

Analysis of International Funding for Haiti's Climate Change Priorities

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Executive Summary

Current financial assistance for energy and climate-related projects is concentrated in just three of Haiti's twenty-three articulated priorities for combatting climate change: food security, renewables, and integrated water resource management. In addition, disaster risk reduction receives significant funding, which is indirectly related to climate change. With the concentration of resources and projects in these four categories, many of the Haitian priorities appear to be relatively neglected, including agricultural adaptation, afforestation, agroforestry, coastal-zone management, capacity building, development of a bio-economy, institutional strengthening, mangrove protection, and waste management.

Introduction

Climate change impacts in Haiti are well documented and represent critical challenges for sustainable development over the medium- and long-term. For a Small Island Developing State (SID), the frequent and persistent occurrence of extreme weather events such as hurricanes and cyclones, flooding, and severe droughts, coupled with low levels of socio-economic development and adaptive capacity, increase Haiti's vulnerability to the effects of climate change. Haiti's recent experience of earthquakes has only increased its vulnerability because much development aid has had to be diverted to humanitarian relief. In the latest ranking of vulnerability to climate change, Haiti was ranked third in the world, and was characterized as facing "extreme risk" (Verisk Maplecroft 2016).

SIDS and other low-income developing countries often do not possess sufficient domestic resources and appropriate institutional and technical capacities to address and mount an effective and sustained effort to reduce the effects of disasters on economic, physical and social infrastructure as well as create conditions for low carbon development. These countries therefore require considerable capacity building and financial resources from international sources in order to take the necessary steps to adapt to climate change, increase resilience both to natural disasters and climate change, and to reduce emissions whenever interventions are mutually beneficial for development, such as the provision of clean energy.

Coping with climate change is a special challenge for Haiti because for many years, it has had to contend first with immediate natural disasters. The 2016 Hurricane Matthew devastated the majority of livelihoods dependent on agriculture and subsistence forms of

income-earning activity in Haiti. From 2011-2014, among 35 SIDS, Haiti was consistently the number one recipient for disaster relief, receiving a total of USD\$282 million, or an average of USD\$70.5 million per year (Tortora and Soares 2017). It is therefore important to note that this period of time is an exception, but, in general, climate change responses are very intertwined with disaster risk reduction in Haiti.

This report analyzes the current international financial assistance that is related to climate change against Haitian priorities on climate change and identifies gaps that still need to be filled. Because of the close relationships between many climate priorities and development priorities, both explicit climate finance and broader development finance that relate to climate priorities are analyzed.

Methods

This analysis maps currently funded projects against Haitian climate priorities using project data compiled from international sources as described below. 76 current projects were identified. Some of the “current” projects date back six years and are still ongoing, but most were initiated during or after 2015. No field research was conducted to verify whether or not these projects: (1) were in operation, and (2) were adhering to the project goals and descriptions described in funding documents. Some organizations, primarily UNDP and the Food and Agricultural Organization (FAO), provided clarification on the current status of ongoing programs.

Projects that have been funded by international donors were identified using multiple sources. These projects were compiled in a database. First, multilateral fund databases such as the Global Environment Facility, Green Climate Fund, and the Inter-American Development Bank were searched for climate-related projects for Haiti. UN agency databases including UNDP, FAO, and UNEP were also searched. For bilateral donors, such as the United States Agency for International Development (USAID), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (German Development Agency or GIZ) and the Swiss Development Cooperation (SDC), projects were located via their respective websites. The accuracy of the database was checked by UNDP, the Ministry of Environment, and other partners.

Box A: Haitian Climate Priorities

- Integrated water resource management
- Coastal resilience/zone management
- Food security
- Agricultural adaptation
- Development of bio-economy
- Information and education
- Forest protection
- Mangrove protection
- Renewables, energy efficiency, and biofuels
- Energy efficient lightbulbs
- Reforestation/afforestation
- Agroforestry
- National parks
- Watershed management and soil conservation
- Conservation of national resources
- Waste management
- Institutional strengthening
- Climate finance
- Co-benefits in mitigation and adaptation
- Energy security enhancement
- Job creation
- Capacity building

Sources: *National Determined Contribution* (2015), *National Policy on Climate Change* (2017) and *National Adaptation Program for Actions* (2017)

A summary of each project was written so that the projects could be categorized and sorted. Projects were classified as current or past, and they were also categorized as mitigation, adaptation, or both. Mitigation projects are those primarily aimed at reducing greenhouse gas (GHG) emissions. Adaptation projects are those primarily intended to adapt to climate change or to increase resilience to climate change impacts. Those classified as both were synergistic in their intentions, with both mitigation and adaptation benefits. An example of a “both” project would be reforestation, which not only reduces atmospheric carbon dioxide but also reduces soil erosion and improves watershed management, which could be considered an adaptation activity. Projects were also labeled as “climate” or “related to climate”. Those projects “related to climate” were not necessarily intended to address climate goals, but indirectly do so through the provision of co-benefits for climate change mitigation or adaptation. Total funding for each project was collated. Past projects are not considered in this investment analysis. Approximately fifty past projects were identified, but we do not know how many are missing.

