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INTEGRATED MARINE ECOSYSTEM MANAGEMENT IN NORTHERN HISPANIOLA Year 1 Annual Report



Submission Date: 11/9/20
Number: 72051719CA00004
September 6, 2019 to September 5, 2022
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Abbreviations

3Bays	Three Bays Marine Protected Area (Haiti)
ANAP	(National Protected Areas Agency) Haiti
CODOPESCA	Dominican Fishing and Aquaculture Council
CSO	Civil Society Organization
DR	Dominican Republic
GHG	Green House Gas
GoDR	Government of Dominican Republic
IAD	Agrarian Reform Agency
IMEM	Integrated Marine Ecosystem Management
INDRHI	National Water Resources Institute
MPA	Marine Protected Area
MPAGC	Marine Protected Area Governance Council
NE	North East
Q1 (2,3,4)	Quarter 1 (2, 3, 4)
SEMANAH	Haitian National Maritime and Navigation Service
SRP	Sustainable Rice Platform
TWG	Transboundary Working Group
USAID	United States Agency for International Development

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Executive Summary

The Integrated Marine Ecosystem Management in Northern Hispaniola project (IMEM) preserves and promotes the livelihoods of farmers and fishers in Haiti and the Dominican Republic (DR) by improving ecosystem management across Marine Protected Areas and promoting sustainable practices in farming and fishing throughout Northern Hispaniola. Below is a list of Key Achievements from Year 1:



Figure 1 Key achievements of Year 1

Although closely sharing a physical environment, the political, economic, and social contexts in the DR and Haiti are very different in many respects and tensions do persist between the two countries. The two countries' different political contexts also pose challenges as well as differing levels of access to infrastructure, such as electricity and fuel sources. In 2020, these challenges were compounded by the COVID-19 pandemic, which led to the implementation of social distancing measures and policies that significantly affected livelihoods in Northern Hispaniola and the implementation of IMEM activities. To support USAID in COVID-19 relief programming, IMEM is leveraging our local partners and their networks to support the delivery of monthly food rations to 700 families.

Despite these multiple challenges, throughout the first year of programming, the IMEM project successfully implemented a variety of activities across each of its program areas, achieving significant progress toward its objectives.

The project established partnerships to implement activities in both DR and Haiti with two leading local organizations, AgroFrontera in DR and FoProBiM in Haiti. Working with its partners, the project identified and engaged with key stakeholders in the marine and sustainable rice value chains and

created governance councils (GC) in the four marine protected areas (MPA), which are the key vector for addressing the issues affecting the fish value chain.

The project identified and recruited members to the GCs and created a clear role for local leaders to participate. In Haiti, the project designed a socioecological study that will develop a better understanding of the fishing ecosystem in Haiti. In both countries, the project conducted workshops with stakeholders to identify issues affecting the fish and sustainable rice value chains and affecting the management of the MPAs. Similarly, they presented the plans for the Marine Protected Areas (MPAs) and initiated discussions of the plans, which culminated with development of a program for building capacity for the GCs.

Working with public education stakeholders in both countries, IMEM began developing curricula to integrate teaching of natural resource management and ecosystem management in schools. The project identified the key principles for the curricula and developed modules for use in public schools in the DR and Haiti.

Over the course of the year, IMEM and its partners disseminated a variety of materials to support implementation of best practices in fishing and farming systems and ecotourism. These materials raise awareness of conservation challenges, such as the protection of marine turtles in coastal waters and guidance on best fishing practices.

In February, IMEM was officially certified as a Sustainable Rice Platform (SRP) project, an important designation because it connects the project to sustainable rice projects worldwide to share research and best practices in sustainable rice production. Through an innovative financing initiative, IMEM demonstrated that sustainable rice production can succeed and that the market demand necessary to support it exists. Indeed, perhaps most significantly, data collected during the winter growing season demonstrate the greater profitability of sustainable rice compared to conventional rice. The potential market success of sustainable rice is a powerful incentive for continued efforts in its favor. IMEM's work on a financing scheme for sustainable rice farmers connected a rice farmers association to a source of finance and a leading rice marketing firm; the experience showed that sustainable rice production has great potential for success.

Hundreds of thousands of Dominicans and Haitians rely on fishing and rice farming for their livelihoods, but these livelihoods face environmental threats. If the marine areas in Northern Hispaniola are not properly managed, fish populations will decline and, similarly, if farmers do not adopt sustainable rice practices, pollution will degrade the environment, too. In its first year, IMEM laid the foundation for activities that will address these threats and implemented a variety of activities that are tackling the key challenges, despite the disruptions caused by the COVID-19 pandemic. The project will look to successfully build on this foundation in Year 2.

Program Overview

The Integrated Marine Ecosystems Management in Northern Hispaniola, hereafter referred to as the “IMEM program,” is a three-year program made possible by the support of the American People through the United States Agency for International Development (USAID), which aims to improve the management and conservation of marine ecosystems on the Northern coast of Haiti and the DR while minimizing economic and cultural disruption to the communities that depend on those ecosystems.

To obtain optimal results in the effective and participatory management of marine protected areas in the target region, the following specific objectives were established:

1. Implement participatory and adaptive management provisions established in the management plans for marine protected areas of Mangrove Estero Balsa National Park, Cayos Siete Hermanos Wildlife Refuge, and El Morro National Park in DR and Three Bays National Park in Haiti;
2. Foster local-level, cross border collaboration and experience-sharing related to participatory governance of Marine Protected Areas (MPA);
3. Disseminate and implement best practices in fishing and farming systems and ecotourism.

The IMEM program is led by Counterpart International in partnership with AgroFrontera and FoProBiM, bringing over 10 years of experience working in the DR and Haiti to preserve and improve the management of MPAs and livelihoods. The local partners have worked successfully with citizen-led development efforts in the areas of alternative livelihoods and ecosystems protection in the Northern Hispaniola region.

The marine-coastal biodiversity of the Hispaniola Island is threatened by several factors, including pollution, overfishing, invasive species, and unsustainable recreational practices. These factors negatively impact, directly and indirectly, livelihoods and food security for the people who depend on the marine resources (i.e. coral reefs, beaches, fishing, and mangroves). Poor agricultural, timber, and fishing practices have led to high rates of marine environmental degradation and pressure on the ecosystem. As such, Northern Hispaniola faces pressures like habitat conversion (such as the conversion of mangroves for agriculture or charcoal production), overexploitation of natural resources (such as overfishing), and pollution (such as agricultural runoffs).

