basic services as water, sanitation, and health).

Regarding water supply and sanitation, a recent work from MUDE in San Cristobal states¹¹:

- a) Less of 10% of development projects include gender-specific indicators nor segregated data;
- b) 20% of less of women are included in community meetings or training sessions;
- c) 90% of more of trainings related to water-health-climate are imparted when women works;
- d) No women are consulted to decide water sources, management committees, o water tariffs;
- e) 90% or more of women are entitled to care children in case of stomach /respiratory diseases;
- f) Almost 85% of women caring their children also work and manage the water in their houses;
- g) Less of 20% of women are trained on climate change adaptation and resilience livelihoods.

Therefore, the proposed climate change adaptation programme recognizes the challenges individuals face particularly women in access to livelihoods. The project has a mainstream strategy designed to benefit vulnerable groups (mainly women) which offer diversification of livelihoods of rural communities under climate change. Therefore, a component of the programme involves capacity building and capacity development in key institutions and communities to manage long-term climate change-related risks, should be specifically targeted to benefit women so that they can access the necessary financing to improve their lives to withstand disaster and climate impacts.

¹⁰ Dominican Republic - Poverty Assessment: achieving more pro-poor growth. World Bank. Available at: <http://documents.worldbank.org/curated/en/295161468236090493/pdf/32422.pdf>.

¹¹ Incorporating a gender perspective in rural water and sanitation projects: experience of MUDE (Women in Development, Dominican Republic). Available at: <https://www.ircwash.org/resources/incorporating-gender-perspective-rural-water-and-sanitation-projects-experience-mude-women>.

5. Stakeholder Consultations

Methodology and collection instruments are described in detail in the Annex 6 of the programme proposal. The aim included gauging interest in Component 1 of the proposal, which deals with water resources management under climate change impacts such as flooding, hurricanes, storms, water-related diseases, and extended droughts. Table 5 summarizes the results from both focus groups.

Table 5: Stakeholder Inputs to Programme Design

Stakeholders Comments and Suggestions	Relevant Options for Programme Design
Concern that programme is more focused on to build new water infrastructure (more expense) instead to rehabilitate the existing one.	Output 1.2 include water supply increased, based on community management plans from Output 1.1. Where be economically feasible and technically viable, new infrastructure is built but existing one could be rehabilitated, retrofitted, or upgraded.
Concern that measures for re-forestation be lost if occurs any forest fire.	Under capacity building activities, training for fire volunteer can be included, due to it will become more frequent as climate conditions get drier). This task can be developed jointly with forest firefighters of Ministry of Environment and Natural Resources.
Planting of trees with economic value, such as mango, avocado, macadamia, etc.	To sure that activity maximizes economic benefits for communities; the suggestion will be adopted in the context of the programme. However, this shall be done after evaluating the technical and environmental viability of these such trees.
The implementing agencies should make sure that the activities are executed on the ground as envisioned in the project design.	The proposed programme interventions will be executed with support of Ministry of Environment, INAPA, INDRHI, and others key institutions, which grant fulfillment with laws and norms. Also, the programme will be implemented with community organizations and shall meet the Adaptation Fund's requirements related monitoring and report.
Development interventions in the past have created unsustainable or duplicated associations and committees in addition to the statutory bodies.	The implementation arrangements are designed to look for programme long-term sustainability. In this context, there is no need to create and/or duplicate social structures but of strength the existing one.
How communities can be sure their approaches/ comments/ inputs are taken under consideration.	Programme has established a specific mechanism for grievances and disputes trough the Complaints System of the Ministry of Environment, which is publicly accessible. Contact info was shared.
Concern that community development brings non-climate problems that aggravate the impacts of adverse climates, such as growing population, deforestation, and non-sustainable agriculture.	Attention should be also given to non-climate problems that aggravate the impacts of climate change, such as growing population, settlement pattern, etc. This puts pressure on forests as people cut trees to build settlements or farms.
To include interventions related to processing and commercialize bottled water and drinking water to increase the community income.	To make sure that the activity maximizes the benefits for women, the suggestion will be adopted in the context of the programme.

Source: Programme's Environment Impacts Study.

Approaches that are geared towards climate change adaptation require a multi-disciplinary, multi-sector strategy. Regarding this matter, gender and environmental/social impacts are crosscutting issues that require a partnership-based approach. Therefore, the consultation process included a diverse group of stakeholders whose inputs are included in the programme final design. The consultations included a participatory approach with key presentations and space for stakeholder engagement and input that informed the final design of programme components and activities.

Programme information was disseminated through various media, including (i) letters, phone calls, and email (direct communication); (ii) socialization efforts; and (iii) through communities' leaders. Also, meetings had good facilitation led by members of Brightline Institute, INAPA, IDDI and the Ministry of Environment, so everyone had an adequate explanation of project goals, participants, etc.

The project team was responsive and open to adapting their plans and activities as required when information came from community members. Participatory approach increased community buy-in and ownership for sustainability of the programme efforts. Throughout stakeholders' analyses and consultation process, the project team used early-identified community champions to assist dissemination, data, meetings and consultations. Also, meetings had good facilitation led by Professors from UAFAM and members of Provincial Direction of the Ministry of Environment so that everyone had adequate explanation of project goals, etc., and the project team was responsive and open to adapting their plans and activities as required when information emerges from community members

The consultation process also promoted guidance about environmental issues (as public health, solid waste management, and education, etc.) and gender equality (and other aspects as domestic violence), and human rights, as outlined in the Adaption Fund Environmental and Social/ Gender Policy. This was evident through the hosting of the meetings; community representatives had equally access independently of their gender. A person spoke about his disabilities, but it was created a space for him, in order to secure his participation in community consultations and focus group sessions.

After to read the minute and review the accords with the community, all parties show their approval.

5.1 Other Partnerships

The project team partnered with the *Plan Estratégico de San Cristobal* (Strategic Plan for San Cristobal, or PESC) to ensure that the plans and implementation are sensitive to province's vision. PESC is available to and interested in the host the Provincial Climate Change Adaptation Monitoring Committee (Output 2.2) and to contribute to the programme long-term sustainability. Also, among other development structures, PESC already have established a water and sanitation-dedicated committee, so other cooperation opportunities and synergies have been identified¹².

¹² Plan Estratégico de San Cristobal is a public-private partnership created to promote a more inclusive and resilient development in the Province of San Cristóbal. PESC acts a multi-institutional and multi-dimensional cluster to promote: a) the province be entrepreneurial, modern, competitive and sustainable; 2) integration and social cohesion; 3) land planning and citizen security; 4) education, sport, art and culture; and 5) identity.

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6. Environmental and Social/ Gender Impacts

6.1 AF Social and Environmental Policies

1. Compliance with the Law

The following project activities will require permits and licenses from the respective institutions:

- Construction and/or rehabilitation of water supply infrastructure, as works for water collection, treatment, storage and distribution (piping) requires plans to be submitted to INAPA, the Ministry of Environment and Natural Resources, and communication to the municipality.
- Construction and/or rehabilitation of water infrastructure for agricultural/livestock purposes, as dams, waterways, and reservoirs, requires plans to be submitted to INDRHI through the Ministry of Environment and Natural Resources, and communication to the municipality.
- Clearing of vegetation and/ or re-forestation schemes shall be approved by the Ministry of Environment and Natural Resources to secure biodiversity and ecosystem not be damaged.

All infrastructure and facilities interventions will be located on public land (there are accords to these lands be provided by the community, municipality, private sector, third parties, or charity). Where proposed locations are on private properties, permissions were obtained from the owners. In these cases, permission must be granted to personnel to access the property for maintenance or check.

All infrastructure and facilities, and another material change in the infrastructure and/or buildings that require technical drawings which must be communicated to the Ministry of Environment and Natural Resources and INAPA or the acting municipality, according to with the nature of such changes. This includes any extension of buildings, changing of roofs, the addition of toilet facilities, movement of buildings, digging of cisterns and wells, waste collection, etc. The cost of such preparation and/or review is included in the budget of each intervention, but IDDI has required:

- (a) a grant to the Ministry of Environment and Natural Resources for its fees/ tariffs.
- (b) to INAPA to provides in-kind preparation and/or reviewing of the plans.
- (c) a grant to the respective municipalities for its fees/ tariffs/ municipal taxes.
- (d) a grant to DGII (National Direction for Internal Taxes) for tax exemption for local purchases.
- (e) several combination of the above-mentioned options.

All these resources will be used to fund as much concrete adaptation projects as possible. This has been consulted with institutions representatives, which are in favor and understand IDDI will require all of them when programme be approved by AF (inception phase). As main authorities on their respective areas, the Ministry of Environment and INAPA have designed all physical interventions, which are approved by default, and all permissions will be emitted as soon as the programme start.

2. Access and Equity

The geographical area that will be directly affected by the program includes 30 small rural communities belonging to San Cristobal (other 15 has been identified at feasibility level). The benefits of the

programme include inter alia:

- Upgrade the water infrastructure to deal with the climate impacts.
- Improved the public health and reduction of water-related diseases.
- Diversification the livelihoods which shall be affected by hurricanes, flooding, and droughts.
- Improve the water quality and availability for multiple uses and users.
- Hiring local people and communities' groups to build and to maintain the infrastructure.
- Work with the community to preserve water resources and use it more rationally.
- Create a sharing vision among the communities about climate change adaptation.
- Create more employment for vulnerable women and other favorable conditions.

Main beneficiaries of the programme are all members of the communities in the targeted areas, including private residents, community-based organizations, and micro, small and medium-sized enterprises (MSME). Specifically, community groups will benefit from education and training in water resources management (including soil and forest), improved infrastructure, and support for women, youth and vulnerable groups, technical assistance and more climate-resilient livelihoods.

The programme interventions do not have potential rivals, due to relevant government agencies with similar competencies. INAPA and the Ministry of Environment are execution entities within the programme. This permit streamlining, efficiency and viability of the proposed interventions.

The marginalized or vulnerable groups in the communities include the disabled, single mothers who are heads of households, the elderly including those who on a subsidized income (if any), small children and Haitian migrants of questionable immigration status and their children. All of these groups will receive equally the benefits from water supply and sanitation and adaptation opportunities.

Although climate change activities such as flooding and hurricanes affect everyone in its proximity it also results in gender-differentiated impacts. Vulnerable groups such as women, children, persons with disabilities and the elderly bear more burdens. Therefore, women's vulnerabilities has been assessed given their disproportionate responsibilities for domestic and child-care, reduced income, limitations to access to economic resources, and most vulnerable livelihoods.

Women participants in the public consultation and focus group discussion held in the community, sharing their experiences about how the dependence of deficient water supply have resulted in many difficulties for them. For example, they can't work if the health of their children is affected or if they need look for water from far distances. Extreme events, as storms and hurricanes, impact children's access to school and makes mobility difficult (for both genders) impeding them to travel around. Lack of mobility means a decrease in economic empowerment for all groups, particularly women since they may not be able to get to work or to participate in income earning activities.

Women also described how they need to buy bottled water for their households which drain a significant amount of their income. However, this does not secure the health of their families. Often, with poor water supply systems, it is usually followed by an equally poor health and hygiene as is demonstrated in this report, thus such conditions have caused many economic and social losses due to unsolved situations. Participants of the focus group within the community spoke about any health-

related problem for them or their families can result in significant losses.

Thus, the upgrade of the water infrastructure would mean that the water would flow more freely with less back-up and floods which would improve the lives of the vulnerable groups within the community and the overall lives of families and women and men. Haitian immigrants are especially vulnerable as they seek housing that is cheap or affordable, and feel they cannot complain if there is an issue with the water and/or sanitation services. The search for cheap housing may also explain the vast congregation of migrant groups in many communities, increasing their vulnerability.

On the other hand, there is a high propensity to employ women in domestic work caregiving roles, and services, including administrative and secretarial services, which characterizes the principle available employment options for women in almost all the country. Men are largely found in management and supervisory roles, and construction and operation, which all tend to be better paid, yet requiring no higher educational attainment. Further as discussed in the Country Gender Assessment elaborated by USAID, female workers are further made vulnerable by labor issues that are particularly gendered: sexual harassment, forced labor, inflexible working hours, low wages, fatigue, victimization, and unfair dismissals. Although the Dominican Labour Code talk about these issues (and many others), women still do not have enough protection for all them.

The programme will contribute to improving livelihoods and conditions of target communities. A significant amount of work must be done in Component 1 (mostly providing goods and services), not only to improve the infrastructure but to improve water quality. This have a positive impact on domestic economy, commercial activities and employment on systems building and operating.

This programme will not negatively impact access to education, working conditions or land rights. The components ensure that fair treatment for men and women, boys, and girls. It recognizes as enshrined in the adaptation-relevant gender policy the need for differential treatment that is fair and positively addresses systemic gender biases and discrimination due to gender roles and norms. The target vulnerable groups such as women and children with a key focus on achieving gender equality as an end goal. Therefore, the project will provide equal access for both men and women. However, since women, particularly single mothers are more vulnerable the project will ensure that provisions are put in place for vulnerable groups to benefit from programme activities.

3. Marginalized and Vulnerable Groups

The project targets marginalized groups who are affected and will ensure that there is no further disproportionate impact on these groups. Therefore, the impact of each activity, output, and outcome will be assessed to consider the impact on the vulnerable groups within the community.

Marginalized and vulnerable groups present in target communities include women and girls, disabled, single mothers who are heads of households, elderly including those who do not have any fixed income (pension), children and Haitians migrants (especially those of questionable immigration status) and their families. Specific vulnerabilities of these groups are described in *Access and Equity*.

Table 6: Migrant Population within Target Communities

Zone	Migrants (a)	Migrants (b)
Villa Altagracia	52	66
Medina	34	41
Los Cacaos	12	10
Cambita Garabito	50	40
Najayo	8	12
TOTAL	156	169

Source: (a) Self-identified as Haitian immigrant during Field Work; (b) National Immigrant Survey (2018)

The programme will be extended to cover more sites and/or beneficiaries (including other communities) if can meet its priority goals with economic and environmental efficiency.

4. Human Rights

The Dominican Republic has ratified important international treaties related to human rights, a the Convention against Torture and Other Cruel Inhuman or Degrading Treatment or Punishment (CAT), the Optional Protocol of the Convention against Torture (CAT-OP), the International Covenant on Civil and Political Rights (CCPR), the Second Optional Protocol to the International Covenant on Civil and Political Rights aiming to the abolition of the death penalty (CCPR-OP2-DP), the Convention for the Protection of All Persons from Enforced Disappearance (CED), the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the International Convention on the Elimination of All Forms of Racial Discrimination (CERD), the International Covenant on Economic, Social and Cultural Rights (CESCR), International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (CMW), the Convention on the Rights of the Child (CRC) Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict (CRC-OP-AC), the Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography (CRC-OP-SC), and the Convention on the Rights of Persons with Disabilities (CRPD).