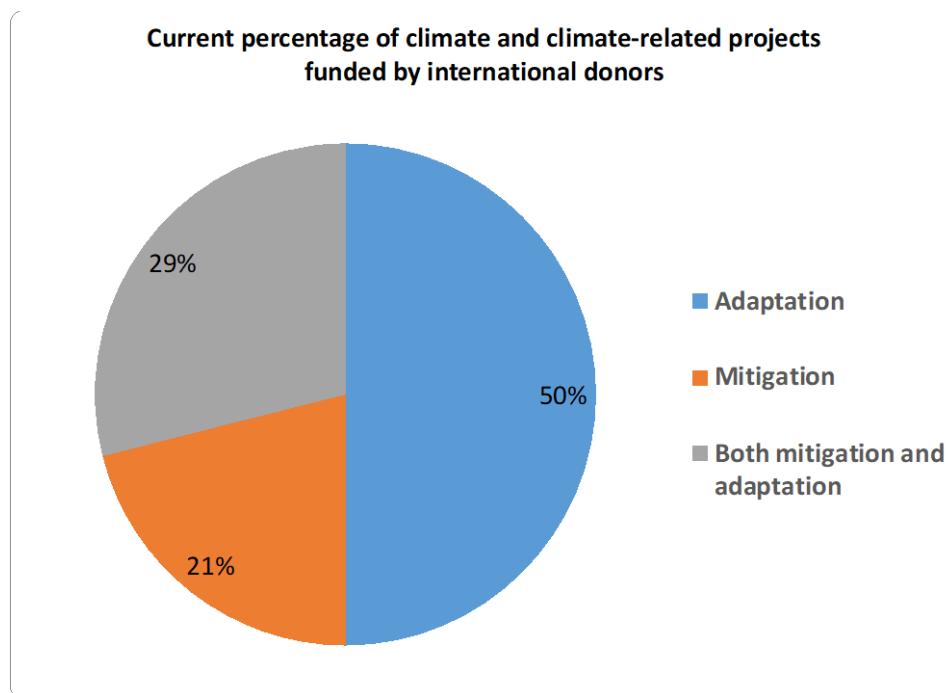
To identify Haiti’s current climate priorities, three primary government documents were analyzed: Haiti’s Nationally-Determined Contribution (NDC) from September 2015, the revised National Action Plan for Adaptation (PANA) from 2017, and Haiti’s National Climate Change Policy (NCCP) from March 2016. In total, there were 22 distinct priorities that could be identified in these three policy documents. The Haitian priorities are listed in Box A and are diverse. Most of the priorities relate to adapting to climate change and increasing Haitian resilience to natural disasters. Haiti also identifies mitigation interventions that would have clear co-benefits for sustainable development, such as deployment of energy-efficient lightbulbs, use of renewable energy, and coastal zone management.

Findings

Haiti’s GDP in 2017 was \$8.4 billion dollars. With that figure in perspective, a total of \$1.3 billion is currently being invested by international donors in climate change or climate-related projects in Haiti in projects that were initiated as early as 2012 and are still ongoing. If short-term disaster risk reduction projects are removed from the total, \$1.1 billion is the total current climate-related investment in Haiti. Of the \$1.1 billion, \$773 million is dedicated to climate change or sustainable energy and the remainder is development aid that is related to, but not intentionally focused on, climate change action. The US\$1.1 billion of multi-year current climate finance into Haiti is equal to official development assistance into Haiti in 2016 (OECD 2018, WDI 2018). This current total represents a considerable scaling up of funding for climate and climate-related overseas funding in Haiti. From 2010-2015, a cumulative total of \$162 million was allocated for activities primarily targeting climate change objectives (Atteridge et al. 2017).