IMEM strengthens local participatory governance and effective management of MPAs in Northern Hispaniola and facilitates the adoption and dissemination of sustainable fishing and farming practices to reduce local pressures on coastal and marine ecosystems. An evidence-based approach from the community level up to the bi-national level is helping rebuild depleted fish stocks, conserve, and reestablish mangrove forests, and protect coral reefs. A biodiversity conservation strategy considers the bi-national nature of the Northern Hispaniola fisheries and fosters participatory governance of MPAs and cross-border coordination at the local and regional levels. IMEM is working with various community stakeholders, including related private sector tourism entities, to build capacity in good governance so that activities, programs, and ecosystems management are implemented in compliance with existing laws and regulations. Through the Cross-Border MPA Working Groups and MPA Governance Councils, IMEM builds capacity and fosters collaborative relationships that support behavior change among fishers and farmers along the Haitian-Dominican border and contributes to the protection of Northern Hispaniola ecosystems.

Implementing Context

The implementing context across the IMEM Program is unique as activities are ongoing in both Haiti and the DR. We are also laying the groundwork this year for activities that will bring stakeholders from both countries together. Therefore, it is important to note that Haiti and the DR have had long standing political tensions between them, their citizens have very little in common, and all of this is even more important when working along the border with more rural and marginalized communities. To mitigate this and ensure buy in and local level engagement, the IMEM team has relied heavily on our local implementing partners to kick off activities while leveraging their knowledge of the local context and manage potential conflicts and tension that might arise.

Throughout the first year of implementation, IMEM has seen the context change dramatically due to COVID-19 and the global pandemic. On March 1, 2020, The Ministry of Public Health confirmed the first case of COVID-19 in the DR, and since then has put in place a state of emergency with restrictions for citizen gatherings, required social distancing and mask measures. In Haiti, the President declared a state of emergency a few weeks after enforcing similar requirements. The borders were also closed between the two countries, which halted IMEM's transborder activities immediately.

In response to COVID-19, the IMEM team adapted programming to ensure the project aligned with all government-issued mandates of both the DR and Haiti as well as guidance from USAID. Specifically, activities ongoing in the DR switched to remote and virtual interfaces, such as conducting group meetings on Google Meet and Zoom. Our local partners live and work in the communities where we are implementing IMEM, so that also allowed them to hold one-on-one meetings safely while adhering to social distancing guidelines.

Before COVID, Haitian government institutions were already proving to be difficult to work with due to continuous in-fighting and the lack of cooperation or will to solve problems related to MPA management. Specifically, the feuds have been between the Brigade de surveillance des aires protégées (BSAP) an armed government agency tasked with the protection of resources within Haiti's protected areas (basically game wardens), the local Mayors, and the Haitian National Police (PNH).

Despite these challenges, FoProBiM has kept constant communication with government stakeholders, continually trying to offer support. As a result, they were successful in creating a Governance Council for the MPA of 3 Bays National Park, which will bring local government officials and other representatives together to discuss sustainable ecosystem management.

In the DR, national elections were scheduled for May of 2020, but postponed to July due to the COVID-19 pandemic. The elections resulted in a change in the Presidential Administration, which meant that government officials were replaced across various government entities. For the IMEM Program, that meant the new appointees were overseeing important bodies of stakeholders related to MPA management. As a result, IMEM spent most of the last quarter actively seeking opportunities, in coordination with USAID, to meet and present our program's goals and achievements thus far. All government stakeholders that have been met by IMEM thus far have provided their verbal commitment to support the program and are eager to see our accomplishments in Year 2.

Activity implementation progress

Overview of Progress from Year 1

IMEM launched with the signing of sub agreements with the project's local implementing partners, AgroFrontera and FoProBiM. AgroFrontera strengthens local community organizations in the DR and works with farmer and fisher groups to adopt and disseminate environmentally sound farming and responsible fishing systems practices. FoProBiM is a non-profit foundation in Haiti that seeks to monitor and protect the environment, and biodiversity in particular, by working with watershed and coastal area inhabitants including women's groups, youth, farmers, fishers, and those making use of environmental resources through a wide variety of sectors such as tourism, fuel production, and marketing. The IMEM team also quickly facilitated site visits with USAID, fostering discussion of the program's approach, which guided the writing of the work plan that led implementation efforts over the course of Year 1.

In the second quarter, four Marine Protected Area Governance Councils (MPA GC) in both the DR and Haiti were created for each of the MPAs: Mangrove Estero Balsa National Park, Cayos Siete Hermanos Wildlife Refuge, and El Morro National Park in DR, and Three Bays National Park in Haiti. Each GC is representative of the key stakeholders for each MPA. AgroFrontera began to provide capacity building and technical assistance to the DR GCs on key concepts related to ecosystem management best practices. These GCs under IMEM will be responsible for designing and implementing programs to fulfill the objectives of the MPA management plans. In Year 2 of the project, a sub-set of these stakeholder groups will comprise the Transboundary Working Group (TWG), which will facilitate cross-border actions to foster the conservation of marine biodiversity and improve fisheries management across Northern DR and Haiti.

In February, IMEM certified as a Sustainable Rice Platform (SRP) project. The internationally recognized SRP connects sustainable rice projects worldwide to spread awareness and share research and best practices in sustainable rice production. This designation connects IMEM to global stakeholders and allows the project to leverage its research to impact sustainable rice farmers around the world.

The data from the first growing season under IMEM shows that producing rice sustainably has the potential to increase both the farmers profits and higher yields of quality rice, while lowering the cost of production and decreasing the use of nitrogen fertilizers and toxic pesticides. In addition, AgroFrontera strengthened the locally-driven rice value chain by facilitating access to low interest loans for IMEM rice farmers while creating a direct link between the farmers' sustainable rice and a rice company interested in promoting this sustainable rice to consumers. As a result of IMEM's interventions, the operations of all participating farmers were profitable, generating gross sales of US \$1,945,075. When compared to conventional rice farmers, IMEM's sustainable rice growers averaged a net benefit of US\$1,330 per, which translates to 24% increase in profitability for a sustainable rice farmer.

As the second quarter ended, COVID-19 had become a national health emergency in both the DR and Haiti. This led the IMEM team to adapt programming substantially to ensure the project was in line with all federal mandates, including both governments and guidance from USAID.