Dominican Republic has no national human rights institution set up in accordance with the Principles relating to the status of national institutions for the promotion and protection of human rights (the Paris Principles). The country has established the National Commission for the Human Rights, created a Legal Aid Clinic to assist the poor and underprivileged in gaining access to courts. Migrants have been offered a route to citizenship by forgiving the gaps in their residency that prevented them from regularizing their status (National Regularization Plan for Foreigners)¹³. All programme activities and interventions have been developed and will be implemented within the International and National Human Rights Framework. The programme activities will ensure that the rights and freedom of all are protected. Also, the programme has also adopted a rights-based approach, grounded in internation-

¹³ Currently, IDDI works with UNHCR (UN Refugee Agency) to provide humanitarian assistance to Haitians migrants and their families in aspects as labor rights, migration status, education and health, and cultural integration. More information available at: <https://help.unhcr.org/dominicanrepublic/donde-buscar-ayuda/>

al principles and frameworks, according to the laws. Also, there is a robust grievance mechanism.

5. Gender Equality and Women's Empowerment

The programme activities need to ensure that it promotes a fair and equal access of men and women, and should take into consideration differential impact. The programme should also promote equal participation in decision-making processes by assuring women representation in key decision-making processes and a balance of representation in relevant programme forums and activities. A gender analysis was also conducted in each component to ensure that needs and realities of men and women are taken into consideration with further recommendations for mainstreaming gender.

6. Core Labour Rights

Dominican Republic has ratified 7 fundamental ILO conventions. The country has a comprehensive legislation to protect the labour rights in aspects as forced labour (C029), freedom of association and protection of the right to organize (C087), right to organize and collective bargaining (C098), equal remuneration (C100), abolition of forced labour (C105), discrimination (employment and occupation) (C111), minimum age (C138), and worst forms of child labour (C182). The programme will ensure that national working standards (Labour Code) are respected totally. Also, programme will ensure that appropriate wages will be paid per assigned task and that no child labor will be employed. Security and safety standards will also be respected and enforced and provisions for social security.

7. Indigenous Peoples

There are no indigenous people in the Dominican Republic, so this principle is not applicable.

8. Involuntary Resettlement

During the consultations, some participants expressed their concern about if the programme implies any involuntary relocation. Community leaders cited the recent experience (August 2016) of Valle Nuevo (a national park and protected area located in the middle of the country), where the Ministry of Environment and Natural Resources pulled out all persons living and/or working in such area, citing agriculture/livestock were polluting the biggest water resources of the country.

In all these cases, technicians explained the programme will not result in involuntary resettlements. No livelihoods or businesses will be at risk of involuntary resettlement as a result of the programme intervention, conversely in many cases is expected the land will increase its value and the demand of goods, services and labor also. In correspondence with AF's ESP, all activities that can result in any involuntary displacement of people or their livelihoods are considered as ineligible and are discarded in consequence.

Deleted: are expected to

For waterworks on private land, the Ministry of Environment and INAPA will consult and obtain the signed consent of property owners (similar the process through which roads and public areas are established and maintained). All these authorizations will be documented and socialized.

Deleted: For cases which a land use change can result in a displacement of economic resettlement (as re-afforestation), in accordance with the laws, the new activities will be defined with the affected people, which will be offered a similar job with similar payment

9. Protection of Natural Habitats

Some targeted areas host major natural resources that must be preserved under this programme.

Many areas within Los Cacaos, San José del Puerto and Villa Altagracia are an important habitat for many species (there is a protected area in the northwest of the province). The vulnerability of such areas is well documented and has been described in the programme's Environmental Impact Study. As such areas has been negatively affected by various factors over the years (mainly the deforestation to uses the land for agriculture purposes, the urban expansion, the illegal cut of trees to produce coal, extensive livestock, the discharge of wastewater, inappropriate solid waste disposal, etc.), the programme will reduce effectively the impacts of the human activity on the natural habitat, specifically with activities as re-afforestation and training of communities.



Figure 8: Contamination of Water Resources

Source: field visits (November 2017).

Most populated towns and nearby areas, shows several signs of contamination. As it was verified during field visits, in these such areas water sources receive constantly discharged oil, domestic grey water, septic effluents, and solid waste (in the form of plastics, garbage, paperboard, textile, paper, glass, batteries and appliances). There are places where fish are no present anymore. These fish kills have been due to reduced freshwater recharge (drought), depleted levels of oxygen, high water temperatures, discharge of potentially toxic elements and untreated sewage among others.

The programme interventions could cause some negative impacts in some areas (most of them in the construction of infrastructure) as the landscape modification, the generation of solid waste and eventual affectation on soils and air (pollutants, noise, dust, etc.). However, as is stated in the programme's Environmental Impact Study, by properly managing these risks, the programme will have significantly benefits to the ecosystem health, due to infrastructure and facilities will operate under an environment management system than avoid the foreseen impacts on the air, soil, water and biodiversity, and by increasing the freshwater recharge through improved infrastructure.

10. Conservation of Biological Diversity

Within the programme's Environmental Impact Study, a species inventory was prepared (which is annexed to this document). Among species presents are: Garza Ganadera (*Bubulcus ibis*), Aura Tiñosa (*Cathartes aura*), Petigre (*Tyrannus dominicensis*), Zumbadorcito (*Mellisuga minima*), Cigüita (*Coereba flaveola bananivora*), Cigua Palmera (*Dulus dominicus*), Nightingale (*Mimus polyglottos*), Cigua Saltarina (*Seiurus aurocapillus*), Rolita (*Columbina passerina*), Rana Lucia (*Celestus spp.*), Lagarto verde (*Anolis chlorocyanus*), Lagarto Cabezón (*Anolis cybotes*), Lagarto Común (*Anolis distichus*), Culebrita

sabanera negra (*Antillophils parvifrons*), Julian chivi (*Vireo altiloquus*), Zumbador Grande (*Anthraxot-horax dominicensis*), Carpintero (*Melanerpes striatus*), Cotorra (*Amazona ventralis*), Barrancoli (*Todus subulatus*), Guinea Cimarrona (*Numida meleagris*); and Perico (*Aratinga chloroptera*). None of these such species are threatened nor endangered¹⁴.

Introduction of invasive species presents a low risk to the programme, since the programme nurseries can propagate the species for planting and landscaping, and furthermore the programme will not introduce any exotic or invasive species. As activities that could promote the spread of invasive species is a greater risk, identification and control of invasive species will be necessary during project implementation, particularly under Component 1. The Programme will adopt agricultural practices that increase biodiversity compared to the baseline scenario, including conservation agriculture. However, the inclusion of the Ministry of Environment and Natural Resources ensures the proposed interventions respects and care the biological diversity¹⁵.

11. Climate Change

The programme is focused on climate change adaptation through sustainable water management which, from a climate perspective incorporates resilience (adaptation) but some mitigation of greenhouse gases (GHG) is possible (i.e., with the utilization of gravity-system based system that displaces pumps or increasing the forest cover in some areas). Some GHG emissions can occur by the increases of the energy consumption on productive and processing schemes.

All adaptation actions undertaken under the programme will need to be assessed constantly in order to understand whether they contribute to building of resilience under increasingly variable climate. Potential impacts on land use will also be registered, thus contributing to the assessment of GHG emissions reductions (mitigation) In this case, methodologies from IPCC will be utilized to account the GHG emissions, specially the default emissions factors for fossil fuel and electricity¹⁶.

12. Pollution Prevention and Resource Efficiency

Clearing of vegetation from the intervention areas, removal of solid waste, civil works, construction of infrastructure and facilities will all generate varying amounts of pollution as fossil fuels will be used to power equipment directly or indirectly (electricity generated by fossil fuels). There is also the possibility that construction debris and other forms of waste generated by the activities of the project may find its way into poorly-managed disposal sites (or even worst, water courses).

The programme carried out an Environmental Impact Study which describes strategies and actions to minimize waste and pollution production from programme activities, considering applicable local, national and international regulations regarding any waste and pollution, or minimization of resource

¹⁴ Results were compared with *Lista Roja de Especies en Peligro* published by the Ministry of Environment and Natural Resources. This inventory was cross-checked with The IUCN Red List of Threatened Species.

¹⁵ Infrastructure may impact biodiversity particularly in the construction and installation of facilities.

¹⁶ Regarding this matter, a good practice is to utilize the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, available at: <https://www.ipcc-nggip.iges.or.jp/public/2006gl/>.

use. Within the study, all such these activities and strategies (and measures to reduce or avoid such impacts) are differenced for Programme's construction and operational phases.

13. Public Health

Health is more complex than the absence of diseases. It is the result of interactions between individual characteristics and factors of the environment. Initial screening of the programme reveals the potential for many positive health impacts regarding avoiding water related diseases.

Additionally, when water is not managed properly creates ideal breeding environments for disease vectors such as mosquitoes. This includes the *Aedes aegypti* which is a known carrier for diseases such as Dengue, Chikungunya, Zika, Malaria and yellow fever, all of which have been positively confirmed in the Dominican Republic. Regarding to the Zika virus, the clear link between this virus and women's sexual and reproductive health and pregnancy outcomes have been established; specifically, the link to microcephaly. This condition affects the population and treats the tourism.

In screening of the program suitability, it was determined that a full Health Impact Assessment (HIA) would not be necessary due to the limited scope and scale of potential impacts of the programme interventions. The programme's Environmental Impact Study addresses health impacts. Additional support and interventions should be provided to those who need it particularly women with children.

14. Physical and Cultural Heritage

There are no physical heritage sites in the programme targeted area and no cultural heritage properties that may be impacted by it. The chances of damage to physical assets are zero.

15. Lands and Soil Conservation

The soils in the area were described in section 4.1.1. The soils are generally limited for agricultural purposes but are adequate for other uses in special if water availability is improved. There are no particular fragile lands that would be lost or degraded by the activities of this programme. Lands are expected to be preserved from erosion due to implementation of re-afforestation schemes. Also, the programme will have positive impacts on the landscape of the intervention areas through the establishment of agro-forestry systems and conservation agriculture. Soil conservation and restoring fertility is a key practice in smart-agriculture (which can be fostered with compost).

6.2 Identified Risks to the Programme

6.2.1 Component 1

This component refers to Community level implementation of climate resilient water resource management activities, which presents following impacts:

- **Environmental Impacts**

Clearing of vegetation will be necessary during construction of infrastructure and facilities (i.e., stations, tanks, ponds, dams, reservoirs, etc.). The vegetation around the place shall not contain any rare or vulnerable species and care must be taken that the removed vegetation not be dragged or dumped into water courses. Same applies for any other solid waste or organic matter.

Re-vegetation and re-afforestation schemes may result in the introduction of plant species which may out compete native plants, require extensive tending including watering. This is a special concern considering the scarcity of water in targeted areas. Also consider that some native plants grow very tall and become top heavy especially during the fruit bearing stage. They therefore need sufficient room for proper root development to support them. Inadequate plant source material for re-planting along the banks is also a consideration. The soil on the banks of the watercourse must not be left exposed to potential erosion especially from water which may carry the soil into the waterway.

Soil and water could be affected by inadequate disposal of solid waste, so all solid waste shall be stored appropriately and removed quickly. Construction activity may also generate solid and liquid waste such as oil from equipment which may pollute the soil and watercourses.

With the expected increase in temperature as a result of climate change, mosquito breeding can occur and this may exacerbate the vector problem and contribute to potential disease outbreaks. The *Aedes aegypti* (which is the vector for Zika, Dengue, and Chikungunya) breeds preferentially in stagnant water. Simply eliminating places where water can stagnate will ease this problem.

Interventions may create additional issues as noise, pollutants and dust. All these impacts can affect the flora and fauna, and even the nearby communities. This may occur if for example with excavations, operation of heavy machinery, and transit of trucks. Measurements to reduce such impacts limit operations to what is strictly necessary. Although these impacts are temporary and non-permanent, its incidence will be monitored during construction and post-implementation.

- **Social Impacts**

Conflicts with residents could occur due to in many areas, landowners have developed their agricultural practices, which not necessarily be open to change their current land use to other more sustainable in long-term. As well, many communities use to dump solid waste to watercourses. So, some degree of resistance is expected the programme shall invest into change the status quo.

Resistance of property owners to some mitigation measures (i.e. planting of trees, location of infrastructure, and clearing of vegetation) is highly possible. During consultations, residents were very aware and concerned about the sustainability issues and the problems of their communities. All of them are committed to support the programme efforts regarding dialogue with any third party in benefit of the programme implementation. However, the programme will need to raise awareness about the climate change expected impacts, and provide actionable solutions for all.

Fair allocation and access to programme interventions and resources (i.e., water), by all residents without discrimination is important. Community groups have members and are led by individuals whose mandate it is to look after the welfare of the members. Someone must be responsible and have final say in the use of assets owned or controlled by the groups. The possibility exists that some community members may be discriminated based on their status as a member of the group or the community, or based on the conscious or unconscious prejudices of those in charge.

The major challenge is that all these groups do not have the provision of this type of public service as their primary focus and so training must address this as well as preparation for maintenance.

- **Gender Impacts**

Since climate change is one of the most common hazards that affect the targeted communities (in form of more frequent and intense storms and hurricanes, and more frequent and prolonged droughts), the re-engineering of the water supply for consumption and agriculture will have a positive impact on the community. This is particularly important for women, which families will be less exposed to water-related diseases, will have less expenses purchasing drinking water, and will have more access to water for agriculture and livestock under climate change conditions.

As current participation of communities, and in particular women, is highly limited and results in a lack of transparency, inequity in access and distribution of water resources in planning and decision-making processes. One potential risk of the empowerment of the communities to manage their water resources is that men could dominate the process and the decision-making. A mitigation measure is to assign coordinator roles to women representatives of the communities.

Better access to water resources will reduce the domestic storage that can become the breeding for mosquitoes and other insects identified above which can increase vector-borne diseases such as Dengue and Zika, thus affecting women and children disproportionately. Pregnant women and women among childbearing age would be more vulnerable to the Zika virus. Since there are currently no vaccines to protect against the infection according to the World Health Organization, the improvement of the water infrastructure, will reduce any possible negative health impact.