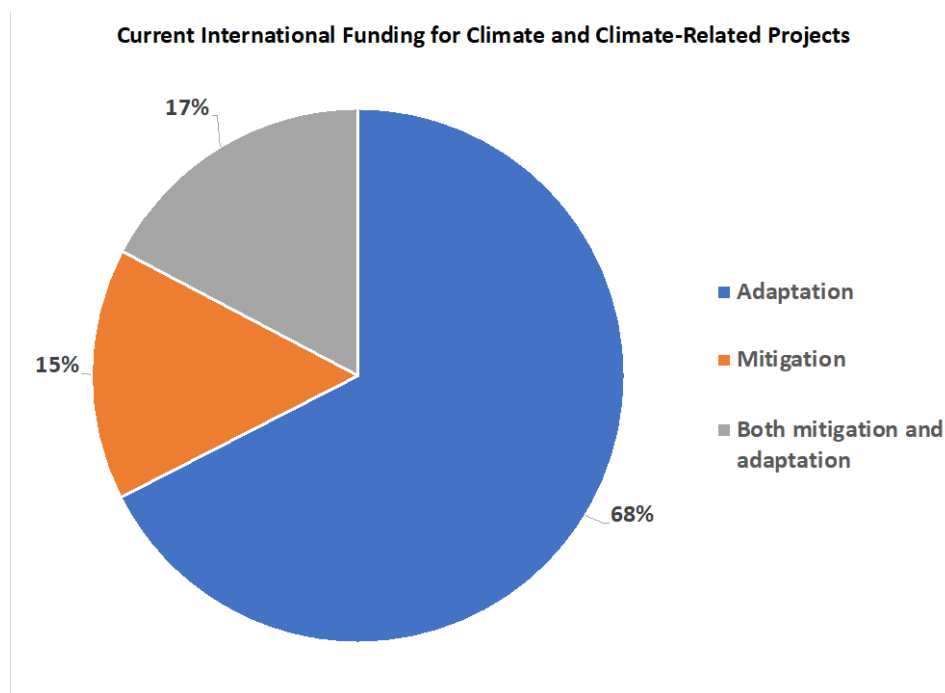
Overall, 76 current projects were identified. One-half of the current projects are fully aimed at addressing adaptation needs. As depicted in Figure 1 below, 50% are adaptation projects, and 29% are synergistic in nature, providing both mitigation and adaptation benefits, and 21% are mitigation projects. It is important to note that not all of these projects are explicitly focused on climate change, as these figures include all of the development funding related to climate change.

Figure 1.



When examined by amount of international funding by type of investment, the differences are starker. Only 15% of the funding is going to mitigation, 68% to adaptation, and 17% is synergistic. These percentages represent a shift towards adaptation and away from mitigation compared with the 2010-2015 period when 33% of funding went to mitigation, 59% to adaptation, and 8% to both (Atteridge et al. 2017). This appropriate shift may reflect the greater recognition of adaptation in the Paris Agreement compared with its predecessor, the Kyoto Protocol, as well as the greater integration of climate change into ODA. Figure 2 below illustrates this breakdown.

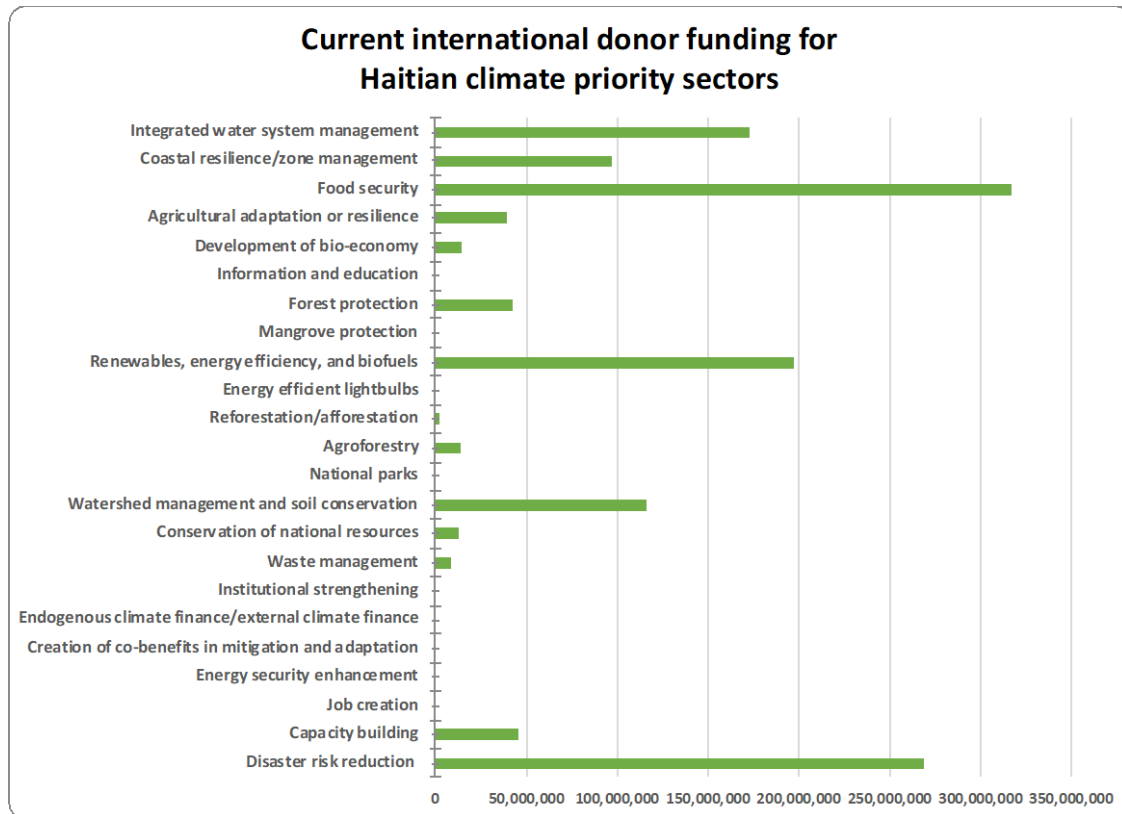
Figure 2.