In DR, AgroFrontera engaged the members of the newly formed MPA GCs in discussions to develop and launch an MPA Monitoring and Enforcement Plan. The launch of the plan is a key result of IMEM's ongoing institutional capacity building and awareness raising of the importance of MPA rules and regulations. IMEM also established a preliminary agreement with the Armed Forces Command Center to

renew fishing boat registrations in Montecristi. Through this support, project personnel facilitated the registration of over 300 fishing boats in the communities of Montecristi and Manzanillo and increased the frequency of fishing trip requests for permission to leave port. Supporting fishers to comply with these key rules will help build the base for future endeavors of MPA management that will promote a sense of order and compliance among fishers. The agreement is expected to be formally settled in Year 2 of the program.

Across other IMEM objectives, AgroFrontera and Counterpart began engaging with new government officials in the DR. These officials took office in August after the change in administration, and IMEM actively sought opportunities, in coordination with USAID, to meet and present the program's goals and achievements. The team also drafted the Annual Operating Plan (AOP) for the National Park of the Estero Balsa Mangroves and is currently coordinating with the Vice Ministry of Protected Areas for its review and subsequent approval

In Haiti, FoProBiM's technical team worked on the first draft of the socioecological survey with consultant Michael Cox, a Dartmouth College professor and expert on fishing and farming in Northern Hispaniola. The first field test of the survey was completed, and it is ready to be conducted early on in Y2. FoProBiM also developed an inventory of community-based enterprises that are potentially economically viable and directly contribute to or foster coastal and marine biodiversity for the nine targeted communities of the 3Bays. The inventory, based on interviews with more than 70 stakeholders, identified 21 enterprises engaged in alternative livelihood activities.

In the final quarter of Year 1, the IMEM team ramped up its COVID-19 relief programming across Haiti and the DR. In Haiti, the first Haitian-Creole COVID-19 pamphlets and posters were drafted for the IMEM communities to be distributed throughout the program's network in country and directly to community health organizations in the area. In the DR, IMEM supported the distribution of food rations to 700 families across Montecristi and leveraged coordination support by recruiting 31 local community-based enterprises to distribute aid to the most rural and marginalized areas.

Implementation status by objective

Objective 1. Implement participatory and adaptive management provisions established in the management plans for the marine protected areas of Mangroves of Estero Balsa National Park, Cayos Siete Hermanos Wildlife Refuge, and El Morro National Park in DR and Three Bays National Park in Haiti.

Activity 1.1 Conduct socioecological study and assessment in Haiti

As Year 1 ended, Dartmouth Professor Michael Cox completed the first draft of the socioecological study to better understand the fishing ecosystem in Haiti (number of fishers, their sources of income, and fishing marketing chains) which will be a key data collection activity for the IMEM Program. The survey will be finalized and conducted early in Year 2, which will likely involve using remote survey implementation tools due to COVID-19 social distancing measures.

Activity 1.2 Build capacity of local actors to lead in governance of MPAs.

In its first year, IMEM worked closely with its partners at AgroFrontera and FoProBiM to identify local stakeholders that would then form MPA Governance Councils, and implemented a capacity building program to address skills and knowledge gaps among these stakeholders. Additionally, IMEM partners developed curricula for public schools in both the DR and Haiti.

1.2.1 Identify and recruit local stakeholder groups for MPA governance.

In the DR, AgroFrontera identified and recruited a wide variety of public, private and civil society stakeholders to participate in MPA governance activities. Those identified included representatives of the Ministry of Tourism, Ministry of Environment and Natural Resources, the Dominican Fishing and Aquaculture Council (CODOPESCA), the National Water Resources Institute (INDRHI), the Agrarian Reform Agency (IAD), the Ministry of Agriculture, municipal and provincial authorities and armed forces, fisher and farmer organizations, tour operators, hotels and restaurants, community organizations, salt manufacturers and tourism clusters. AgroFrontera engaged stakeholders to create the multi-sectoral Governance Councils for Cayos Siete Hermanos, El Morro National Park and Mangroves of Estero Balsa National Park.

In Haiti, FoProBiM efforts led to the first meeting of the MPAGC in March and involved 38 stakeholders, including the Ministry of Environment, the Ministry of Agriculture, mayors of the five counties of the 3Bays, the National Maritime Service (SEMANAH), the Haitian National Police, and representatives from civil society organizations (CSOs), fishers, charcoal producers, and salt producers.

Throughout the year, both implementing partners worked with the stakeholders to form the Governance Councils, while also identifying gaps in skills and knowledge to be addressed by capacity building activities (discussed in 1.2.3).

1.2.3 Identify capacity building topics / themes for MPAGC

IMEM partners in the DR and Haiti worked closely with stakeholders to identify capacity building topics and themes for MPAGCs.

In the DR, rice farming system stakeholders identified the misuse of agricultural chemicals and poor irrigation water management as the two principal problems affecting the governance of buffer zones in the Montecristi MPAs. They ranked five issues to address to improve the MPA governance:

- 1 Lack of dissemination of policies that regulate agrichemicals
- 2 Minimal enforcement of existing rules restricting the import of agrichemicals
- 3 Minimal government oversight of solid waste management policy
- 4 Lack of maintenance of irrigation and drainage canals
- 5 Lack of transparency and effective management of irrigation water

Fishing stakeholders identified overfishing as the principal issue in the governance of MPAs in Montecristi. They said the lack of compliance with rules and regulations is the principal cause of the overfishing. When asked to identify key areas or gaps to address to improve the governance of the MPAs, the fishers indicated:

- 1 Minimal compliance with regulations
- 2 Few practical livelihood alternatives
- 3 Minimal consequences for violating fishing regulations
- 4 Lack of awareness of the fishing rules and regulations
- 5 Lack of consensus among fishers to adopt responsible fishing practices

Constraints to adopting effective and responsible fishing practices included minimal education and training in responsible fishing practices, the presence of too many fishers, a lack of empowerment in the fishing community and minimal alternatives to fishing.

In Haiti, FoProBiM finalized the topics and themes for the capacity building modules for the MPA Governance Council in Haiti, which can be found below in **Figure 2**.