In general, potential gender impacts of the Component 1 will be positive for vulnerable women as much as can be for the whole communities.

6.2.2 Component 2

This component refers to Capacity building and capacity development in key institutions and communities to manage long-term climate change-related risks, which presents following impacts:

- **Environmental Impacts**

There are no foreseeable impacts or risks to the environment associated with this component.

- **Social Impacts**

Consultations with key institution and community-based organizations revealed that a good strategy for communication could maximize the programme impacts beyond San Cristobal. As different ways of dissemination (i.e., social media, infographics, papers and dissertations) has been considered, all these such materials should be women/youth-focused since its designing. Consulted suggested that same materials be focused for different actors (as church, schools, etc.) so these institutions can share them with their peers within and/or outside from San Cristobal.

In relation to livelihood diversification activities, such as community training, regular visits, and field

demonstrations shall be done, and also training of extension workers (giving them skills and hands-on experience). This extension workers, who are capable of appreciate and operationalize livelihood adaptation to climate change, can to extend similar support to other communities.

Dissemination of programme results and outcomes will permit to replicate it in other places. As well, the availability of a learning platform can to help to communities to be more accuracy towards other adaptation initiatives. Activities as awareness raising, training and technical assistance for implementation of sub-projects will be carried out by relevant agencies, universities and NGOs. The programme has identified a significant base of NGOs working directly in targeted communities.

Regarding the Provincial Climate Change Adaptation Monitoring Committee established in San Cristóbal, and is discusses above, programme can to establish a partnership with Plan Estrategico de San Cristóbal (PESC) to create the committee and for its long-term sustainability. In this case, PESC can be benefited due to the inclusion of the climate change perspective into San Cristobal long-term vision and strategic lines towards development, sustainability, inclusion, and welfare.

- **Gender Impacts**

Men and women should be fully involved in capacity building to manage long-term climate change-related risks. This Component provides an opportunity for community members and key institutions to sustain the adaptation efforts. Women will be considered equal partners in the materials design, who bring unique skills and creativity to climate change adaptation measures.

A potential risk of this component is that systemic gender roles and norms might act as a barrier to women's participation and inclusion in community initiatives to adapt to climate change. Men and women from diverse groups should have the opportunity to participate actively in the planning, design, and implementation of the communication strategy. Together they can work on other aspects as early warning systems; disasters risk management, and protection of livelihoods.

6.2.3 Other Measures

Other actions contributing to reduce the risks are:

- Multi-party agreements will be established to design, implementation and monitoring of sub-projects and specific activities. These agreements will include the process for ensuring that programme funds are distributed specifically to the local communities.
- Stakeholder participation at all programme levels will ensure adequate planning and execution of activities in line with the programme objectives and with the local development and stakeholder priorities, and complementarity with other ongoing and planned interventions.
- Consultative groups will be established to ensure engagement of beneficiaries, to help identify and prioritize activities and interventions as well as to overview the implementation and progress of the targeted activities at field level. These groups include representatives from beneficiary groups, implementing partners, cooperatives, churches, local clubs, and NGOs.

Appendix 1: Matrix of Impacts (Construction)

Element	Impact	Type	Magnitude	Scope	Term	Persistence	Reversible	Synergy	Importance
Soil	Topographic changes	-	1	1	1	2	2	2	-12
	Soil Waterproofing	-	1	1	1	2	2	1	-11
	Vegetal layer loss	-	1	1	1	2	2	2	-12
	Contamination by hydrocarbons	-	1	1	1	1	1	1	-9
Air	Dust	-	1	1	1	1	1	2	-10
	Air Pollutants	-	1	1	1	1	1	2	-10
	Noise	-	1	1	1	1	1	2	-10
Water	Affectation of groundwater	n/A							
	Surface water affectation	n/A							
Flora	Vegetation clearing	n/A							
Socioeconomic	Impact of local transit	-	1	1	1	1	1	1	-9
	Improvement of the local economy	+	3	3	3	2	1	2	23
	Dynamism economy of women	+	2	2	2	1	1	2	16
	Improvement of the quality of life	+	2	2	2	1	1	2	16
	Increase in the supply of employment	+	2	2	2	1	1	2	16
	Improvement of infrastructure services	+	3	2	3	2	1	2	21
Positive Impacts		92							
Negative Impacts		-83							
Balance		5							

Source: Environmental Impacts Study of the Programme (November, 2017)

Appendix 2: Matrix of Impacts (Operational)

Element	Impact	Type	Magnitude	Scope	Term	Persistence	Reversible	Synergy	Importance
Soil	Soil Contamination	-	2	1	2	1	1	2	-14
Air	Dust	-	2	1	1	1	1	2	-10
	Air Pollutants	-	1	2	1	1	1	2	-12
	Noise	-	1	2	1	1	1	2	-12
Water	Stress over the resource	-	1	1	1	1	1	2	-10
Flora	Vegetation Recovery	+	2	1	3	2	1	2	16
Socioeconomic	Stress on local transit	-	1	1	1	2	1	2	-11
	Improvement of local economy	+	2	2	3	2	1	2	18
	Improvement of quality life	+	2	2	3	2	1	2	18
	Jobs increase for women	+	2	2	2	2	1	2	17
	Real state value	+	2	2	3	2	1	2	18
Positive Impacts		+87							
Negative Impacts		-69							
Balance		+18							

Source: Environmental Impacts Study of the Programme (November, 2017)

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Project Proposal Development

Enhancing climate resilience in San Cristóbal Province,
Dominican Republic – Integrated Water Resources
Management and Rural Development Programme

ClimaSanCristobal

Environmental and Social Management System Plan

Annex 8. Environmental and Social Management System Planning

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Content

1. Overview on ESMP	1
1.1 Strategic Approach	1
1.2 Key Premises	2
1.3 Responsibilities	3
1.4 QA / QC	4
1.5 Foreseen Synergies	4
2. Programme Risks	6
2.1 Risk Scoring	6
2.2 Programme Categorization	13
3. E&S + Gender Impacts	15
3.1 Consultations	15
3.2 Risks by Component	15
4. E&S Management Plan	18
4.1 Relevant Criteria	18
4.2 EMSP Process	19
4.3 Implementation Arrangements	20
4.4 Safeguards for ESMP	26
4.5 Programme Assurance	27
4.6 Risk Management	27
4.7 Quick Tool	28
4.8 Ineligible Activities	29
4.9 Public Consultations	29
4.10 Grievance Mechanism	29
5. MRV Arrangements	32
5.1 Roles and responsibilities	32
5.2 Risk Registry	33
5.3 Appraisal by PSC	33
5.4 Recommended Interventions	35
5.5 Feedback	35
5.6 Annual audits	35

Acronyms

AF	Adaptation Fund
IAS	Environmental and Social Impact Study
EIA	Environmental Impact Assessment
GHG	Greenhouse gases
IDDI	Dominican Institute of Integral Development
INAPA	National Institute of Drinking Water and Sewerage
INDC	Intended Nationally Determined Contributions
INDRHI	National Institute of Hydraulic Resources
MSME	Micro, Small and Medium-sized Enterprises
NGO	Non-governmental organization
PESC	Strategic Plan for San Cristobal
ESMSP	Environmental and Social Management System and Plan
E&S	Environmental and Social
ESP	Environmental and Social Policy (of Adaptation Fund)
NIE	National Implementing Entity
QA/QC	Quality assurance/ Quality Control
USP	Unidentified Sub-Project
PMU	Programme Management Unit
PSC	Programme Steering Committee
PEB	Programme Executive Board

1. Overview on ESMP

The programme, titled “**Enhancing climate resilience in San Cristóbal Province, Dominican Republic – Integrated Water Resources Management and Rural Development Programme**” aims to enhance the resilience and enhance the resilience and adaptive capacity of rural livelihoods to climate impacts and risks on water resources in the San Cristóbal Province. This objective will be achieved through key results centered on the improvement of water access and also increase institutional and community capacity and coordination for integrated water management to support other uses of water resources especially for the diversification of livelihoods by rural communities.

Such main objective is organized according to two main outcomes: (1) Implemented climate resilient management of water resources in 30 small communities of San Cristóbal (under **Component 1: Community level implementation of water resource management activities**); and (2) Increased technical capacity of communities and institutions to assess impacts, vulnerability and adaptation needs according their respective competences (under **Component 2: Capacity building and capacity development to manage climate-related risks**).

All the programme's environmental and social risks are summarized within the Environmental Social Management System and the resulting plan (ESMS). The ESMS implementation is responsibility of the accredited National Implementing Entity, the Dominican Institute of Integral Development (IDDI).

This ESMP was developed by conducting studies and consultations over the past two years. After several consultations and technical reviews, environmental, social and gender considerations were reinforced for Components 1 and 2 and were integrated into the project design. This approach was also important to maintain the sustainability of the outputs of the components itself. The integrated approach is therefore such that components themselves are mitigation measure for environmental and social risks, and to further improve the likelihood of overall of programme impact and success.

Understanding that the programme design is in itself a response to meet social and environmental/gender considerations, the programme implementation may have unintended negative impacts. This ESMS summarizes all identified potential risks, and the Management Plan communicates the process and strategy by which IDDI and executing entities will comprehensively identify and manage risks.

1.1 Strategic Approach

IDDI is a NGO that was accredited to the Adaptation Fund as National Implementing Entity¹. As a Entity with vast experience implementing development projects and programmes, understand that management of environmental and social issues are not only dictated by the policies of the funding agencies but also the national laws, policies, project management and financial principles. The ESMP

¹ More info at: <https://www.adaptation-fund.org/ie/dominican-institute-of-integral-development-iddi/>

approach is to streamline all these requirements and, where appropriate, provide separate outcomes documents/reports². The ESMP approach could also to collaborate with (or to serve to) other projects being implemented by the IDDI, institutions and/or communities of San Cristobal, and incorporated within the M&E process. This improves efficiency and provides other options for risk management and to track how such initiatives are contributing with climate change adaptation.

The nationally established process to manage the process for the identification of risks related to environment and social (E&S) is the Environmental Impact Assessment (EIA) process defined by the Ministry of Environment and Natural Resources. This process is predicated on detailed baseline studies used to identify risks and the EIA process is generally streamlined to focus on those issues that pose a risk to the programme. Although AF Environment and Social Policy (ESP) can be handled separately for the government process, some aspects of ESP have been streamlined and incorporated within the followed EIA (mainly to be efficient and to include gender issues, which are not typically included in national process). Summarizing, the approach for this Management Plan is to use the EIA process, but have a specific E&S and gender screening process and report.

Further to the approach above, the ESP will normally be tracked as part of the overall Monitoring and Evaluation plan of the programme (M&E). This plan will be a subset of this overall M&E plan but will have its own special reporting procedures. This will reflect that the overall project risks are not limited to the ESP, which is particularly important in the context by the nature of the programme.

Further, ESMS also notes that there were pre-existing conditions within the programme targeted sites that would have relevance to the ESP but these are not the results of the climate change impacts. As targeted areas are low-income communities and as such, there are many pre-existing social and environmental factors that pre-date the project. The AF programme scope and budget, limits the programme to address the impacts of the climate aspects of the project and ensure that the impacts of climate change do not further exacerbate within the issues in the targeted area.

IDDI is however working with relevant key institutions (water and sanitation, environment, forestry, agriculture, irrigation, etc.) to include them as members of the Programme Executive Board to ensure that the project is coordinating with appropriated institutions to reduce risks, increase efficiency, and to maximize any potential synergies with other government and/or community initiatives.

An important feature of the proposed programme is the nature of Component 1, which does not need a separated environmental and social management approach, while component 2 does not implies any negative impact. So the ESMS take advantages of EIA process, and consequent individual and/or cross cutting risks identified and strategies developed and increasing the programme success.

1.2 Key Premises

The major underlying assumptions for the development of the ESMS are:

- Not all AF's Environmental and Social Principles are equally relevant to the project; some of them

² For example, the Ministry of Environment and Natural Resources could require a rigorous Environmental Impact and Assessment (EIA) process, while Adaptation Fund requires separate ESP screenings and reports.

are not relevant to the Dominican Republic or to this programme specifically;

- IDDI is a NGO with limited access to best locally available technical expertise in all fields required by the programme (including social and environmental safeguards), so it's necessary to develop partnerships with key government institutions, community-based organizations, local NGOs, and even individual (academics, experts, consultants, advisors, etc.);
- There are pre-existing socioeconomically and environmental factors that may not be solved by programme implementation. The ESMP is designed to ensure that the actions and outputs of the programme do not further exacerbated existing social and environmental problems;
- The programme is designed to address environmental and social issues related to the risks of climate change, but procuring an appropriated adaptation;
- Under AF mandate for NIEs, risks related to the programme execution may be shared and/or transferred to another entities with key relevant expertise and capabilities (i.e., INAPA, Ministry of Environment and Natural Resources, Community-based organizations, Local NGOs, etc.).

The Management Plan measures are therefore based on the above-mentioned assumptions along with the historical, cultural and environmental knowledge of both the country and targeted areas.

1.3 Responsibilities

Programme risks and ESMS implementation will be managed by IDDI, through the PMU (Programme Management Unit). IDDI will use its staff, PMU and independent consultants to effectively monitor the environmental and social/ gender impacts. PMU staff will be highly trained individuals in many specialized areas, while relevant qualifications and experiences of IDDI members were provided to AF during NIE accreditation process. PMU staff will be concluded and provided during the pre-inception phase. The PMU will undergo sensitization in the AF ESP and other key AF policies and expectations.

A top executive from IDDI (PR) and the Programme Manager (PM) will be responsible for the day-to-day management of project risks and the Programme Steering Committee (PMS) will regularly assess progress and take necessary decisions when a change is required. These individuals (PR and PM) will be the contact persons to the AF and will provide reports to the AF, government and communities.

Also, IDDI will be the responsible for the management of the Environmental Impact Assessment (EIA) process, and the Ministry of Environment and Natural Resources will oversee its performance in behalf of the government of the Dominican Republic. Besides the Ministry of Environment holds programme key relevant agencies (i.e., INAPA) also works closely with other key Ministries (as Agriculture, Public Health, Public Works, etc.), so it can request to other agencies to conduct other additional site assessment and/or consultations, including private or public applications³.