The majority of international funding has been devoted to four of Haiti's priorities. The first is food security, which is currently receiving \$317 million in support from both bi-lateral and multi-lateral funding. After food security, the next largest category is disaster risk reduction at \$269 million. The next two largest categories are renewables (\$197 million) and integrated water system management (\$180 million). While few of the current projects are still providing emergency assistance after the recent natural disasters, some are still attempting to re-build certain sectors, such as the \$85 million "relaunching" agriculture projects. While significant resources have been invested in the agriculture/food security sector broadly, and each of the projects included in the analysis has adaptation or resilience-building components, many of the projects do not have a primary objective of addressing climate change, and so this \$317 million is likely a significant overstatement of the investments that are directly contributing to building resilience in the agricultural sector.

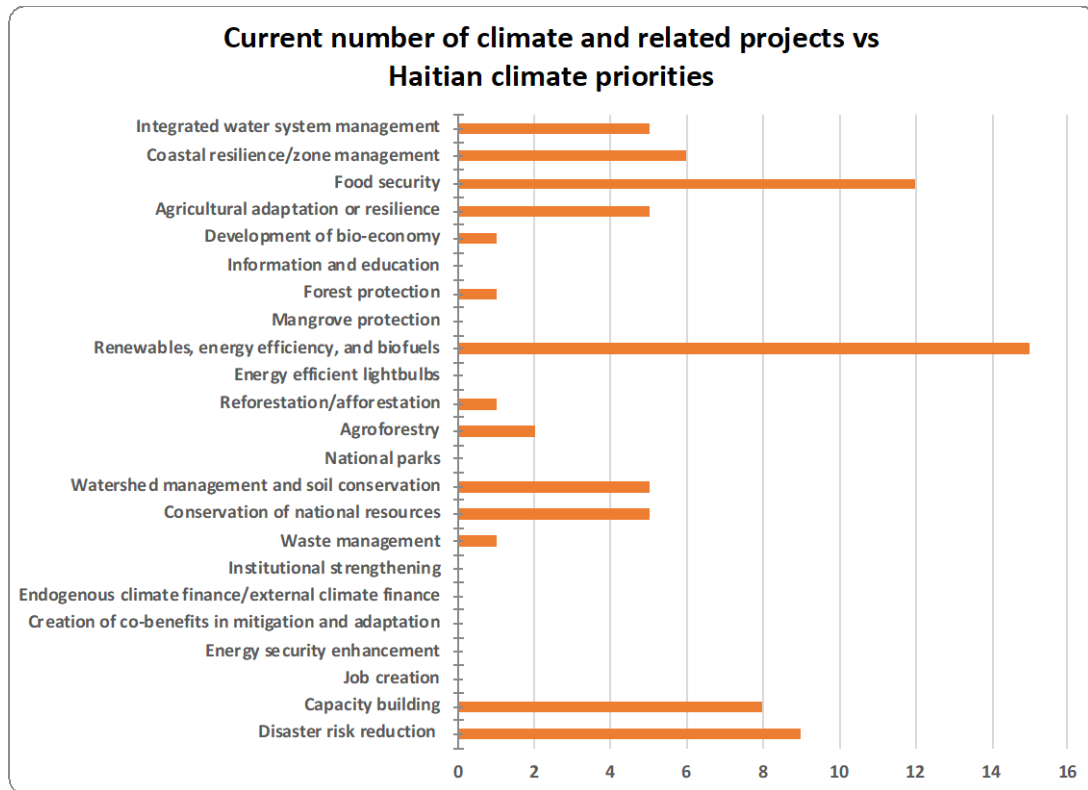
At a distant fifth place is watershed management and soil conservation at \$116 million, and after that, no category even comes close to the top five sectors. The other priority areas all receive less than \$45 million, if they receive any international funding at all. These imbalances can be observed in Figure 3.