1.2.4 Implement capacity building trainings for local stakeholders based on SCALE+ methodology

Both AgroFrontera and FoProBiM worked with a selection of key local stakeholders to build their capacity to allow them to participate more effectively in IMEM activities. This support leveraged the stakeholders' existing local expertise and networks to create an increasingly sustainable ecosystem for participatory management of MPAs. The work of both AgroFrontera and FoProBiM is presented below by the MPA area concerned.

Cayos Siete Hermanos Wildlife Refuge: AgroFrontera held three training sessions over the course of January and February 2020 with the Caño de Yuti fisher association that focused on building skill sets of both the directors and members. Sessions focused on leadership development, conflict mediation and resolution, and recruitment and retention of association members. The association recruited 31 new members after the training.

Meetings with tour operators in Montecristi introduced them to management plans and discussed the importance of the local tourism sector in the conservation and development of the MPAs in Montecristi. As a result, the tourism sector representatives decided to form their own association of tour operators, tentatively named the Asociación de Tours Operadores Marítimas

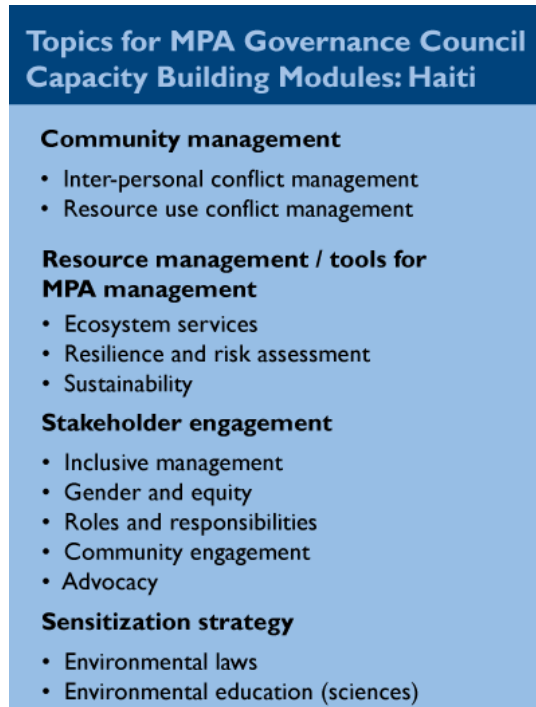


Figure 2 Topics for MPA Governance Council capacity building modules: Haiti

y Guías Terrestres de Montecristi. AgroFrontera is now working with the association to support the development of the association’s bylaws and articles of incorporation. This is the first time in Montecristi that a group of local tour operators has agreed to work together to improve the economic performance of the tourism sector while ensuring biodiversity conservation of the MPAs in Montecristi.

Cayos Siete Hermanos Wildlife Refuge is unique as it is the only MPA in the Dominican project area that is fished intensively by both Manzanillan and Montecristeño fisher groups¹. Dartmouth College researchers generated heat maps that show the areas fishers are most active, based on the responses of fishers when asked where they fish (Figure 3). Given the overlap, it is key that the Governance Council for the Cayos Siete Hermanos Wildlife Refuge is composed of both fisher groups from Manzanillo and Montecristi.

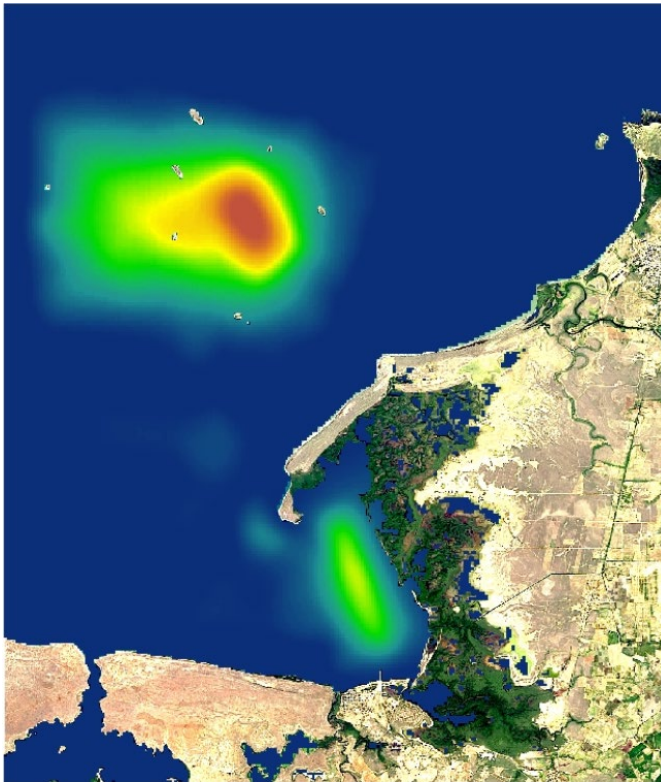


Figure 3 Fishing activity of Manzanillo fishers. The darker the color the greater the intensity.

El Morro National Park: AgroFrontera’s work in El Morro National Park led to a more representative membership on the Governance Council, which now includes representatives of the newly formed tour operators’ group described above, as well as hoteliers, fisher groups, and government agency representatives from the natural resource, cultural, fishing and tourism sectors.

Mangroves of Estero Balsa National Park: AgroFrontera facilitated three training sessions with fishers in Manzanillo to restructure and strengthen the administration and overall capacity of their association, *Asociación de Pescadores Guardianes de la Bahía de Manzanillo* (the “Protectors of Manzanillo Bay” Fishers Association).

Through AgroFrontera’s participation in the USAID Local Works Initiative, IMEM identified and engaged three additional community-based organizations whose members directly impact the health of the mangroves in Estero

Balsa, and which had never previously communicated with each other: The Association of Community Fishers of Los Conucos y Judea de Montecristi, the Ecological Society of Montecristi Park and the Dairy Association of Los Conucos de Montecristi who are located in the buffer zone of the Mangroves of Estero Balsa National Park and are therefore key stakeholders to engage in the management plans.

As a result of AgroFrontera’s work as described above, the Governance Council for the Mangroves of Estero Balsa National Park is particularly diverse and inclusive, representing agriculture (rice farmers / dairy farmers), fishing (fishers who fish in canals and river and the mangroves and the Bay of

¹ There is ample evidence that Haitian fishing boats also fish in the Cayos Siete Hermanos

Manzanillo), a community-based conservation group, two community based development groups, a port workers group, two rural communities and government agencies (crops, livestock, water resources, agrarian reform, fishing, tourism and the environment and natural resources) and provincial and local government offices.