Component 1 will also be monitored by the appointed staff of the Ministry of Environment and Natural Resources and INAPA, which comprises engineers (electromechanical, environmental, civil, hydraulic and sanitary) and architects. Other professionals and technicians will by private sector en-

³ This ministry is the National Designed Authority and Focal Point for relevant international funds regarding environment and climate change. This can serve to avoid risks of duplicity, identify synergies with other initiatives.

gineers, consultants and experts that will be hired on contract for on-the-ground interventions. Also, a legal professional (lawyer) from IDDI will also provide assistance to the PMU if necessary.

1.4 QA / QC

After concept note approval, the programme did the necessary internalization process to further incorporate the programme actions into the programme work plan and risk management processes (as is stated in programme schedule and in accordance with individual sub-projects already defined). At the same time, project risks were further identified and sufficiently detailed to inform necessary policies and regulations (where appropriate) was obtained. Finally, baseline data was collected to support project M&E and the generation of specific reports to meet AF ESP requirements.

During the pre-inception phase (period between programme approval and the start of first activities), programme risks will be further appraised and potential or latent risks (not envisaged at design or development stage, but which may occur from project activities) will be flagged, in line with the contingencies plan developed as part of the EIS. This is a good project management practice, which is consistent with a comprehensive risk management approach. In addition to project monitoring, this step will be important to ensure that due diligence is taken to mitigate against pre-existing social issues that the project cannot solve but may however have an impact on programme overall success.

1.5 Foreseen Synergies

The programme does include neither funds nor activities from other programme/projects. However, envisaged potential synergies, always within the law and AF relevant policies, are:

- **Surprise Visits:** an ongoing program where the President visits vulnerable communities and motivate to formalize and organize them in order to receive soft loans from the government.
- **Water Table:** established by the President within the Ministry of Economy, Planning, and Development as an intersectorial coordination body to preserve the country's water resources.
- **Water Bill:** Since 2000, the Congress discusses a bill to regulate the use of water resources. A positive coordination and communication with the Ministry of Environment -which coordinates environmental policy- can facilitate the inclusion of potential Programme results and outcomes in the law when be approved. This approach could be useful to gain a complementary regulation.
- **Water Users Associations (ASOCARs):** ASOCARs are community-based organizations which develop the water infrastructure with INAPA, operate and maintain such infrastructure and is responsible of its long-term sustainability, including establishing of tariffs for all uses and users.
- **Progressing with Solidarity:** implies conditional cash transfer to target vulnerable populations (as single mothers, elderly and persons with disabilities). It has also contributed to the creation of a social provision network (micro and small businesses) in priority areas of poverty, to which have access programme beneficiaries, ensuring the availability of basic food basket and strengthening small businesses by increasing their income and their integration into the formal banking system.
- **SENASA:** is a subsidized regime primarily insures low-income households. Insurance coverage overall varies from 42% in the poorest income quintile to 70% in the highest. As coverage under these schemes grows, the government looks to promote prevention in order to reduce the public health expenses (or at least to re-allocate it in other areas or sectors).

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Environmental and Social Management System Plan

2. Programme Risks

The screening process for overall programme risks included two independent processes: (1) a general project risk for all detailed risks, and (2) a special process to include the AF's ESP. The first one is done via the EIA and other processes to meet national environmental regulations and other decision-making requirements. The last one is to meet AF requirements to fund the proposed programme.

Both the above-mentioned processes were carried by IDDI, with support and assistance from officials from Ministry of Environment and INAPA, to streamline the process and to ensure consistency. The ESMS was conducted by independent consultants which included: AF Policies; national relevant regulation for EIA; consultation with technicians, professionals, communitarians and experts; detailed environmental and social studies within San Cristobal (carried by INAPA); the INDC of the Dominican Republic, historical registries of extreme weather impacts, and data from other third parties.

The programme thereafter was screened for environmental and social factors to meet the following:

- The Adaptation Fund's fifteen (15) Environmental and Social Principles, as described in the Environmental and Social Policy⁴. The AF's *Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy* and *Guidance document for Implementing Entities on compliance with the Adaptation Fund Gender Policy*⁵ were also used as a reference documents throughout the risk identification and management process.
- The EIA requirements are the dictated by the laws of the Dominican Republic (Law 64-00) and other regulations adopted by the Ministry of Environment and Natural Resources, specifically the *Guidelines for Social impact assessment* and *Guidelines for Environment impact studies*. As is requested by the Dominican regulation, the factors addressed during the EIA were more specific to the San Cristobal province, and risks associated specifically to the targeted areas.

2.1 Risk Scoring

According to current environmental regulation, a risk management scoring methodology was utilized for all significant risks than can occur during the programme implementation (both for construction and operational stages). Typically, is required by the authorities that this methodology shall to include both a qualitative and quantitate assessment of risks and impacts, but quantitative approach has priority for all foreseen risks. In the case of the proposed programme, the risk analysis was performed according to following criteria to determine the identified risk relevance:

⁴ AF's E&S Policy: https://www.adaptation-fund.org/wp-content/uploads/2013/11/Amended-March-2016_-OPG-ANNEX-3-Environmental-social-policy-March-2016.pdf

⁵ Documents are available at: <https://www.adaptation-fund.org/apply-funding/policies-guidelines/>.

- o the probability of occurrence of the event arising (likelihood); and
- o the consequences of the event on the programme (impact) if it occurs.

Table 1 below summarizes the adopted risk-scoring.

Table 1: Programme Components, Outputs, and Outcomes

PROBABILITY (P)	IMPACT (I)	RELEVANCY (R)
<p>If relevant data is available, it can be a mix of the future probability and the frequency of past occurrences.</p> <p><u>Very unlikely</u> (1): The event has never happened or is very unlikely to happen (i.e. more than once in 20 years).</p> <p><u>Unlikely</u> (2): The event has only happened once in the last 5–10 years or is unlikely to happen in the next ten years.</p> <p><u>Likely</u> (3): The event has happened once in the last 2–4 years or is likely to happen in the next 2–4 years.</p>	<p>It does refer to the ability to deliver, continuity of operations, financial and/or resource losses and affectations on credibility.</p> <p><u>Low</u> (1): programme can still achieve its objectives with limited constraints/ delays.</p> <p><u>Minor</u> (2): programme can still deliver and achieve its objectives, but not fully or in timely manner.</p> <p><u>Moderate</u> (3): The event hinders programme, its objectives or the systems (partial or totally).</p>	<p>The relevance (score rate) can be calculated mathematically as:</p> $R = P \times I$ <p>Where: R = relevance (importance, seriousness, or overall risk level) P = probability I = Impact risk</p> <p><u>Low</u> = 1 to 3 <u>Mid</u> = 4 to 7 <u>High</u> = 7 to 9</p>

Following table summarizes the programme risks categorization according the adopted scoring.

Table 2: Baseline Assessment and Risk Categorization

AF's E&S principles	Compliance with AF Principles	Relevance for the Programme
1. <i>Compliance with the Law</i>	The Programme (and all sub-projects) has been designed to comply with relevant national laws, regulations and policies. Compliance with laws and, in particular the following key Legislation, will be monitored during implementation : - Law on the Environment and Natural Resources (64-00) - Law of Protected Areas (202-04) and its modifications - Freedom of Information Law (200-04) for key institutions	P = 1 I = 3 R = 1 x 1 = 3 (Low)
2. <i>Access and Equity</i>	Equity begins with the programme staff, and then with the approaches and processes in project design and finally in project implementation. IDDI approach to access and equity is enshrined in its Code of Conduct and Ethics ⁶ , which staff	P = 2 I = 2 R = 2 x 2 = 4 (Mid)

⁶ Código de Conducta y Ética del IDDI. http://iddi.org/file/repository/Codigo_de_Etica_y_Conducta.pdf

	<p>and consultants are required to sign and adhere throughout their service to the programme (including provision for Conflicts of Interest and Confidentiality).</p> <p>The intervention logic of the Programme is to provide benefits in most vulnerable communities with fair and equitable access to activities, equipment, resources and training throughout both planning and implementation phases. It's necessary note than targeted areas count over 4,200 households (which means over 12,200 poor women) that would need additional resources and assistance to build resilience.</p> <p>All groups which participation has been requested have an equal opportunity to access to the activities proposed by the Programme. Eligibility criteria of the Programme has been clear and transparent, and it was defined together with relevant stakeholders, including local authorities.</p> <p>Programme interventions were designed to remove barriers as: difficulty of access to water resources; vulnerability in terms of biophysical and climate risks; social vulnerability; and as defined selection criteria. Through these criteria, the Programme assured participation of less endowed groups, including women, elderly and particularly poor people.</p> <p>Fairness and access to contracts under the programme, particularly local micro and small businesses, is guaranteed through a Department's procurement rules, oversight by Programme Steering Committee (PSC) and planned audits.</p> <p>The proposed Programme's results framework will measure developments related to 'access and equity for vulnerable groups' throughout the Programme duration. Components and activities are designed in consequence.</p>	
<p>3. <i>Marginalized and Vulnerable Groups</i></p>	<p>The Programme focuses on marginalized and vulnerable groups (women, youth, elderly without fixed income, etc.) and aims to assist them to improve their water supply and sanitation access thus its living conditions. A particular focus has been placed on single mothers who are vulnerable and dominicans citizens decedents from Haitians and immigrants (especially those of questionable status) and their families⁷.</p> <p>The project will be focusing on reducing the specific impacts of climate change by building resilience in the environment, with both individual households and community services (under Component 1). In this way, all vulnerable groups are expected to be positively impacted notwithstanding pre-existing non-climate factors affecting these persons (under</p>	<p style="text-align: center;">P = 2 I = 2 R = 1 x 2 = 4 (Mid)</p> <p>Potential impacts will be monitored to ensure they don't affect to any marginalized groups.</p>

⁷ IDDI is the Dominican Republic's UNHCR's implementing partner for humanitarian assistance regarding dominicans citizens decedents from Haitians and immigrants and their families. The humanitarian assistance program entails emergency support for them by providing material assistance, specifically housing, food and health, as well as psychological support and legal assistance. <https://help.unhcr.org/dominicanrepublic/en/where-to-seek-help/>

	<p>Component 1 and Component 2). The Programme does not have negative impact on these groups.</p> <p>The climate risk awareness activities of the programme, and the community-based water resources management plans, will provide detailed assessments on the impacts of events as droughts, floods, storm and hurricanes. This information (which will be based on the last IPCC AR) will be used to make planning decisions and will also be used by the local community organizations and institutions. It is likely that these such studies will find some properties that will be impacted and may cause the property values to decline.</p>	
4. Human Rights	<p>The Dominican Republic is a democratic nation that ratified important international treaties related to human rights as: <i>Torture and Other Cruel Inhuman or Degrading Treatment or Punishment (CAT)</i>, <i>Civil and Political Rights (CCPR)</i>, <i>abolition of the death penalty (CCPR-OP2-DP)</i>, <i>Protection of All Persons from Enforced Disappearance (CED)</i>, <i>Elimination of All Forms of Discrimination against Women (CEDAW)</i>, <i>Elimination of All Forms of Racial Discrimination (CERD)</i>, <i>Covenant on Economic, Social and Cultural Rights (CESCR)</i>, <i>Protection of the Rights of All Migrant Workers and Members of Their Families (CMW)</i>, <i>Rights of the Child (CRC)</i>, <i>involvement of children in armed conflict (CRC-OP-AC)</i>, <i>sale of children child prostitution and child pornography (CRC-OP-SC)</i>, and the <i>Rights of Persons with Disabilities (CRPD)</i>.</p> <p>The programme will ensure that national working standards (Labour Code) are respected totally. Also, programme will ensure that appropriate wages will be paid per assigned task and that no child labor will be employed. Security and safety standards will also be respected and enforced.</p> <p>The Programme affirms the fundamental rights of people in targeted areas, and thus does not affect their freedom. Furthermore, the Programme does not integrate any activities contrary to custom law or traditions. Participation in the Programme will be participatory, voluntary and free. IDDI and key executing institutions have a demonstrated track record of respecting and to promoting human rights⁸.</p>	<p>P = 1 I = 3 R = 1 x 3 = 3 (Low)</p>
5. Gender Equity and Women's Empowerment	<p>In general, in the Dominican Republic, the national laws and programs are equal for men and women, but in the practice, men have better access to education, jobs, credit, and other</p>	<p>P = 1 I = 3 R = 1 x 3 = 3</p>

⁸ The Ministry of Environment has a track record of protecting and promoting human rights, and an online complaints mechanism is available to the public at <http://ambiente.gob.do/denuncias-ambientales/>. The risk is that persons do not know their rights, so IDDI will promote awareness of human rights during project implementation.

	<p>consumer items, so they are better able to get life quality⁹.</p> <p>The programme impacts however may not be equally known and accessible to both genders, due to vulnerable women (mainly those who are head of family) does not have enough time to participate in community institutions and/ or any community-based development activities¹⁰.</p> <p>However, independent literature, government reports, and consultation with communities and institutions, points that women will disproportionately benefit by programme interventions. The programme logical framework foresees direct participation for women and women’s associations so they can benefit directly from the activities (mainly women that are single mothers and/or head of households).</p> <p>Under Component 1, the Programme proposes to support to develop more sustainable income generating activities (ASOCARES) and improve thereby their living conditions, therefore also empowering them in the context of a traditional and male-dominated society. This includes, but not limited to, prioritizing women for programme employment and any demand of goods and services.</p> <p>The greatest risk to equity under this project is poverty and poor men, women, children who are the most at risk for not benefiting from project impacts. However, Component 2 was designed to ensure that even poor persons particularly women who cannot access to resources for climate adaptation, can immediately benefit from resilience building from Component 1. Over time and with the success of other national social and welfare programs, these persons will have future access to the long-term benefits of Component 2, in form of capacity building, empowerment and training.</p>	<p>(Low)</p> <p>Potential impacts will be monitored to ensure women’s participation, and empowerment.</p>
<p>6. Core Labour Rights</p>	<p>The Dominican Republic is a democratic nation that has ratified 7 fundamental ILO conventions. The country has a comprehensive legislation to protect the labour rights in aspects as <i>forced labour</i> (C029), <i>freedom of association and protection of the right to organize</i> (C087), <i>right to organize and collective bargaining</i> (C098), <i>equal remuneration</i> (C100), <i>abolition of forced labour</i> (C105), <i>discrimination</i> (employment and occupation) (C111), <i>minimum age</i> (C138), and <i>worst forms of child labour</i> (C182).</p> <p>The programme will be implemented in compliance with legislation including the Labour Code. No child labour nor forced labour is expected to result from this programme.</p>	<p>P = 1 I = 3 R = 1 x 3 = 3 (Low)</p> <p>Monitoring on core labour rights will be undertaken throughout the programme.</p>

⁹ Dominican Republic - Poverty Assessment: achieving more pro-poor growth. Prepared by the World Bank. Available at: <http://documents.worldbank.org/curated/en/295161468236090493/pdf/32422.pdf>.