Figure 3.



As can be seen in the next figure, Figure 4, the picture appears more balanced when assessed by number of projects by priority. Here, food security/agricultural adaptation/development of the bio-economy still dominates with 36 projects, and renewables/energy efficiency/biofuels comes in second with 21 projects. After that, most Haitian climate priorities have been matched with 1-5 projects, but some have received no funding or projects at all: job creation, creation of co-benefits, waste management, energy-efficient lightbulbs, and information and education. In fact, given that many of the projects serve both adaptation and mitigation purposes, some co-benefits are being created in individual projects, but it seems that this is not being done intentionally. In other words, multiple types of climate benefits can be created with each individual project, including emissions reductions, enhanced resilience, or improvements to human well-being, income, or security. Current projects are either not designed with these co-benefits in mind or they are not described in their documentation as attempting to achieve adaptation and mitigation synergies.

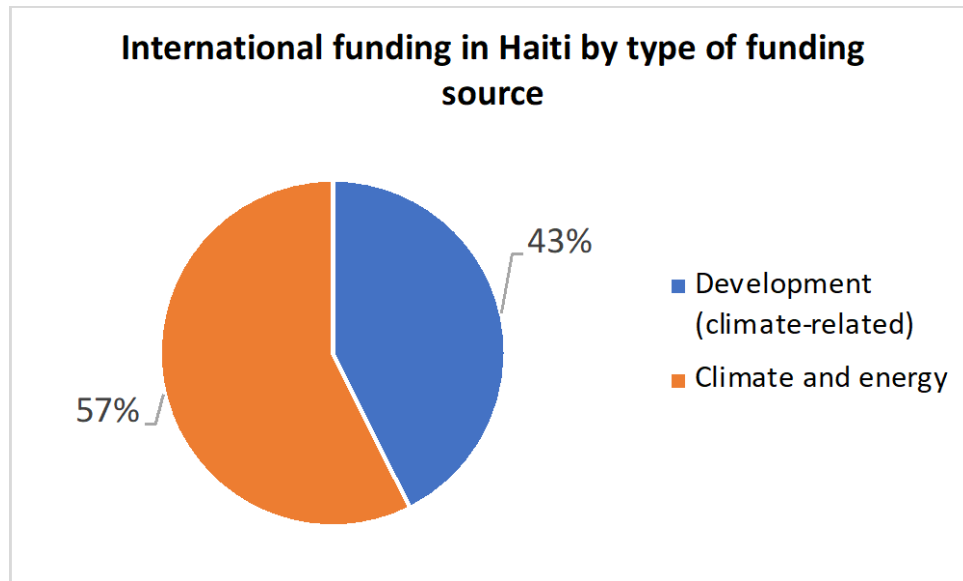
Figure 4.



The five priorities that have no funded projects need more on-the-ground examination. Two of the priorities, job creation and creation of co-benefits, are actually occurring in some of the projects even if the primary goal of those projects is not job creation or creation of co-benefits. Co-benefits are present in many of the projects, but rarely explicitly so.

Of the 76 projects, 32 are not climate-specific projects but were identified as development projects that are *related* to climate change (either mitigation or adaptation). These climate-related development projects account for 42% of the projects and about the same percentage of the total funding (see Figure 5 below). Funding for these climate-related development projects comes primarily from the World Bank, IDB, Switzerland, and Japan. Conversely, majority of the projects identified as explicitly for climate or energy projects account for 57% of the total international funding. The same donors and others are also on this list, but are led by the Global Environment Facility (GEF) (including the Least Developed Country Fund), Germany, Climate Investment Funds (CIF), and the Scaling Up Renewable Energy Program in Low Income Countries (SREP) fund.

Figure 5.



Analysis

The first glaring gap in international climate finance is the lack of funding aimed at **reducing deforestation and land degradation** and increasing **reforestation** and **afforestation**.¹ Forests currently account for just 4% of Haiti's land area (WDI 2018). Only one project exists in this space, and it is very small. Afforestation could have multiple co-benefits because forests can enhance watershed management, can be combined in agroforestry projects to enhance agriculture (such as shade-grown coffee), can absorb atmospheric CO₂ and thus be eligible for REDD+ funding, and can reduce run-off and mudslides during extreme rainfall events. It appears that some of these co-benefits are being realized through the **watershed management** projects, but there is evidence that watershed management in Haiti is not being addressed in an integrated and holistic fashion. There are few projects, they are fragmented and disconnected from each other in their management, and even have adversely affected each other due to lack of consideration of how one project might affect another watershed. Relatedly, there is no current funding for the creation and maintenance of forested national parks.