Three Bays National Park, Haiti: The first Governance Council meeting in Haiti was held in March and included members of the public and private sector. The meeting introduced IMEM to a wide range of local actors and initiated cross-sectoral working groups to ensure inclusive participation. The participants agreed to continue to have organized bi-monthly meetings and other, specific meetings for various sectors as needed. Due to disagreements and growing conflict between the different public sector agencies, it will be much easier to prioritize moving forward with the private sector while the public sector continues to resolve its issues. This is a challenge for IMEM, as the public sector is very important to the ultimate success of the project. FoProBiM has not stopped engagement with the public sector and is working to carefully navigate these issues as Haiti continues to experience difficult implementation scenarios.

1.2.5 Develop modules for MPA education program for public schools

Despite the closure of schools due to COVID-19, IMEM partners developed an education outreach program and curriculum for youth in the DR, and Haiti. Environmental education of youth is key to the sustainability of effective MPA governance, building capacity and knowledge within communities to understand the importance of natural resources and ecosystem behavior.

In the DR, AgroFrontera met with teachers and principals of schools in low-income areas to develop the education and outreach program in natural resource management for youth. Two pilot schools were chosen for the first phase of the MPA education program, primarily because of their proximity to rice and fisher communities. The principals and teachers suggested that the curriculum be aimed at children between the ages of 11 and 16, but that all interested youth between the ages of 11 to 18 (whether enrolled in school or not) be recruited into the program, for a total of 30 students. The parents, teachers and staff decided on five principles to guide the development of the learning modules, listed in Figure 4 below.

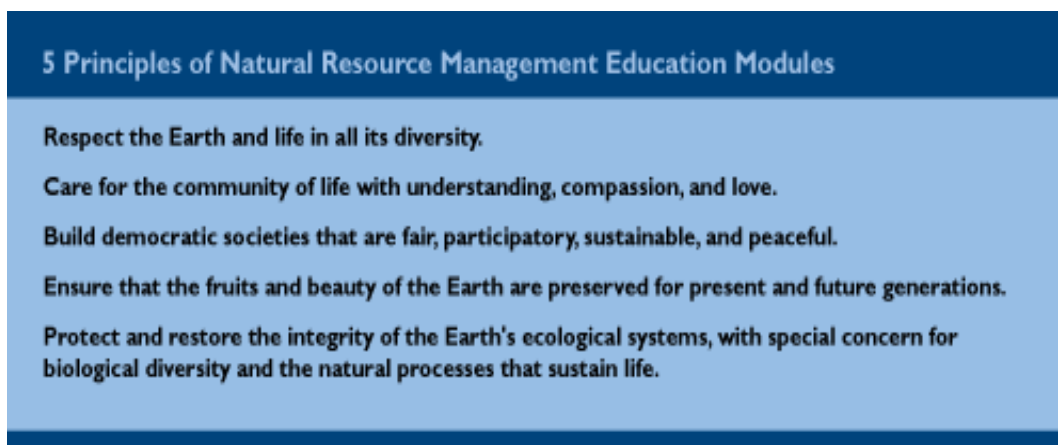


Figure 4 5 principles of natural resource management education modules.

With those guiding principles, AgroFrontera worked with local school teachers to develop three learning modules for school children that introduce the basic concepts of natural resources, human impact on natural resources (with a focus on locally derived pollution) and locally-driven practices to reduce the community's environmental footprint. During February and early March, sessions in three schools in the communities of La Recta de Sanita, San Fernando and Montecristi took place with a total of 119 children.

In Haiti, the classroom teaching materials were developed and FoProBiM identified four schools from a list of 60 to engage the local teachers in preparation for the workshops. Due to COVID-19, the modules in Haiti haven't been held yet, but are ready for implementation once schools reopen. The program, once implemented, will reach 100 students, aged 8 to 12, and include a Training of Trainers on the materials and modules for at least 30 teachers.

Activity 1.3: Modify Adaptive Management Plans for MPAs

1.3.1 Provide local stakeholders an overview of existing MPA management plans.

In the DR, IMEM and AgroFrontera sought government approval for plans to co-manage MPAs, which will add greater legitimacy to the implementation of IMEM and foster greater collaboration between AgroFrontera and Counterpart. It would show IMEM's commitment to foster and steward locally driven and adaptive MPA management in Montecristi. It was also well timed, as the Ministry of the Environment had prioritized the creation of co-management arrangements between the GoDR and private sector stakeholders for MPAs. For the same reasons, FoProBiM is also expected to sign a co-management agreement with the Government of Haiti for the MPA of the Three Bays National Park.

Over the year, AgroFrontera worked with representatives of the Montecristi MPA Governance Councils, introducing them to various management concepts crucial to effective management plan implementation. Two trainings were held in February and March with members of fisher groups and government agency representatives. The remaining trainings were postponed due to COVID-19.

The management concepts were divided into three modules, as seen below in Figure 5, and had the overall goal of building the capacity of local stakeholders to increase their ability to effectively engage in IMEM governance activities and overall MPA Management.

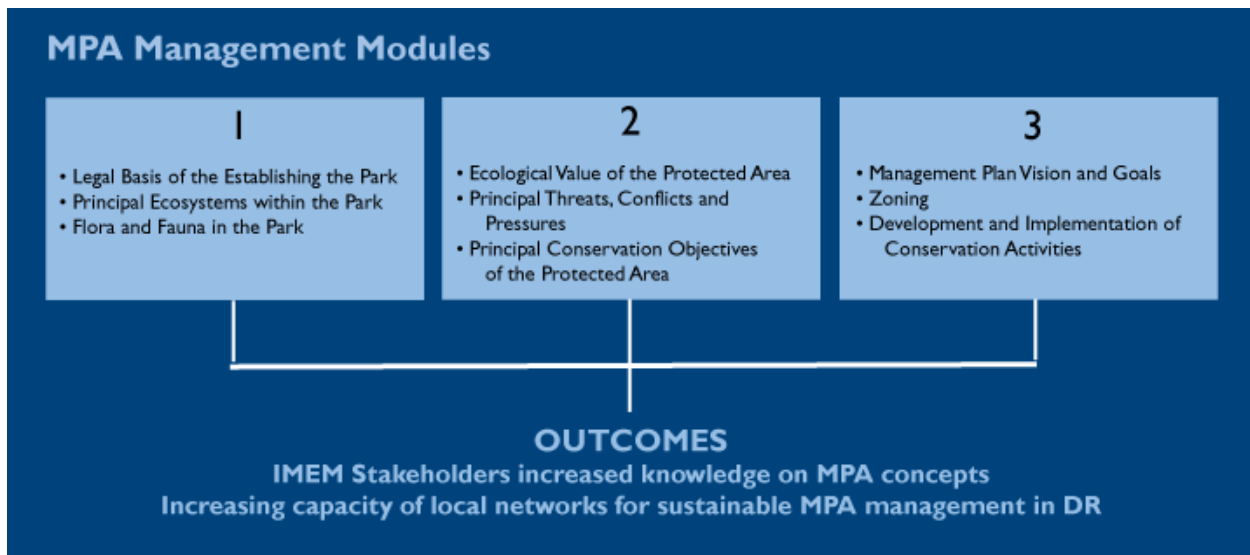


Figure 5 MPA management modules.