¹⁰ Incorporating a gender perspective in rural water and sanitation projects: experience of MUDE (Women in Development, Dominican Republic). Country Report. Available at: <https://www.ircwash.org/resources/incorporating-gender-perspectiverural-water-and-sanitation-projects-experience-mude-women>

	<p>Core labour rights concern gender, respect, work hours, etc. and any labour standard will be observed and respected on infrastructure interventions and new production facilities.</p> <p>Also, the programme will also ensure that appropriate wages will be paid per assigned tasks, and that no child will be employed. Social security drivers (i.e., access to first aid, health insurance, etc.) will also be respected and enforced.</p>	
7. <i>Indigenous Peoples</i>	n/A	n/A
8. <i>Involuntary Resettlement</i>	<p>Water supply and sanitation services do not require any resettlement and re-afforestation schemes are focused on providing socio-economic benefits to communities living in targeted areas. Consequently, there will be no involuntary resettlement under the programme and mechanisms are in place to ensure projects do not result in involuntary resettlement. In cases where any activity (physical intervention or land use change) can displace people or their livelihoods, such activity are considered as ineligible and will be discharged. IDDI's Environmental and Social Policy states its commitment with AF to not support "any resettlement of people or the removal or alteration of any physical cultural property"¹¹.</p> <p>One impact on the Programme would be if the construction works within the Component 1 would need equipment that could not be able to reach all targeted areas, so building of access might be necessary. This potentially might slow down the work and increase costs if property owners believe their property boundaries are being infringed on. Public consultations suggest that this risk is low because there is high awareness and concern about Program benefits impacts, and its transparency.</p> <p>Baseline studies did not identify any significant formal or informal livelihood-based economic activities within the area that shall be affected by the programme interventions. Public, municipal, or organizational lands will be used to avoid any conflict with third parties that be landowners. A grievance/ complains mechanism will be put in place in order to protect any potential affected by the programme.</p>	<p>P = 1 I = 2 R = 1 x 2 = 2 (Low)</p>
9. <i>Protection of Natural Habitats</i>	<p>Programme activities under Component 1 will be carried out on areas already under usage. As the programme aims to rehabilitate and protect natural habitats through ecosystem-based adaptation measures, the programme will teach practices to dispense traditional agriculture, therefore reducing pressures on ecosystems.</p> <p>Furthermore, the program will work with measures for water conservation (Output 1.3) to limit the runoff and soil</p>	<p>P = 1 I = 2 R = 1 x 2 = 2 (Low)</p> <p>Monitoring on natural habitats will be undertaken throughout the</p>

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Deleted: an economic activity (as re-afforestation), in accordance with the laws, the new activities will be defined with the affected people, which will be offered a job with similar payment

¹¹ Declaración de la Política Social y Ambiental (declaración de compromiso con el Fondo de Adaptación): http://iddi.org/file/repository/Declaracion_Politica_Ambiental_y_Social_del_IDDI.pdf

	<p>erosion in the selected areas. As well, it will reduce the use demand of more water-demand products, agro-chemicals and other substance that's pollutes the soil and the water.</p> <p>Programme may cause negative impacts on the biophysical environment (as noise, pollutants or solid waste during the construction of infrastructures), if activities are not monitored consequently. The Law 64-00 and Law 22-04 protect any area identified as Protected. So, the relevant protected areas of San Cristobal will be protected from further development. No protected areas are affected by the programme.</p>	<p>programme</p>
<p>10. Conservation of Biological Diversity</p>	<p>The Programme will adopt agro-forestry practices that increase biodiversity compared to the baseline scenario, including conservation agriculture. Further, the programme will not introduce any exotic or invasive species in the targeted areas. However, as noted before, water storage facilities and irrigation may impact biodiversity particularly when areas need to be cleared to build new facilities.</p> <p>Programme may cause negative impacts on the biological diversity, if activities are not monitored consequently. Habitat and species protection and monitoring will be consistent with the Law 64-00 (environment and natural resources) and the Law 22-04 (protected areas). No endangered or threatened species are located on the programme targeted areas.</p>	<p>P = 1 I = 2 R = 1 x 2 = 2 (Low)</p> <p>Monitoring on flora/fauna affectations will be undertaken.</p>
<p>11. Climate Change</p>	<p>The Programme is focused on climate change adaptation through sustainable water management which, from a climate perspective, incorporates resilience (adaptation) and reduction or removal of greenhouse gases (mitigation).</p> <p>All adaptation actions undertaken under the umbrella of this programme will need to be assessed constantly in order to understand whether they contribute to build resilience under increasingly variable climate. The final assessment of the Programme as well as the socio-climatic vulnerability assessment will support achieving this principle.</p> <p>Potential impacts on land use will also be registered, thus contributing to GHG emissions assessment (for mitigation and/or sinks). However, some minor GHGs emissions can occurs due to the fossil fuel and electricity consumption on building infrastructure, facilities and operations, which will be monitored during programme lifespan.</p>	<p>P = 1 I = 1 R = 1 x 1 = 1 (Low)</p>
<p>12. Pollution Prevention and Resource Efficiency</p>	<p>Water resources are currently exposed to various forms of pollution associated with the use of fertilizers and pesticides and manure. The programme activities will work to prevent these types of pollution (Output 1.1) and with the introduction of more resilient agriculture/forestry practices (Output 1.3). Under component 3, educational material that can be to include additional content for communities interested into care their own environment conditions.</p> <p>There may be further pollution linked to the construction of water storage facilities, including deterioration in water</p>	<p>P = 2 I = 2 R = 1 x 2 = 4 (Mid)</p> <p>Potential impacts will be monitored to ensure environmental integrity</p>

	quality downstream, or detrimental effects through limiting access to water by downstream users. During the construction of water infrastructure other affectations can occur (noise, solid waste, wastewater, dust, accidents, etc.).	
13. <i>Public Health</i>	<p>By supplying more and better water and sanitation services it is expected a positive impact in public health of selected communities, due to water-related diseases and vectors.</p> <p>Proposed education and training in water management and planning at community level can be extended to prevent water-related diseases (amoeba, cholera, etc.) and vectors as mosquito, avoiding Zika, Flu, Dengue, Malaria, Majaro, etc. Mosquito and vector borne diseases impact community members, particularly women, among childbearing age, children and elderly people¹².</p> <p>Programme workers (staff, personal, technicians, extension agents, labors and consultants) will be equipped with safety equipment to protect them, according the potential risk of their respective tasks.</p>	<p>P = 1 I = 2 R = 1 x 2 = 2 (Low)</p>
14. <i>Physical and Cultural Heritage</i>	No adverse impacts on the physical and cultural heritage of the people in the targeted areas is foreseen. As programme activities are designed through a participative approach and with support of key government institutions (i.e., Ministry of Environment and Natural Resources and INAPA) chances of to damage any physical assets are practically zero.	<p>P = 1 I = 1 R = 1 x 1 = 1 (Low)</p>
15. <i>Lands and Soil Conservation</i>	<p>There are no particular fragile lands that would be lost nor degraded by the program activities. The Programme will have positive impacts on the landscape of the intervention areas through the establishment of agroforestry systems and conservation agriculture. Soil conservation and restoring fertility is a key practice in smart-agriculture and forestry.</p> <p>The capacity building and education material produced by programme (under Component 2) it will include manuals for repairing and maintenance infrastructure. The cleaning and maintenance of irrigation systems will also to reduce erosion (especially during floods or periods of heavy rain).</p>	<p>P = 2 I = 2 R = 2 x 2 = 4 (Mid)</p>

2.2 Programme Categorization

Based on findings presented in Table 2 above, from an environmental/social risks perspective, the programme is ranked as a

Category B: Potential adverse impacts that are fewer in number, smaller in scale, less

¹² See the Health in the Americas Report HEALTH STATUS OF THE POPULATION - Emergent Diseases (2016). Available at: <https://www.paho.org/salud-en-las-americas-2017/?p=1878>. Dominican Republic is first country in the Americas to publish guidelines for clinical management of chikungunya. https://www.paho.org/hq/index.php?option=com_content&view=article&id=9783:2014-dominican-republic-guidelines-chikungunya&Itemid=1926&lang=pt.

widespread, reversible or easily mitigated.

The impacts and design of the programme are not overall high risk when evaluated against the 15 ESP principles. Risks identified at this stage have potential adverse impacts that are fewer in number, smaller in scale, less widespread, reversible or easily mitigated. However, the project design and budget allocations have been designed to focus on those areas with moderated/potentially low risks.

3. E&S + Gender Impacts

IDDI carried out an Environmental and Social Impacts Assessment (ESIA) which describe strategies and actions to minimize or avoid any negative impact from programme activities, considering applicable local, national and international regulations, and to promote the minimization of resources usage. Within the ESIA, all these activities and strategies (and measures to reduce or avoid impacts) are differentiated by Programme components and by Programme phases (i.e., design, construction and operational). A strong focus is done to cover potential impacts of infrastructure and facilities, provisions to avoid, mitigate, or reduce such impacts, and to agree mechanisms to involve beneficiaries.

3.1 Consultations

The consultative process was designed to include an approach that included all members of the community but with special approaches to ensure that vulnerable and marginalized members of the communities could participate. Two of the consultation events were held during the ESIA process at San Cristobal (Institute Polytechnic Loyola) and Villa Altagracia (House of the Women) both at programme site, which are accessible by persons with disabilities and the public in general.

- o 11 December 2017, 8:30 AM to 6:30 PM
Casa de la Mujer Villa Altagraciana (CAMUVA), Villa Altagracia
- o 11 December 2017, 8:30 AM to 6:30 PM
Instituto Politécnico Loyola (IPL), San Cristóbal

Detailed minutes of the consultations are presented in Annex 5 to the programme document, titled, *Consultation Meeting with Community Representatives from San Cristobal*. In addition, a focalized consultation was carried the Community Technologic Centre (CT) of Villa Altagracia, to share comments and strategies with professionals and leaders interested in the programme design. The public consultations informed the risk identification and analysis captured in the ESIA.

3.2 Risks by Component

This section summarizes the risks posed by the programme activities regarding E&S/ gender criteria.

Component 1: Community level implementation of resilient water resource management activities

- **Environmental Impacts**
 - Clearing of vegetation during construction of infrastructure and facilities (i.e., tanks, ponds, etc.).
 - The vegetation around the place shall contain rare or vulnerable species.
 - Removed vegetation, solid waste or other organic matter can be dragged into water courses.
 - Reforestation schemes may result in the introduction of species which can compete with native.
 - Soil and water may be affected by inadequate disposal of solid waste.
 - Construction may also generate solid and liquid waste such as oil from equipment and vehicles.

Interventions may create additional issues as noise, pollutants and dust. All these impacts can affect the flora and fauna, and even the nearby communities. This may occur if for example with excavations, operation of heavy machinery, and transit of trucks. Minor GHG emissions can also occur.

- **Social Impacts**

- Conflicts with residents, especially landowners who have developed their agricultural practices and are not necessarily open to change their current land use.
- All targeted communities used to dump solid waste to watercourses so, some degree of resistance is expected to change such these practices.
- Resistance of property owners to some mitigation measures (i.e. planting of trees, location of infrastructure, and clearing of vegetation).
- Insufficient buy-in from communities, which understand the programme is political in nature and no comprehensive effort to achieve a more resilient water supply in the long term.
- The possibility that some community members may be discriminated based on their status as, or based on the conscious or unconscious prejudices of those in charge.

The major challenge is that all these groups do not have the provision of this type of public service as their primary focus and so training must address this as well as preparation for maintenance.

- **Gender Impacts**

- Since climate change is one of the most common hazards that affect the targeted communities so, the re-engineering of the water supply for consumption and agriculture will have a positive impact on the community. This is particularly important for women, which families will be less exposed to water-related diseases, will have less expenses purchasing drinking water, and will have more access to water for agriculture and livestock under future climate change conditions.
- Participation of women is highly limited and results in a lack of transparency, inequity in access and distribution of water resources in planning and decision-making processes.
- Better access to water resources will reduce domestic storage that can become the breeding for mosquitoes and other insects identified above which increase vector-borne diseases (such as dengue and Zika) that could impact women and children disproportionately. Pregnant women and women among childbearing age would be more vulnerable to the Zika virus¹³.

Consistent with a gender-sensitive approach, job application forms request that applicants state their sex, which will be monitored for gender equity. If applicant women are not adequate, IDDI will target other women through partnering with local groups and women-based organizations to increase the ratio of applications from empowered women. This means that the jobs created or offered must have gender sensitive criteria for selection, and must also strive to achieve gender equity and equality.

Component 2: Capacity building and capacity development to manage climate change-related risks

¹³ Since there are currently no vaccines to protect against the infection according to the World Health Organization, the improvement of the water infrastructure, will reduce any possible negative health impact.

- **Environmental Impacts**

There are no foreseeable impacts or risks to the environment associated with this component.

- **Social Impacts**

- A good strategy for communication will help to replicate the programme impacts beyond San Cristobal, due to and appropriated buy-in from targeted audiences.
- Different ways of dissemination (i.e., social media, infographics, papers and dissertations) will be women/youth-focused since its designing.
- Extensive community training, regular visits and field demonstrations will be done, and also training of extension workers (giving them skills and hands-on experience).
- Universities and local NGOs can be befitted carrying activities as awareness raising, training and technical assistance for implementation of sub-projects.

Regarding the Provincial Climate Change Adaptation Monitoring Committee established in San Cristóbal, and is discusses above, programme can to establish a partnership with Plan Estrategico de San Cristóbal (PESC) to create the committee and for its long-term sustainability. In this case, PESC can be benefited due to the inclusion of the climate change perspective into San Cristobal long-term vision and strategic lines towards development, sustainability, inclusion, and welfare.

- **Gender Impacts**

- Men and women will be fully involved in capacity building to manage long-term climate change-related risks.
- Women see themselves as equal partners in the knowledge management, capacity building and climate change adaptation measures.
- This Component provides an opportunity for community members and key institutions to sustain the adaptation efforts.
- Trough more education, men consider women as their equal partners in the materials design, preparation, dissemination or outreach of programme produced materials.