One of the main drivers of **deforestation**, which increases CO₂ emissions, is the cutting down of forests to convert into charcoal which is then sold as cooking fuel. Ninety-five percent (95%) of all Haitians depend on charcoal and wood for everyday cooking (WLPGA, 2017).

The more **energy efficiency**, the less energy that will be required to be supplied. Given the depth of human need for energy, Haiti's unaddressed concerns regarding energy security, and the climate benefits, Haiti cannot afford to be wasteful in energy consumption. Our database did not include any current clean cookstove projects, although there are several small projects supported by the Canadian government at the moment, but a prior project, the Improved Cooking Technology Project, reduced charcoal use by 120,000 metric tons, saving 500,000 tons of wood and avoiding 800,000 tons of CO₂ emissions (USAID 2016). Still, only

¹ Reforestation refers to establishment of forest on land that had recent tree cover, whereas afforestation refers to land that has been without forest for much longer (www.ipcc.ch/sres/land_use).

4% of the Haitian population has access to clean cookstoves or fuels, and only 38% has access to electricity (WDI 2018). Much more attention to energy efficiency is warranted on the part of international donors. No projects are explicitly focused on enhancing energy efficiency even though one of Haiti's priorities is the deployment of energy-efficient lightbulbs. While it is tempting to focus on the "supply side" in projects that deploy renewable energy, it is just as important to concentrate on the "demand side" to ensure that energy efficient equipment and appliances are available.

Waste management is a priority identified in both the National Program of Action on Adaptation and the National Climate Change Policy, but little funding is being provided in this category with the exception of an \$8 million project supported by Japan to strengthen the solid waste management system. Solid waste clogs urban waterways and leads to the spread of waterborne diseases, and Port au Prince is the largest city in the world without a sewer system (USAID 2017). Waste management is a good example of how international donors could exploit synergies between development, mitigation, and adaptation. Obviously, improved waste management will positively affect fresh water supply, sanitation, and health outcomes. Methane emissions can also be reduced through methane capture and re-use from landfills, and this is an effective mitigation strategy because methane is 25 more potent as a greenhouse gas than CO₂ (EPA 2018). Captured methane could be used to produce electricity, or used to convert into cooking or transportation fuels.

Similarly, **information and education** is prioritized in both the NDC and the National Program of Action on Adaptation, but no such programs have been funded, although information and education likely are components of many of the existing projects.

Coastal resilience and coastal zone management is another area that deserves much more attention. Haiti is an island state that is highly vulnerable to sea-level rise, salt-water intrusion, and storm surges. Most of the population lives in coastal areas (CIA 2018), and accordingly, coastal areas are where there is the most economic activity. The coastal population is also dependent on fisheries that are vulnerable not only to storms but also to rising ocean temperatures and the increased acidification of the ocean due to its CO₂ uptake. Fisheries are not being effectively managed to diversify the catch areas being fished, and as a result of mismanagement and climate change itself, biodiversity in marine areas is under threat. Aquifer salinization is increasing due to sea-level rise and storm surges. Lack of waste management leads to methane emissions and also discourages the growth of tourism. In Port-au-Prince, landslides, flash floods, and coastal storm surges are the most frequent and recurrent hazards (Joseph et al. 2014). Only six projects address this category with \$96.5 million total.

Similar to coastal zone management, **integrated water systems management** is a high priority that is not currently being adequately addressed. There are currently 5 projects underway and one of them is focused on development of municipal water supply systems. Two larger connected projects are aimed at improving small town water supply and sanitation. A fourth project is focused on irrigation and water usage management by smallholder farmers. There appears to be little integration between the integrated water systems management that are more focused on localized water management systems and broader watershed management initiatives.

Although food security has been a major focus of international donors with twelve current projects, an explicit focus on **agricultural adaptation** to climate change is lacking. Only five projects are currently underway that are focused on agricultural adaptation. Recent history

demonstrates why it is so important to focus on adaptation in agriculture because between 2015 and 2017 a persistent drought led to crop losses of 70 percent (Labrador 2018). Two fifths of all Haitians depend on the agricultural sector for subsistence farming and agriculture accounts for 22% of total GDP (CIA 2018).

Finally, **institutional strengthening and capacity building** are clearly needed in Haiti, and there are currently eight projects could be identified in this regard, some of which are small in scale. The largest project at \$20 million is aimed at strengthening local management of drinking water. A second at \$13 million is focused on strengthening adaptive capacities to address climate change. A number of other projects not categorized as mainly being “capacity building” projects do, in fact, have capacity-building components. Institutions and capacity-building could be integrated into most projects, but some additional dedicated projects are probably needed as well.