In the DR, AgroFrontera used a version of the World Wildlife Fund and World Bank Management Effectiveness Tracking Tool (METT), which assesses the effectiveness of management plans for protected areas (a version of this tool was adopted by the Ministry of the Environment and Natural Resources in the DR and applied to various protected areas across the country²³). The USAID Caribbean Marine Biodiversity Project also used this measurement tool to estimate management effectiveness in the Three Bays National Park in Haiti. AgroFrontera used the METT to evaluate the management plans of the three DR MPAs targeted under IMEM – El Morro National Park, Mangroves of Estero Balsa National Park, and Cayos Siete Hermanos Wildlife Refuge.



Figure 6 Questions posed by the METT tool.

In February, AgroFrontera began to interview tour operators and government agency representatives to record their assessments of the effectiveness of the management plan implementation. Before group activities were suspended due to COVID-19, five in-depth interviews (two tour operators, three

² Management Effectiveness Tracking Tool. 2007. WWF

³ Score Card to Assess Progress in Achieving Management Effectiveness Goals for Marine Protected Areas. 2004. The World Bank

government agency representatives) had been completed and the data compiled. Not surprisingly, the METT scores for the Cayos Siete Hermanos and El Morro National Park protected areas were very low—with an average score of 24% effectiveness. Scores ranged from 11 to 28%. This low baseline score suggests that a suite of socioecological barriers must be overcome to achieve effective management of the MPAs in Montecristi. COVID-19 social distancing measures effectively prevented completion of the METT assessment.

1.3.2 Review actions proposed in existing MPA management plans

In Haiti, FoProBiM conducted an internal review of the 3Bays Management Plan, with hopes of engaging both public and private sector agencies and stakeholders in person in order to gain their insight into if and how the plan could or should be updated. Due to COVID-19, FoProBiM engaged these agencies and stakeholders remotely. After the review, the IMEM team then submitted recommended modifications to the Ministry of Environment to be integrated into updates of the current management plan. FoProBiM is still waiting for a response from the Haitian Protected Areas Agency (ANAP) but has been able to receive correspondence from ANAP on other issues and possible areas of support.

In the DR, AgroFrontera and MPAGC members reviewed actions proposed in each of the management plans for the MPAs. As Year 1 ended, draft annual operating plans and calendars of activities were written and circulated to all MPAGC members for comments and revisions. In order for AgroFrontera and Counterpart to submit an annual operating plan for each MPA, the Ministry of the Environment and Natural Resources (MoENR) must take the following steps: (1) formally recognize the creation of the MPA Governance Councils, which includes a review and approval of each MPAGC member list, and (2) officially approve the management plans. Both of these tasks were ongoing as Y1 of implementation closed out.

Objective 2: Foster local-level, cross-border collaboration and experience-sharing related to participatory governance of MPAs

Activity 2.1: Create MOU for local Transboundary Working Group

2.1.2 Identify and recruit Transboundary Working Group

Throughout Year 1, AgroFrontera and FoProBiM discussed various approaches for creating the Transboundary Working Group (TWG). The TWG will consist of local stakeholders from both the public and private sectors. The work of the TWG will be informed by and integrated into the Binational Action Plan on Sustainable Fisheries Management of the Three Bays – Montecristi Area. Stakeholders agreed that members of the three Montecristi MPAs will be members of the TWG. The formal establishing of the TWG, however, was delayed by COVID-19, which led to the closing of the DR-Haiti border. While there were no specific cross-border activities, both of IMEM's partners kept in constant communication throughout implementation, actively sharing activity updates and best practices. Keeping these two local organizations in close communication will support the creation of a strong local level cross border collaboration once partners are ready to launch objective 2 activities.

Objective 3: Disseminate and implement best practices in fishing and farming systems and ecotourism

Activity 3.1: Promote marine biodiversity conservation through responsible fishing practices and improve the fish market economy.

3.1.1 AgroFrontera / FoProBiM develop and / or adapt culturally appropriate education and outreach materials for responsible fishing practices

In Haiti, FoProBiM designed five sea turtle posters and translated them into Creole using culturally appropriate language and context. The posters raise awareness of the five key turtle species in Haiti’s waters and describe the life history, food, predators, dangers to, and nesting behavior of each.

Topics covered in the Haitian Responsible Fishing Practices Booklet	FoProBiM also developed a “Haitian Responsible Fishing Practices” booklet for local fishers and government stakeholders. This booklet targets resource managers and trainers and provides an overview of Haiti’s fisheries laws and international oceanic and fisheries laws as well as recommendations for different types of management actions to protect and sustainably use fisheries. The Booklet is currently waiting on graphics and will be submitted to USAID for review and approval in early Year 2.
Code of conduct for responsible fisheries	
The use of the precautionary principle	
The use of sustainable fishing practices	
Tools for fisheries management	
Fishing regulations	
Management plans	
Management options	

Figure 7 Topics covered in the Haitian Responsible Fishing Practices Booklet.

3.1.2 Develop education and outreach materials for responsible fishing practices and

for post-capture handling and marketing of fish and seafood

In the DR, fishing activities slowed over the course of Year 1 due to the COVID 19 health crisis. Travel restrictions reduced the number of fish and seafood merchants based in Santiago and Santo Domingo from buying fish from fishers and fish shops in Montecristi. Also, the closure of resorts throughout the country weakened demand for fresh fish.