Men and women from diverse groups should have the opportunity to participate actively in the planning, design, and implementation of the communication strategy. Together they can work on other aspects as early warning systems; disasters risk management, and protection of livelihoods.

4. E&S Management Plan

The programme will have a normal pre-inception phase (3 months). During this time most of the policy, legal and other steps will be reviewed in preparation for the formal programme launch (inception workshop, on June 2018). The ESMP has been designed to part of **this three-six months pre-inception phase**, in order to facilitate the following activities prior to project implementation:

- Appoint and train the Programme members.
- Appointed members sign the *IDDI's Code of Conduct and Ethics* and understand the *IDDI's Conflict of Interest Manual*.
- Training of key executing institutions on and relevant local organizations/ firms in the IDDI's procurement guidelines.
- Capacity building on the *ESP Screening Checklist* and ESMP of project partners (Ministry of Environment and Natural Resources, INAPA and others).
- Training and capacity building of community groups in the *ESP Screening Checklist*.

The ESMP will undergo more detailed assessment during the pre-inception phase to produce a more detailed Plan for inclusion, participation and engagement within the overall M&E strategy.

During the programme development phase, there were several assessments conducted to provide for programme buy-in regarding the Ministry of Environment and Natural Resources and other institutions (meaning the EIAS). In the process to develop the full programme proposal, the EIAS included on the proposal was approved by the Ministry of Environment; especially regarding the activities must meet national environmental and other planning requirements. These criteria have resulted on further detailed information/criteria/requirements which were incorporated into the ESMP.

4.1 Relevant Criteria

Component 1: A distinct characteristic of this component is that it includes 7 projects for water supply and sanitation and 5 projects for re-forestation, with clearly defined activities eligible for funding, and that are located within the project area, including the exact location for infrastructure and facilities. Although sub-projects' engineering and designs were prepared by specialist from INAPA and the Ministry of Environment and Natural Resources, at inception stage a complete set of detailed drawings and specific EIA provisions will be conducted by INAPA and the Ministry of Environment with support from other specialists and consultants. The EIA may include further assessment of the ESP. Water works are well known and standards for these have been developed and set by INAPA and implemented by a variety of projects across the country. The activities are therefore well known and have undergone significant pre-project elaboration technical/financial feasibility assessments.

Regardless of the approach the process will generate an EIA report and a separate report for ESP.

Component 2: the component does need further approval, but it shall be based on a specific communication strategy. As the production of knowledge resources and training materials will be based

Environmental and Social Management System Plan

on programme performance, learning and best practices, other ESMP provisions could be included in the future. Of course, the provision of a specific budget line for this component secure its performance will be not affected by any further Component 1 constraints, limitations or problems.

The environment and social impacts of each subproject were assessed at the time of application using a check list developed by IDDI during the full-proposal phase, based on the EIAS approved by the Ministry of Environment, which also include the ESP criteria. This checklist will be used as a training tool for the programme staff and executing entities and it will be used to assess the projects performance. The responsibility for EIAS approval and cost is already built within government processes.

In addition to the check list, for Component 1 an assessment of ESP impacts will be conducted annually (within M&E of programme progress on output and implementation) using a sample size. For Component 2, the approach is to facilitate lessons learned exercises with some drivers to strengthen the programme M&E plan. All these works will be conducted by independent local consultants.

4.2 EMSP Process

With the significant number sub-projects included within the programme (and after meeting permissions and decisions as well as potentially bureaucratic demands) the ESMP represents a process-oriented risk management strategy. This process incorporates the use of Government approval processes with its considerable technical resources, and where necessary provide additional project specific steps. This allow for risks assessments be built into project execution thus ensuring that ESP can be applied to each stage of decision making process without delays nor becoming too onerous.

IDDI has harnessed the significant resources of existing technical expertise of the community organization and government entities, to ensure that the cost of Component 2 does not negatively impact on the viability of the programme (due it's more for enabling that for increase resilience).

To community members to participate in the project, there is a need for resources to be budgeted to develop local capacity in order to empower community members and stakeholders. So, under Component 1 (output 1.1.), within more resilient water resources management under climate impacts, several mechanisms scheme will be drafted to support to communities regarding to:

- (a) Providing good and services
- (b) Participating within management structures
- (c) Performing as extension agents
- (d) Developing other adaptation to climate change projects
- (e) Creating SMEs taking advantage of the support provided

In addition, capacity building and learning opportunities will be fostered throughout the lifetime of the project within the Dominican Republic and throughout learning platforms and systems for integrating climate change-related risks into community management of water resources and diversified livelihoods activities. Also, the programme outputs will also be shared locally and through international fora on climate change, including UNFCCC, FAO, OMS, and UN Women.

4.3 Implementation Arrangements

National Implementation Entity

The Dominican Institute of Integral Development (IDDI) will serve as the National Implementing Agency (NIE) for the programme. IDDI will have the technical and administrative responsibility for achieving expected outcomes/outputs as defined in the programme. Also, IDDI is responsible for:

- timely delivery of inputs and outputs and, in this context, for the coordination of all other third parties, including ministries, municipalities, decentralized agencies and other authorities.
- recruitment and hiring of programme personnel, staff and consultants, including subcontracting.
- monitor programme implementation and the achievement of the project outcomes and outputs, and ensure that the funds provided are used efficiently

Strategic and operational oversight, and oversight to ensure compliance with Adaptation Fund's ESP will be the responsibility of the NIE, as it's presented in the monitoring and reporting section.

Management Agreements

The programme will be implemented by IDDI with Ministry of Environment and INAPA being execution entities. Other private (Water Users Associations and SMEs), civil society organizations (PRONATURA, UAFAM, Loyola, etc.) and selected community groups have been involved at full-proposal level. As the Dominican Republic has established a regulatory and institutional framework for climate change, all programme activities will be aligned with country's priorities described in National Development Strategy and its national commitments under the UNFCCC. Any implementation arrangement shall recognize clearly the separation between implementing and execution services. Regarding this matter, IDDI will comply with relevant AF guidelines and criteria as efficiency and transparency.

The management arrangements of the Programme have been designed to facilitate extensive linkages at all levels, from national-level policymakers to institutional-level operations down to communities and beneficiaries. Into designing such arrangements, following criteria were taken into account:

1. Consistency with governance structures and mandates of agencies;
2. Accountability and transparency in fund flows to ensure cost-effectiveness;
3. Disbursement of funds in a timely manner to ensure delivery within the stipulated timeframe;
4. Fostering participation and ownership; and
5. Mainstreaming and sustainability.

Programme Partners

The Ministry of Environment will be an executing entity. In addition, the Ministry will act as the main government institution to facilitate linkages between the national and local levels, and to coordinate the activities of the Program at the local level. The Ministry is in a good position to do this, as it has offices and staff at the provincial level. The deliverables of the Program at community level will follow the channels of the current structure of the government of the Dominican Republic. Through the Vice Ministries for Forest Resources, for Soils and Water and for Protected Areas, the activities of re-forestation, conservation of the micro-basins, and/or ecosystem restoration will be coordinated.

The implementation of activities at community level will be the responsibility of the Community Committees / Community Groups (CC/CG), through the corresponding decentralized agencies, mainly INAPA which will also be in charge of the execution of the drinking water and sanitation projects, as well as the creation and formalization of the ASOCARES. In the places where the conditions exist, all the activities foreseen by CC/CG will be closely related to water users associations and the irrigation users committee (for the management of water resources and irrigation systems, supervision of infrastructure projects, identification of private contractors, etc.). In accordance with this approach, CC/CG will be strengthened to work with other decentralized agencies regarding to the programme.

Other governmental bodies such as INDRHI, Ministry of Public Health, Ministry of Public Works, Ministry of Agriculture, Ministry of Women, Ministry of Youth, etc., could be invited to support the executing entities if necessary and/or depending on the nature of the activity carried out. This measure not only helps strengthen the capacities of these institutions, but also reduces delivery risks.

Programme Architecture

The architecture of the programme will be follows:

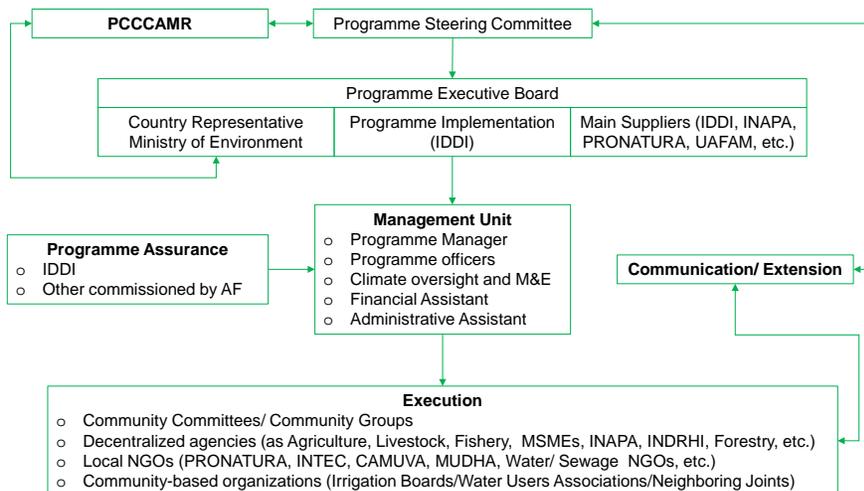


Figure 1: Architecture of the Proposed Programme

Steering Committee (PSC)

The Programme will create a Steering Committee composed of high-level representatives of IDDI, the Ministry of Environment and Natural Resources, INAPA, and key institutions such as the Government of San Cristóbal, INDRHI, MEPyD, local governments, universities and NGOs. This committee will be chaired by IDDI, and the Ministry of Environment will be permanent secretary. In addition, the membership of the PSC could include the governing ministries of the decentralized agencies that will participate in the delivery of the project's products at the community level, such as the Ministries of Public Health, Public Works, Industry and Commerce, Youth, Agriculture, of Women and others.

Table 3: Programme Steering Committee Membership

Regular (with key responsibilities)	Occasional (according agenda/ interest)
- Ministry of Environment and Natural Resources	- Local Governments (according to agenda)
- IDDI	- Community based organizations
- INAPA	- Representatives of empowered women
- INDRHI	- Ministry of Public Health
- MEPyD	- Ministry for Women
- Governorate of San Cristobal	- Universities (UAFAM, INTEC, Loyola)
- PESC	- Local NGOS (ProNatura, Brightline)

PSC is constituted as a device to enforce decision-making process of the programme, especially to mitigate or avoid risk out of the IDDI control. PSC meet every 3 months and the minutes of the meetings will be recorded and shared with all PSC members. The PSC will be governed by a *Terms of Reference*¹⁴ and the *IDDI's Code of Conduct and Ethics* and *IDDI's Conflict of Interest Manual*. To secure gender inclusion and representation, 50% or more of the PSC members shall be women.

Executive Board (PEB)

The Programme Executive Board (PEB) will be responsible for approving the key management decisions of the Program and will play a key role in ensuring technical quality, financial transparency and overall impact on the Programme's development. The Board will be composed of high-level designated representatives of agencies with direct participation in the implementation of the Program (i.e., IDDI, INAPA, MEPyD, Governor of San Cristóbal, Ministry of Environment, etc.). Once the Program has been approved, the PEB will be formalized during the inception phase. At this point, a complete list of the PEB members designated by the institutions and their alternates will be included on the inception report. To secure gender inclusion, 50% or more of PEB appointed members shall be women.

Management Unit (PMU)

IDDI will establish a Program Management Unit (PMU), which will be responsible for the implementation of project activities. This Unit will prepare annual work plans, progress reports, and carry out the M&E plan of the Program. The PMU will be in charge of coordinating the activities under each component with the different government agencies / local organizations collaborating and participating in the programme execution. This unit will also be responsible for guaranteeing the appropriate participation of the stakeholders and the involvement, transparency and performance. The PMU grants that there will be effective coordination and efficiency, especially when activities depend of various actors for its execution. To secure gender inclusion, 50% or more of PMU members shall be women.

Programme Manager (PM)

IDDI will appoint a Programme Manager, who will be hired over the course of the inception phase. PM will be a full-time dedicated professional designated for the duration of the programme. The

¹⁴ The Terms of Reference for the Programme Steering Committee are included in *Términos de Referencia: Comité de Dirección (Steering Committee)*, elaborated by Brightline Institute [Appendice D, just in Spanish].

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prime responsibility of PM is to ensure that programme produces the results specified with required quality and within specified constraints of time and costs. PM costs will be borne by the Programme.

As a way of ensuring the integration of the Programme into key institutions structures and process, the PM will be a senior official with at least 10 years of experience on climate change adaptation-related issues in Dominican Republic, and relevant experience with gender, environment, community-based adaptation, rural development, land use and planning, legislation and local governments.

Technical/ Support Staff

The PM will be supported by a core team of technical and support staff (PMU) located at IDDI to execute programme activities, including day-to-day operations, the overall operational and financial management and reporting. Staff can include accountant, consultant, engineers, drivers, secretary, etc. Technical/ support staff will be appointed by Programme Manager based on transparency and competitiveness criteria, and respecting aspects as equality, equity and gender (as it's said above, 50% or more of the PMU staff shall be women) based on correspondent competitiveness criteria.

Local Coordination/ Local Implementation

At local level, Community Committees and Community Groups (CC/CG) will be established in each site to be intervened and/or where the individual projects will be executed. This will ensure adequate coordination and participation of key actors and representatives of beneficiary groups at local level. In the areas of intervention, the CC/CG will be responsible for the delivery of the project's products at the community level, through the appropriate government agencies, mainly INAPA, the Vice Ministry of Forest Resources, the Vice Ministry of Soils and Waters, and the Directorate of Climate Change.

To execute the activities and transfer the economic resources required to carry them out, IDDI will sign a Cooperation Agreement with the CC/CG, in line with its practices for the implementation of projects at community level. The PSC will have the responsibility to ratify the scope of said agreements. In case of not achieving with a particular CC/CG, IDDI may propose other projects. The nature and extent of the Cooperation Agreements are defined based on IDDI's experience in implementing community-based initiatives, which has been shown to encourage greater local ownership, ensure accountability, encourage local creativity and mobilize local counterparts for the programme implementation. It also ensures that the programme is integrated into community work, instead of being seen as an additional responsibility that does not align with its own development plans.