The major donors are largely concentrated in the multi-lateral development banks and in Europe. The World Bank (including the climate funds housed within it) is supporting the most climate-related projects in Haiti with 15 projects. The GEF comes in second with 9 projects followed by IDB and Switzerland with 6 each. It is important for Haiti to think strategically about how to ensure that development assistance can be best utilized to advance its climate objectives, and at a minimum, ensuring that no development assistance is leading to maladaptation.

The investment priorities identified above are mapped against Haiti’s government ministries in Appendix A. In many cases the investment priorities appear to be cross-cutting and relevant to more than one ministry.

Funding Instruments and Co-Financing

Funding for Haiti’s climate priorities come from multiple instruments. As a Least Developed Country, Haiti is eligible for more concessional development finance compared to other countries. Of the current climate change and energy projects we could identify funding type for 35 of the 44 projects. Of those, 23 were investment grants from multi-lateral and national development agencies, 8 were investment project financing or loans, and 4 were classified as technical cooperation. In addition, of the 32 current climate-related projects we could identify 19 project funding types. 11 were categorized as investment grants, 7 as investment project financing or loans, and 1 project was classified as technical cooperation.

Almost all of the investments in Haiti’s climate priorities analyzed here is in the form of grants or concessional loans, by virtue of the fact that we analyzed public financial investments. Private sector investments would be more likely to include other investments such as equity or non-concessional loans.

For the grants and loans analyzed here, an important component of the financing picture is co-financing. Many funders require that projects identify co-financing before agreeing to invest in a project. The amount of co-financing requested varies considerably from funder to funder and is also highly dependent on the type of project. To provide a more detailed picture of funding instruments and co-financing requirements, the following section analyzes the Green Climate Fund’s Global Portfolio.

Funding Instruments and Co-Financing in the GCF Global Portfolio

The Green Climate Fund provides funding using a variety of instruments, including grants, loans, guarantees and equity. According to the GCF website, currently almost half of that funding is in the form of grants (47%). Most of the rest of the funding is loans (42%), while guarantees and equity make up 2% and 9% of the portfolio respectively.

One of the goals of climate funds, including of the GCF, is to leverage or mobilize additional funding. Potential sources of co-financing include: additional resources from national governments, accredited entities, other partners' agencies and private sector actors. In October 2018, the GCF Board released a policy memo entitled "Co-financing matters" that outlines the GCF approach to co-financing and provides guidance to applicants.

There are several terms used to describe co-finance. The following are the GCF definitions of these terms:

- **Direct co-finance** (also referred to as additional finance, primary co-finance): this includes all financial resources (public and private) from third parties that flow into the project/program alongside the financing from the GCF. A causal link must be shown between the GCF financing and the additional finance.
- **Indirect co-finance** includes all financial resources (public and private) that indirectly flow downstream into projects/programs supported by the GCF. It must be shown that the GCF financing acted as a catalyst for this financing.
- **Leveraged finance** (also referred to as mobilized finance) is the combination of direct and indirect co-finance.

There is no right level of co-financing- this will be dependent on the project characteristics and national circumstances. When the GCF is only covering the incremental costs of a project, co-financing is expected to cover the non-climate related costs of the project. Overall, the co-financing ratios for the GCF portfolio are 1:2.33. In other words, for every dollar that the GCF has invested, \$2.33 of co-financing have been secured. These numbers vary by theme. Mitigation projects have a higher ratio of co-financing than adaptation projects. Mitigation projects have a ratio of 1:3.03 and adaptation projects have a ratio of 1: 1.57. Similarly, projects co-financed by the private sector have higher co-financing ratios compared to those co-financed by the public sector: (1:3.00 for the private sector and 1:1.94 for the public sector).

Compared to the GCF other sources of climate finance have much higher ratios of co-financing. The GEF's climate change portfolio has a co-financing ratio of 1:12.2, and the Climate Investment Funds of the World Bank have a co-financing ratio of 1:5.95. Two differences help explain the much higher levels of co-financing in the GEF: 1) the GEF projects are typically much smaller, and are often "add-on" projects to larger development projects, and 2) the GEF uses a more inclusive definition of co-finance that includes in-kind contributions.

Conclusion and Recommendations

Current financial assistance for energy and climate-related projects is concentrated in just three of Haiti's twenty-three articulated priorities for combatting climate change: food security, renewables, and integrated water system management. In addition, disaster risk reduction receives significant funding, which is indirectly related to climate change. With the concentration of resources and projects in these four categories, many of the Haitian priorities

appear to be relatively neglected, including agricultural adaptation, afforestation, agroforestry, coastal-zone management, capacity building, development of a bio-economy, institutional strengthening, mangrove protection, and waste management.