In Haiti, FoProBiM has begun the process of developing a post-capture methodology. Currently, the IMEM team is using all available informational materials to design a poster that will showcase evidence to support sustainable post-capture methods. The poster will be provided to fisher communities and institutions that regulate fishing and protected areas management in Haiti, such as the Department of Fisheries at the Ministry of Agriculture, the local Ministry of Agricultural Representatives, all local fishing associations, local schools, and local fish merchants.

3.1.5 Work with fisher associations and local authorities to record fishing trip data

Collecting and analyzing landing data is important to understanding how a fishery is functioning. The data collected includes how many fishers are in the water for a given period, what was captured, where the fishing trip took place, and what expenses were associated with the fishing trip. One of the challenges in collecting this data in the DR, is that the current CODOPESCA worksheet that fishers must complete is complicated and time-consuming.

To address this, CODOPESCA and AgroFrontera collaborated with fisher leaders to modify the fishing trip data worksheet and validate it with local stakeholders. The worksheet was simplified, but still records key information to help fisher associations, policy makers and researchers use the data to better understand fishing systems and fisheries management dynamics. This worksheet has been shared with FoProBiM and will be evaluated and modified for possible use in Haiti in Year 2.

3.1.6 Work with marine biologists, fishers, authorities, and other local stakeholders to implement a marine ecosystem monitoring program

Local fisher stakeholders in the DR engaged IMEM leaders and government authorities (CODOPESCA and the Ministry of the Environment and Natural Resources) to design a program to monitor fishing activity in the MPAs of Montecristi.

The government agencies agreed to create a database that tracks all reported incidences of illegal activity within the protected areas. This information will be made available to inform monitoring activities and management actions in the MPAs.

As a result of this collaboration, the MPA Monitoring and Enforcement Plan was launched with technical support from IMEM that included general planning support, a training on surveillance activities for the government agencies, and the creation of tools authorities can use to document relevant information for each patrol.

Monitoring and incident report worksheets were also developed by IMEM to include the date and length of the fishing trip, places visited, and details of observations and any follow-up actions required. Copies of reports are filed by each relevant government agency and archived by AgroFrontera on behalf of the MPAGC. From April to June, authorities conducted 16 patrols of Cayos Siete Hermanos Wildlife Refuge, El Morro National Park, and the Mangroves of Estero Balsa National Park MPAs. Figure 8 visualizes the data collected by authorities, a snapshot of the high level of illegal fishing happening in MPAs of Montecristi.

AgroFrontera and FoProBiM have had conversations about the socioecological undercurrents of the new monitoring protocols and tools. After some discussion, they have agreed to revise the worksheet to make it accessible for use by authorities in both the DR and Haiti to establish consistency in collection protocols on both sides of the border. This information is to be used to inform management decisions regarding fishing rules and regulations. The form is simple enough to collect basic information by surveyors who are new to data collection efforts, but it can also be easily expanded upon by more seasoned surveyors to collect more detailed information. This flexibility to expand the form responds to the disparity between the collection capabilities on either side of the border. In Haiti, data collectors are still being trained whereas the DR already has trained data collectors.

All information collected on patrols will be shared with FoProBiM personnel, who will, in turn, contact these fishers in their hometowns to gather more information about the specific fishing trip(s) in which the incident(s) occurred and to warn the fisher(s) about the consequences of embarking on fishing trips into Dominican waters without permission or required documents. FoProBiM and AgroFrontera also agreed that there is a need for specialized training of maritime authorities to assure the safety and effectiveness of the monitoring and enforcement program.



Figure 9 Locations where the use of illegal fine-mesh dragnets was reported and confirmed in the Marine Protected Areas of Montecristi – May through September 2020.

From its launch in May, the Monitoring and Enforcement Plan has led to the recording of 68 illegal fishing incidences, with a total of 76 boats with 400 fishers (378 Haitians and 22 Dominicans) on board cited for violating the MPA laws and regulations across the three MPAs in Montecristi. Of the 68 total incidences reported, 33 involved the illegal use of fine-mesh dragnets (As seen in Figure 10) and 26 involved the use of rabo fishing gear (As seen in Figure 11).

FoProBiM and AgroFrontera believe that this data will be key for continued discussions around establishing a collaborative transboundary effort between Haitian and Dominican fishers and government officials to devise strategies to encourage the adoption of more responsible fishing practices in both countries.

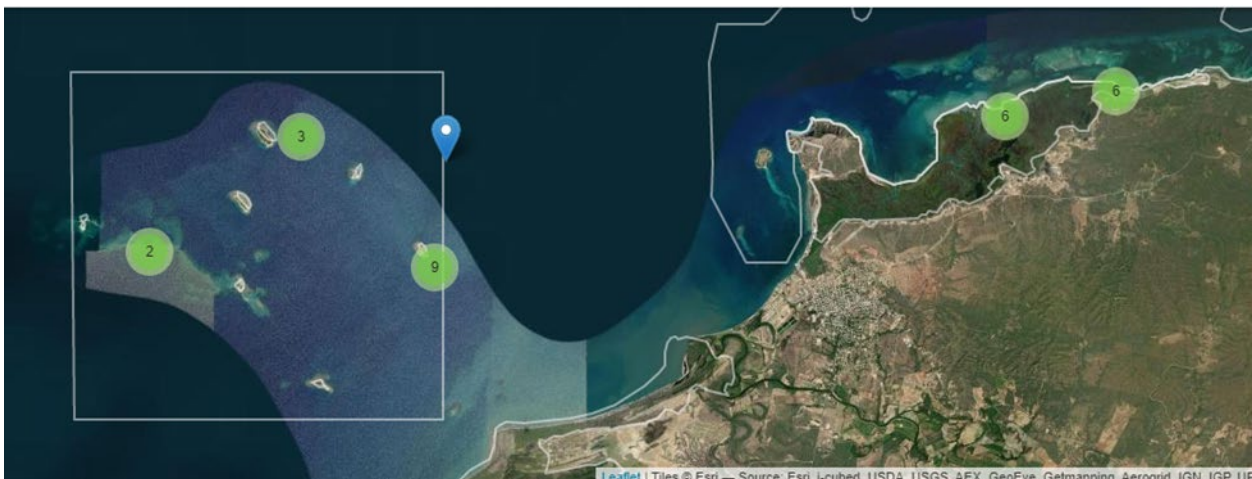


Figure 10 Locations reported and confirmed where rabo fishing gear was being used by unauthorized Haitian fishers in the Marine Protected Areas of Montecristi.