Under the proposed program, the relevant government agencies will work in coordination with the CC/CG to deliver the programme products, and to ensure that the institutional capacity for local adaptation action is built and survives beyond the life of the programme financed by the AF. At the beginning of the program, the capacity of government agencies to determine the capacity gaps and the necessary support for the development of capacities to execute the program financed by the AF will be evaluated. Based on the findings, the Program, in coordination with the Ministry of Environment and Natural Resources and INAPA, will strengthen the areas that must be built to achieve the Program's objectives (i.e., technical capacity, financial management and M&E, etc.).

Extension Agents

For the implementation of the programme, particularly in the management of water and forest re-

sources in the intervention zones, it is essential the participation of community agents, who will provide technical assistance to the communities. Therefore, it is necessary to ensure that they have the necessary technical skills to implement the activities. Experience from Small Grants Program (UNDP-GEF-PPS), appoints institutional arrangements can be used related to the use of community agents.

The first option, and the preferred one, is to form a group of community agents from interested members of the community, beneficiary groups and local NGOs staff, through practical and concrete training in aspects that will focus -in principle- on the types of services that will be required by the programme interventions. The community agents will be empowered by the trainers (technicians of the Ministry of Environment and INAPA, and consultants that will be hired by the programme) to offer their services to beneficiary communities as it has been established for the programme. Officials from government institutions and programme staff will periodically conduct field visits to ensure that the services provided by community agents conform to national standards and / or good practices. This approach is inclusive, profitable, innovative and sustainable, since it builds capacities, transfers technology and empowers people to diversify their livelihoods and helps them meet their needs.

The capacity of the community agents will be established through the evaluation of their skills, as well as an evaluation of the capacities of target communities to assimilate the technical support they can provide. The Program will carry out an assessment of the functional, technical and other critical needs in support of the delivery of Component 1. It is expected that the capacity needs will vary significantly among communities, but common skills that will be developed under the programme would be appropriate practices in changing climatic conditions, community mobilization, climate risk management in the field (i.e., water conservation techniques). The resources needed for the capacity development activities of the extension agents are budgeted within the components, as well as the budget for the local / external consultants who will carry out the training that will be provided.

The experience of consultations, meetings and field visits, indicates that there is a great interest on the part of local people to become community agents (at least based on their knowledge of the communities and their perception of the services that could provide to these) due to the opportunity to acquire new skills and more income. Some community agents even charge some fees for the services they perform for other members of the community (i.e., seedlings, fertilizers, etc.).

In cases in which the target community does not have the capacity to constitute community agents, an alternative option for the programme would be to include the extension service in the Cooperation Agreements to be signed between IDDI and CC/CG. Under these agreements, the plans, activities and operations are developed specifying in detail the type of community service required, the frequency of visits, the types of services to be provided, and an estimate of the costs of these will be provided. The deliverables and monitoring mechanisms can be included on appendix to the Agreements. Programme will cover the additional cost to provide these services in form of a subsidy (DSA).

CC/CG in coordination with relevant government institutions, will submit regular reports to PMU for monitoring, and to activate the release of funds to cover the incremental costs. The incremental emphasis is due to the fact that, as established for the projects implemented under the National Implementation Modality (NIM), the Program will not pay the professional services of the personnel paid by the government, nor will it dedicate or provide them with any asset, amount, sum or other values.

The Ministry of Environment and INAPA, through their respective provincial offices in San Cristóbal, will be responsible for coordinating the CC/CG in target communities, to ensure that they learn from each other's experiences during the programme implementation. In addition, it is essential for the coordination function of these institutions, to ensure that the programme can take advantage of economies of scale as much as possible during implementation. This is particularly crucial in cases where CC/CG could obtain a better price if they negotiate collectively (i.e., civil works, plant seeds, etc.). The provincial office of the Ministry of Environment will collaborate with the Provincial Committee for Monitoring Adaptation to Climate Change (Output 2.2), giving opinion and information.

Local NGOs

A programme like this one cannot rely solely on government system. Fortunately, local NGOs are rapidly acquiring capacities to execute climate, forestry and environmental projects, in collaboration with communities and international agencies. The strategy of the programme will be to complement the government and NGOs with new and/or existing capacities (in other sectors) to create a group of community agents. This has proven to work in the Dominican Republic, based on the experiences of local NGOs (i.e., the Disaster Risk Management Programs and the Small Grants Program). Regarding this aspect, it is expected that, according to their mission, experience and availability, organizations as PRONATURA, UAFAM, Fundación H+D, and Loyola, could achieve some leadership in support of water management (Component 1) and capacity development (Component2); while local organizations (as CAMUVA, MUDHA, and ASOCARES) can provide services and support at the field level.

Provincial Committee (PCCAMC)

A Provincial Climate Change Adaptation Monitoring Committee will be created and empowered to provide overall guidance and supervision to lead the programme to its long-term sustainability. The PCCAMC will act as "representative" of programme beneficiaries and community-based organizations towards key government institutions. Its main activities will be related with the inclusion of the programme achievements and further steps within both central and local government investment plans. This include the National Budget and Public Spending Law, Participative Budget (a well-known/well established existing mechanism that promotes civil society participation into local governments investments to secure its plurality, efficiency, sustainability and transparency), further Multi-Year Public Sector Plan, and the revision of the National Development Strategy in the long-term.

As well PCCAMC can work with other national and/or international relevant institutions (cooperation agencies, developed countries and/or multilateral donors) into develop further climate and development related projects in benefit of communities and organizations of the San Cristobal Province.

The PCCAMC final design, attributions and members will be defined after the inception phase. However, it's highly anticipated that it will include existing entities as the Governance, local governments, MEPyD, COE, Ministry of Public Health, Ministry of Environment and Natural Resources, INDRHI, INAPA, Ministry of Agriculture, Ministry of Energy and Mines, and Ministry of Industry and Commerce. Private sector representatives from industrial, services, banking, and agriculture, and civil society organizations, as universities, NGOs, women, youths and communities will be included. *Plan Estratégico de San Cristobal* (PESC) has interest into host PCCAMC as they do with other provincial committees.

The Programme will support the establishment of this committee initially, to serve the Programme

objectives but with a wider view of supporting the identification of other adaptation needs and to implement solutions in benefit of most vulnerable people and the long-term sustainable of the San Cristóbal. Participate into PCCAMC does not implies to receive any payment from the programme.

4.4 Safeguards for ESMP

The Ministry of Environment and Natural Resources is the authority responsible for overseeing and enforcing the national Environmental Impact Assessment (EIA), per mandate of the General Law on Environment and Natural Resources. The Ministry of Environment regulates the EIA process for both government and the private sector initiatives (Law 64-00, chapter IV, art. 41, par. II).

The EIA process conducted by IDDI generates recommendations and alternatives within the EIAs. The assessment of the EIA and the recommendations included are reviewed by the Ministry of the Environment and Natural Resources, and a final decision is taken by the higher level of such entity. As the IDDI is the programme proponent, the EIA follows the standard procedure, however the Ministry of Environment delegates, or shares, certain responsibilities of the EIA process that may be subject to bias (in this case, the IEAS has been submitted to secure the programme does not results in significant negative impacts and is being reviews by the Ministry). This is the case for the Adaptation Fund project, where the Ministry of Environment is serving as Executing Entity and key partner of NIE.

The arrangements and responsibilities for managing the EIA process are summarized below. These roles and responsibilities are supported by several budget lines which include *inter alia* followings:

- o A budget of USD 30,000 (Project Formulation Grant) was allocated to contract independent experts to conduct the basic EIAs and other studies required to draft the full programme proposal.
- o Approximately USD 76,000 for Monitoring and Evaluation (M&E) including EIA provisions and USD 99,215 for hiring specialist on adaptation measures.
- o Other lines can be identified for independent oversight EIAs within their respective physical interventions. All expenses shall be reported according M&E (and per any legal agreements).

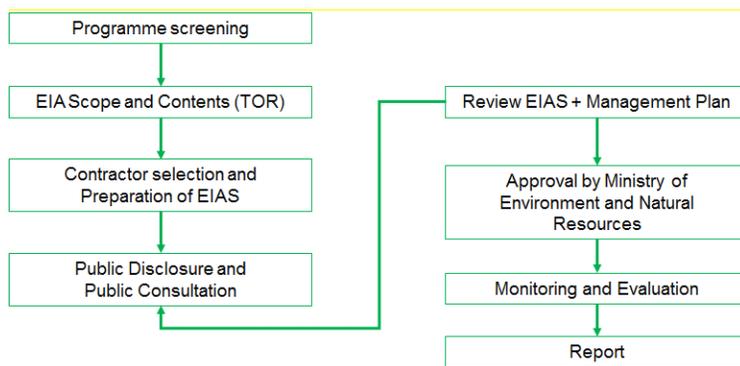


Figure 2: EIAS Process for the Programme

The AF budget has allocated funding so that financial resources are used by IDDI to hire third-party's Environmental and Social Management System Plan

experts. These experts will provide technical reports to the Ministry of Environment and Natural Resources, to the Committees, and to programme partners if counts with IDDI approval. Final drafts of programme EIAS has been completed and was reviewed by IDDI and submitted to the Ministry of Environment and Natural Resources and INAPA (in English and Spanish) for their approval (June)¹⁵.

4.5 Programme Assurance

IDDI will support programme implementation by assisting in the monitoring of programme budgets and expenditures, contracting programme personnel and consultancy services, and subcontracting and procuring equipment at the request of PMU. With respect to the technical side, IDDI will monitor progress of programme implementation and achievement of programme outcomes/outputs. Several designated programme officers will be assigned in the PMU to provide financial and technical monitoring and implementation support services. External consultants can be included if necessary. Programme audits will follow international finance regulations, rules and applicable audit policies.

4.6 Risk Management

Component 1: Community level implementation of climate resilient water resource management

After complete Output 1.1. (Community plans), to implement of Output 1.2 (resilient water supply) and Output 1.3 (re-forestation activities) an individual EIA will be realized by INAPA and the Ministry of Environment (with support of PMU and external consultants), in order to be produce all interventions final technical drawings, budget and technical specifications. Both institutions will approve their respective work plan before to start the physical interventions (as built new infrastructures).

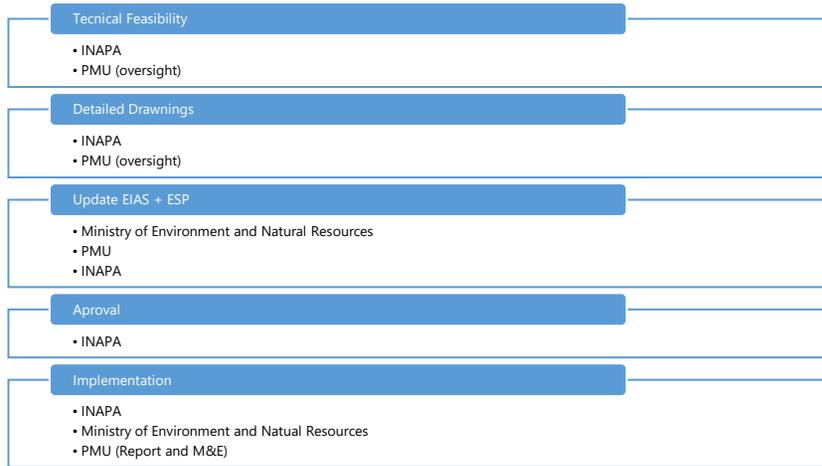


Figure 3: Process for Risk Management for Component 1

¹⁵ The EIAS (which cover environmental and socioeconomic impacts of the Programme and the measures to avoid it) is included in *Apéndice C: Estudio de Impacto Ambiental*, elaborated by Brightline Institute.

The above figure defines the steps consistent with identified sub-projects approach. The EIA and ESMP will be implemented in accordance with the EIAS and ESMP and the Adaptation Fund's 15 ESP principles. The EIA and ESMP will screen for all 15 principles of the ESP using specific checklists (as is discussed later). All these precisions are reflected in the draft Terms of Reference for the EIAS.

The EIA will identify any potential risks for final designs of the water works and re-forestation interventions mainly to avoid involuntary resettlement, whether physical or economic displacement. Under the Programme, any involuntary resettlement is ineligible as affected persons or communities have the right to refuse land acquisition or restrictions on land use. These rights shall be communicated through public notices, on the IDDI website, and by the staff and consultants of the programme. Affected community members will be notified of the grievance mechanism that is available to them (defined below).

Deleted: The EIA will identify any potential risks, mainly for involuntary resettlement, whether physical or economic displacement, based on the final designs of the water works interventions. Involuntary resettlement shall be avoided as affected persons or communities have the right to refuse land acquisition or restrictions on land use

The ESMP and Monitoring Plan will detail the monitoring requirements for pre-, during- and 2 years' post-implementation. This will include risk identification and recommendations to ensure the documented implementation of mitigation measures; long-term minimization of negative impacts; and maximization of positive impacts. Full costing of the Monitoring Plan implementation will be included, and indicators used for monitoring will be disaggregated by gender. The EIA and ESMP will include public disclosure, community consultations, and the outputs shall be appraised.

Component 2: Capacity building and capacity development to manage climate change-related risks

After to develop the programme communication strategy, any potential community resistance to the Programme interventions, will be avoided through an adequate approach to aim an early and consistent stakeholder involvement and engagement, and permanent hearings and data sharing.

Regarding this matter, the EIAS and ESMP just will be updated to include indicators as women reached directly by the programme, visits to website (including material consulted or downloads), and dissemination activities related learning platforms, water management resources, climate change adaptation. Most of this work will be developed by third parties (as universities and local NGOs) under the PMU supervision and with the participation of communities and government institutions.

In the case of PCCMAC, its development and performance will be monitored. However, the impact of this provincial committee will be promoted as it serve to mainstream ESP to other aspects of the live of San Cristobal and its linkages with greater levels of decision-making in the country.

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Summarizing: the programme includes sub-projects, which have been identified by The Ministry of Environment and Natural Resources, INAPA, IDDI, and communities. In case of Component 1, community-based water management plans shall be in place before the design the final infrastructure according to climate induced stress and the needs of the community. For Component 2, appropriate knowledge management and dissemination of learned lesson and best practices, will depend on the communication strategy adopted, the effectiveness of relevant media, and buy-in of target public.

4.7 Quick Tool

A specific screening checklist will be used to assess all programme components and sub-activities at the various steps above specified. This document attempts to apply the ESP Principles to a national context in a way that will be easily understood by project partners and beneficiaries alike so they can apply it easily on their day-to-day activities, understanding better what they are trying to achieve.