Promoting synergies to effectively increase climate financing and enable funding to provide maximum benefit

Given the need for climate-specific funding at the present, Haiti should intentionally exploit synergies between mitigation, adaptation, and development in each project. If every dollar spent can contribute to all three goals, the cost-efficiency of the project can be very high. Almost half of the funding identified in this analysis did not come from climate-dedicated funds, but was deemed 'related to climate' in our categorization. One example is the Three Bays national park that is supported by USAID and intended to conserve the marine and coastal areas and to support sustainable livelihoods of the communities in this region. Another example is the Resilient Productive Landscapes project supported by the World Bank, which is aimed at improving more resilient management practices in agriculture as well as enabling the government to respond promptly and effectively in case of an emergency.

Fully exploiting the synergies among climate mitigation, adaptation, resilience, disaster risk reduction, and development requires that both Haiti and international donors mainstream climate considerations into all development and disaster risk reduction funding, and conversely, mainstream development considerations into all climate funding. Although developing countries have historically been concerned about diverting development aid to climate, in Haiti's case, if development investments are not made climate-resilient, they are going to be vulnerable to all of the climate-induced natural hazards that Haiti routinely experiences. If all types of funding incorporate these multiple needs into project design and implementation, much more international funding can be effectively mobilized.

The important role of policy, domestic and international

In order to catalyze more international climate change finance, the Haitian government must be proactive in its approach to planning and coordination of all of the international donor contributions. It should devise and implement domestic incentive policies because internationally-funded projects will have to comply with domestic laws and regulations. To incentivize the transfer of more energy-efficient equipment such as LED lightbulbs, for example, Haiti could promulgate a performance standard for lightbulbs. Similarly, to spur the development of decentralized microgrids that would provide electricity access and be more resilient to extreme weather events and hurricanes, the Haitian government could open up the electricity sector for competition (Electricité d'Haïti is a monopoly) and furthermore clarify the legal and regulatory framework for microgrid development and operation (Steubi and Hatch 2017). Haiti could also create a new flood standard requiring all new infrastructure projects such as roads and bridges be designed and constructed so that they would survive extreme weather events and rising sea-levels. Well-designed policies on a sector-by-sector basis would provide a comprehensive institutional environment that would guide domestic and international actors alike, and reduce the need to manage and coordinate each specific project. It is likely that Haitian government officials would benefit from training and additional capacity building for climate policy design and implementation.

Likewise, international donors and investors can create policies for themselves for overseas investments which require mainstreaming of climate change into development funding, and vice versa. The Green Climate Fund has already controversially rejected some

project proposals because they looked too much like “development” (Rowling 2017), but some governments have already begun the mainstreaming process.

Based on our analysis, showing the gap and misalignment between funding and Haiti’s priorities, the next step for Haiti is to list its priorities in relevance of its current urgent needs. Of the priorities listed in the database, what are the top five that require the most attention? No doubt all are important, but what is crucial in the next 3 - 8 years for the country in terms of adaptation or mitigation or both?

Appendix A

Investment Priorities Mapped Against Haitian Ministries

Ministry	Investment Priorities
Ministry of Agriculture, Natural Resources, and Rural Development	Food security Agricultural adaptation Development of bio-economy Integrated water resource management Forest protection Mangrove protection Coastal zone management Agroforestry National parks Watershed management and soil conservation Conservation of natural resources Co-benefits between mitigation and adaptation
Ministry of Commerce and Industry	Development of bio-economy Agroforestry
Ministry of Communication	Information and education
Ministry of Defense	Energy security
Ministry of Economy and Finance	Climate finance Energy security Job creation
Ministry of Education	Information and education
Ministry of Environment	Climate change policy Forest protection Mangrove protection Coastal zone management National parks Watershed management and soil conservation Co-benefits between mitigation and adaptation Waste management Institutional strengthening Capacity building
Ministry of Foreign Affairs	Energy security
Ministry of Health	Clean fuels Waste management
Ministry of Information and Coordination	Information and education
Ministry of Interior and Territorial Communities	Institutional strengthening
Ministry of Planning and Foreign Aid	Mainstreaming climate and development aid Institutional strengthening Job creation Capacity building

Ministry of Public Health and Population	Clean fuels Waste management
Ministry of Public Works, Transportation, and Communications	Waste management Energy efficiency Clean energy supply
Ministry of Social Affairs and Labor	Coastal zone management
Ministry of Tourism	Job creation

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