4.8 Ineligible Activities

Programme funds provided by AF shall not be directly or indirectly used for:

- o Operational or administrative costs of ministries, directors, departments or agencies of the Government of the Dominican Republic or the government of any other country;
- o Salaries for executive officers and core staff of non-governmental organizations, except if such salaries are related to services performed specifically for achieving the programme objectives;
- o Activities related to the extraction or depletion of non-renewable natural resources (including - inter alia- forests, trees, beach sand, and oil & gas);
- o The resettlement of people, their livelihoods, or the removal or alteration of any physical cultural property under any circumstances; or
- o Any other use that is deemed to be inconsistent with the Law and/or legal framework.

This list of exclusionary activities may be amended upon the recommendation of the Programme Steering Committee, or by resolution of the Ministry of Environment and Natural Resources.

4.9 Public Consultations

Any potential resistance of the communities to the Programme interventions will be avoided through a communication strategy to aim an early and consistent stakeholder involvement and engagement, and permanent hearings and information sharing. The following table provides for an indicate time-line and frequency of community consultations during project implementation.

Table 5: Timeline for Community Consultations

Frequency	Responsible	Purpose	Expected Outputs
3-month pre-inception phase	IDDI and Programme partners	Training Programme tailored to the needs of the community members and project partners	Network of validated project partners
Programme inception	IDDI	To gather baseline socioeconomic information	Baseline data
As needed and at least every 3 months (rotating communities)	IDDI	Discuss any impacts of interventions, challenges, schedule, review the 15 ESP principles; and notify the public about the grievance mechanism	Assessment of impacts of interventions and programme activities.

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The PMU will ensure that marginalized and vulnerable groups in the targeted areas are included in public consultations, holding smaller focus groups as necessary, including: the disabled, single mothers who are heads of households, the elderly including those who on a fixed income (pension, if any), small children and migrants of questionable immigration status and their children. The programme stakeholders and community consultations should follow the *Guidelines for Information and Public Participation of the Ministry of Environment and Natural Resources*. This document is publicly available and include the step-by-step guidance and for capture, analysis and reporting of feedback.

4.10 Grievance Mechanism

Ministry of Environment and Natural Resources has an established complaints procedure, which will be used as the Programme's Grievance Mechanism. This is covered in the Law 64-00 (General Law of Environment and Natural Resources). Complaints pertaining to the Programme activities implemented with AF resources will be addressed to executives of the Project Management Unit.

The public can submit complaints via the following channels:

- Ministry of Environment website: <http://ambiente.gob.do/denuncias-ambientales/>
- By email to: despacho@ambiente.gob.do
- In writing to: Ministry of Environment and Natural Resources
Ave. Cayetano Germosén esq. Gregorio Luperón
El Pedregal, Santo Domingo.
- By Phone: Monday to Friday: 8am to 4pm
(+1) 809-539-6400; (+1) 809-200-6400 (free)
- By social networks: Whatsapp: (+1) 849-356-6400
Twitter: AmbienteRD
Instagram: AmbienteRD
Facebook: AmbienteRD

Additionally, the Adaptation Fund Board Secretariat can be contacted directly anytime regarding any grievance or complain related to the Programme. Following contact options are available for targeted communities, projects beneficiaries, local authorities, Stakeholders and any other third party;

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- By email to: afbsec@adaptation-fund.org
- By writing to: Secretariat at the following address:
[Adaptation Fund Board Secretariat](#)
[c/o Global Environment Facility](#)
[Mail stop: N 7-700](#)
[1818 H Street NW](#)
[Washington DC 20433](#)
[USA](#)
- By Phone: Monday to Friday: 9am to 5pm
[+1.202.458.7347 \(v\)](tel:+12024587347)
[+1.202.522.3240 \(f\)](tel:+12025223240)

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Adequate support and guidance in Spanish language will be provided.

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Depending on the nature of the complaint, or if for any reason the complainant is unwilling to make a report to the Ministry of Environment and Natural Resources, it can submit a complaint through the correspondent municipality. When a complaint is communicated, following information is recorded:

- The nature of the problem;
- The location of the problem;
- When the problem occurred (date and time);

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- Who or what is the perceived source of the problem;
- Any information or evidence -particularly eyewitness, documents, photographs, or videos
- Water or soil sample (evidence must be credible and relate directly to the incident reported) and
- Optionally, the contact information of the complainant: Name, Phone number, ID, etc.

Complaints will be handled by correspondent staff at the Ministry of Environment and Natural Resources, who will investigate the complaint. This process usually includes an on-site visit for investigation. Depending on the case, the Ministry may invite other relevant agencies (legal, coercive, technical, etc.) to participate in the investigation. During the investigation, individuals or agencies responsible for action to correct the issue will be identified. The Ministry will produce a report of its findings and recommendations and action if necessary. Complainants may request for a copy of the reports related to the complaint, as establishes the Freedom of Information Law.

5. MRV Arrangements

IDDI is responsible for monitoring project implementation and the achievement of the programme outcomes and outputs, and ensuring that the funds provided by AF are used efficiently. While all staff members have a role in ensuring risk management, the PM will be responsible for implementation of the risk mitigation measures. A monitoring, reporting and evaluation process model is illustrated below, and is the mechanism through which the programme and its sub-projects will promote compliance with the Adaptation Fund's ESP principles throughout implementation and in a comprehensive way. The process aligns M&E across components, and involves key institutional actors.

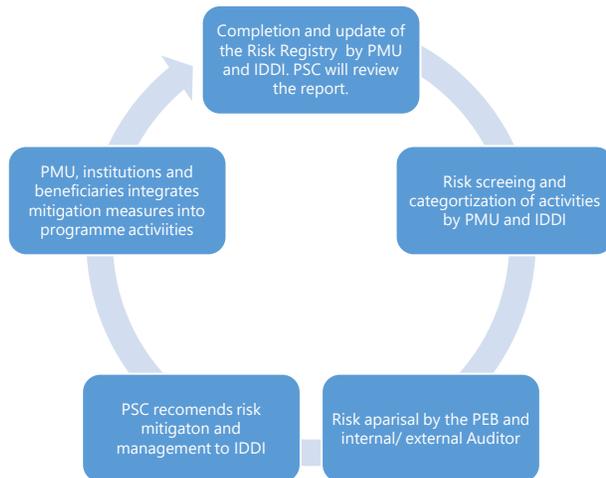


Figure 5: Risk screening, monitoring and management process

However, if a risk is handled the actions must be documented and included on programme file.

5.1 Roles and responsibilities

IDDI: it shall to promote the development of a culture that supports effective risk management; ensures that risks are managed effectively; assigns accountability to staff for managing risks within their areas of responsibility, levels of authority and competence; and allows for the systematic review of risk management to ensure its effectiveness and adherence to programme risk categorization.

PMU: Act as an office of risk management with respect to the projects. It informs the IDDI on risks and performance, develops and updates risk management tools, coordinates activities, facilitates the identification and evaluation of risks, and maintains the risk framework, ensuring that it is relevant.

Staff: All staff is required to familiarize themselves with *IDDI's directives for risk management*¹⁶, comply with internal control measures, and escalate them to their managers when be appropriate.

Audit: External audits assess the efficacy of risk management and risk identification, control and mitigation actions. IDDI shall inform to all stakeholders about the auditing results and the quality and effectiveness of policies, strategies and operations, and the efficiency of their implementation.

5.2 Risk Registry

The Risk Registry lists all identified risks that may undermine the programme ability to achieve its objective, and risks related to the ESP principles that may result from implementation of programme activities. The risks should be documented in detail to include all identifiable risks and generally includes estimated probability of the risk event to occur, and severity or possible impact of the risk. PMU shall establish the project's Risk Registry, which will be reviewed and updated each 3 months.

5.3 Appraisal by PSC

The PMU will present the ESP risk report to IDDI and will shared electronically and through a verbal presentation to the PSC, on a quarterly basis. The PSC or any of its members can use the default baseline assessment provided below to evaluate the risks and identify mitigation measures.

Table 6: Default Baseline for Appraising ESP Compliance

ESP Principles	Default Baseline Assessment
Compliance with the Law <i>The project shall be in compliance with all applicable domestic and international law.</i>	All sub-projects and activities under this programme are compliant with the Dominican Republic laws and applicable international laws and regulations.
Access and Equity <i>The project shall provide fair and equitable access to benefits in a manner that is inclusive and does not exacerbate inequalities.</i>	All sub-projects and sub-activities are perceived as fair and equitable, where neither favouritism nor discrimination determine who benefits. A "bottom-up" and participatory design enable fair and equitable access, including to identified marginalized and vulnerable groups, who meet the eligibility criteria.
Marginalized and Vulnerable Groups <i>The project shall avoid designing activities that will disproportionately affect groups of marginalized or vulnerable people.</i>	All sub-projects and sub-activities will not disproportionately affect vulnerable and marginalized groups, who may be subject to discrimination, including children, women and girls, elderly, people living with disabilities, immigrants, and any other.
Human Rights <i>All project activities shall respect and promote international human rights.</i>	All sub-projects and activities are respecting and promoting international human rights. They are not discriminatory and reinforce the right of people to live safely with the access to basic rights, such as for example clean water or food security.
Gender Equity and Women's Empowerment	All sub-projects and sub-activities under this pro-

¹⁶ Metodología de Evaluación de Riesgos del IDDI.
http://iddi.org/file/repository/METODOLOGIA_EVALUACION_DE_RIEGOS_PROYECTOS_26_02_2016.pdf

<i>Projects shall be designed and implemented so that both men and women 1) have equal opportunities to participate, 2) have comparable benefits from the project, and 3) neither group are more likely to suffer as a result of the project.</i>	gramme are considering gender equity as a priority, allowing women to have access to all the activities in the same way as men. The activities are thus empowering the women, offering them equal access to loans to improve their conditions and adapt to climate change. It also protects vulnerable women.
Core Labour Rights <i>Project activities shall meet the core labour standards per the International Labour Organization (ILO).</i>	All sub-projects and sub-activities are respecting the core labour standards per the International Labour Organization, for example prohibiting child labour, forced labour, or unfair compensation for services.
Involuntary Resettlement <i>Projects shall be designed and implemented to avoid or minimize the need for involuntary resettlement. When unavoidable, due process is required.</i>	Precisely, all sub-projects and sub-activities <u>were made</u> to avoid the need for involuntary resettlement, to reduce the vulnerability of the communities and generate adaptation and economic wellbeing. The project is based on <u>a</u> participative approach, which monitors any risks of involuntary resettlement.
Protection of Natural Habitats <i>The Fund shall not support projects that involve unjustified conversion or degradation of critical natural habitats.</i>	All sub-projects and sub-activities are implemented with respect for nature, using ecosystem services where possible, and with an approach consistent with sustainable development and country priorities, taking care of the environment and the resources.
Conservation of Biological Diversity <i>Projects shall be designed and implemented to avoid any significant or unjustified impacts to biological diversity or the introduction of known invasive species.</i>	No biological material will be imported from other places to avoid the risk of introducing invasive species. For all sub-projects and sub-activities, invasive species are identified and measures to control their spread will be addressed in the design of the activities.
Climate Change <i>Projects shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.</i>	All sub-projects and sub-activities are developed to reduce GHG emissions and the vulnerability of the communities to expected climate impacts. Community facilities and other structures are constructed or retrofitted to be resilient to climate change.
Pollution Prevention and Resource Efficiency <i>Projects shall meet international standards for maximizing energy efficiency and minimizing material resource use, waste material, and pollutants.</i>	All sub-projects and sub-activities are developed to avoid, reduce, mitigate or compensate any pollutant (wastewater, solid waste, dust, noise, emissions, etc.) and to use efficiently all used natural resources.
Public Health <i>Projects shall avoid potentially significant negative impacts on public health.</i>	All sub-projects and sub-activities are elaborated with the perspective of reducing health impacts on individuals and the community. All sub-projects and sub-activities must not result in trans-boundary harm such as flooding downstream, nor places where water can stagnate and cause mosquito-breeding habitat.
Physical and Cultural Heritage <i>Projects shall avoid the alteration, damage or removal of any physical cultural resources, sites, and those with unique natural values, include access to such sites.</i>	All sub-projects and sub-activities shall identify any physical cultural sites or places with unique natural values and notify the Ministry of Environment and/or the Ministry of Culture. If any physical and cultural heritage sites are identified, these shall be protected.
Lands and Soil Conservation <i>Activities shall promote soil conservation and avoid degradation or conversion of productive lands or lands that provide valuable ecosystem services.</i>	All sub-projects and sub-activities will conserve land and soil, including by promoting ecosystem-based adaptation and using ecosystem services to achieve the objectives of the programme. For non-ecosystem solutions, ecosystem solutions have been considered first and foremost.

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After appraising the risks and identifying mitigation actions, the original PMU report and the outputs of the appraisal process will be submitted to the PSC.

5.4 Recommended Interventions

The Programme Steering Committee (PSC) is responsible for assess the risks and recommending risk mitigation & management actions to be implemented. The PSC may seek to bring in experts in ESP and Gender, or other disciplines as appropriate, and will draw on the expertise across the government and civil society, including the Ministry for Women, or the Ministry of Public Health, among others. The PSC recommendations will be documented and transmitted to the IDDI to oversee their implementation. The PSC and/or the IDDI will respond to risks in following four ways:

Acceptance	<u>Risk is accepted without the need for any mitigating measures</u> Risk score: Low
Control	<u>Mitigation measures are implemented to reduce risks to acceptable levels</u> Risk score: High (before mitigation) to Low (after mitigation)
Avoidance	<u>An activity may be terminated if it is deemed too risky</u> Risk Score: High (before mitigation) to Low (after mitigation)
Transfer	<u>The risk is transferred to a third party</u> Risk Score: High (before mitigation) to Low (after mitigation)

Whether a risk is accepted, controlled, avoided or transferred, the actions required to implement the risk response need to be documented and the responsibility assigned to the appropriate personnel for implementation. These such documents shall will be socialized with beneficiaries.

5.5 Feedback

Upon receiving the recommended actions from the PSC, the IDDI will work with PMU and beneficiaries to integrate mitigation measures into project design and activities. The IDDI (as NIE) will oversee that the PMU update the Risk Registry and tracks mitigation actions. The Risk Registry will be inspected by PSC on a regular basis and briefings provided to the internal/external auditors.

5.6 Annual audits

Audits will be conducted by an independent evaluator on an annual basis for this programme. A suitably qualified person (or firm) will be hired through a competitive procurement process to examine and report on the IDDI governance arrangements, including arrangements in place for compliance with Adaptation Fund's ESP, programme performance, transparency and efficiency.