3.1.7 Work with authorities, fishers, and other local stakeholders to disseminate fishing rules and regulations.

In the DR, AgroFrontera worked with authorities CODOPESCA and the Ministry of the Environment to communicate to the public in Montecristi the seasonal bans, or *vedas*, on capture and consumption of conch, crabs, and lobsters. In addition, in meetings with fishers and fisher groups, AgroFrontera discouraged the capture and consumption of parrotfish. The public awareness efforts to respect the *vedas* included reaching out to fisher associations, local restaurants, and supermarkets. The bans were also discussed during education and outreach sessions in public schools.

AgroFrontera established an agreement with the local Armed Forces command center to launch an outreach program to encourage fishers to renew their fishing boat registrations in Montecristi. Project personnel and representatives of the Armed Forces facilitated the registration of over 300 fishing boats in the communities of Montecristi and Manzanillo, after the government had issued warnings to fishers that unregistered boats would not be allowed to leave port. AgroFrontera worked with the fisher associations to contact the owners and crew of unregistered boats and assist them in filling out the forms to renew registrations. As the registration forms poured into the Armed Forces Command Center in Manzanillo, officials extended the registration deadline to accommodate the surge in requests. By facilitating access to fishing licenses, IMEM is promoting a sense of compliance within the fisheries of Montecristi.

Activity 3.2 Promote adoption of sustainable rice farming practices in the DR

IMEM's efforts to promote the adoption of sustainable rice farming practices in the D produced significant results among a small group of 115 farmers who utilized sustainable rice production practices in the buffer zone of the Mangroves of Estero Balsa National Park. For the winter growing season (December 2019 through April 2020), analysis of data collected revealed the impacts of the practices for the Sustainable Rice Farming.

Table 1 Conventional vs. Sustainable Rice Production and profitability – Winter Season 2019-2020

Variable	Conventional Rice	Sustainable Rice
Cost of Production (US\$/ha)	\$1,794	\$1,756
Yield (MT/ha)	8.93	9.60
Price (US\$/kg)	\$314.02	\$321.50
Net Benefits (US\$/ha)	\$1,010	\$1,330

The farmer's average cost of production was lower for the sustainable rice farmers and sustainable rice yields were slightly higher than conventional rice. Due to its superior grain quality (Table 2), the mills paid a modest premium for the sustainable rice compared to conventional rice. As a result, the average net benefit for sustainable farmers was US\$1,330 per hectare as compared to an average of US\$1,010

per hectare for conventional farmers, **which translates to 24% increase in profitability for a sustainable rice farmer.**

Table 2 Grain Quality in Sustainable vs. Conventional Rice – Winter Season 2019-2020.

	Moisture Content	Impurities	Whole Grain	Broken Grains
Sustainable	22.6%	11.8%	58.1%	11.3%
Conventional	25.3%	15.8	53.6%	13.5%

Grains are considered to be of higher quality if they have less % impurities, higher percentage whole grain, and lower percentage of broken grains. As is evident from **Table 2**, all these qualities are higher in the rice produced using the sustainable rice production system.

The sustainable practices also reduced pollution of waterways. Conventional rice growers in the project area applied a total average of 209 kg of Nitrogen per hectare (kg N/ha) over an average of five applications per grower per season. Sustainable rice farmers, however, applied an average total of 155 kg N/ha over an average of four applications per grower per season, **resulting in a 26% reduction in applied nitrogen compared to conventional rice producers.**

Table 3 Nitrogen concentrations of water entering and exiting conventionally and sustainably managed rice paddies – Las Matas de Santa Cruz 2020.

Sample Location	NO ₃ ⁻ (mg/L)	NO ₂ ⁻²⁻ (mg/L)	NH ₃ (mg/L)	NH ₄ ⁺ (mg/L)
Conventional Rice Paddy – Entrance	0.34	0.006	0.093	0.650
Conventional Rice Paddy – Exit	0.44	0.005	0.078	0.761
Sustainable Rice Paddy – Entrance	0.33	0.020	0.098	0.825
Sustainable Rice Paddy – Exit	0.27	0.015	0.074	0.655

Improved nitrogen management results in less nitrogen lost to the environment. Less nitrogen in the environment reduces eutrophication of waterways, reduces emissions of greenhouse gases (GHG) from rice fields, and poses less of a threat to the environment. The amount of grain produced per nitrogen fertilizer applied in the conventional system was 42.7 kg grain/1 kg N fertilizer, **compared to 61.7 kg grain/1 kg N fertilizer applied in the sustainable system.**

Under the sustainable set of practices, farmers also improved seed management. The practices instruct farmers to plant registered seed stocks and reduce seeding rates. It is a common practice in conventional rice production to plant low cost seeds that are not certified or registered and sown at high density. Registered seeds are true to type and have higher germination rates than non-registered

seeds. In addition, planting at lower densities provides more space for seedlings to produce tillers which leads to stronger, more vigorous plants that are more resistant to lodging. Sustainable farmers save money by purchasing less seed per hectare.

After the winter growing season, sustainable farmers reduced planting densities by more than 20% compared to conventional rice planting densities. In the trials, seeds sourced for the sustainable rice fields had higher percent germination and purity than conventional seeds. Both AgroFrontera agronomists and key farmer leaders believe that seeding rates in the sustainable system can be lowered even more. IMEM will work on convincing farmers to reduce seeding rates by an additional 10-15% over Year 2.

Farmer use of pesticides in rice is high and reducing the amount of toxic pesticides is a priority of the IMEM sustainable rice program. During the winter growing season, rice grown in the sustainable system received, on average, three fewer applications of pesticides than conventionally cultivated rice. In addition, sustainable rice farmers did not apply highly toxic organophosphates (e.g. dimethoate), organotin (e.g. fentin hydroxide), phosphonic amino acid (e.g. glyphosate) and phenoxy (2,4 D), that are commonly applied to conventional rice fields.

Agricultural scientists and extension personnel will continue to work with farmers to introduce and disseminate practices that reduce farmer reliance on synthetic pesticides. AgroFrontera and the Ministry of Agriculture have begun discussions with rice farmer groups about developing and evaluating biological control products combined with innovative cultural practices that will serve as effective alternatives to chemical control of important pests.

Finally, employing the alternative wetting, and drying (AWD) method for irrigation management reduced the frequency of irrigation events in the sustainable vs. conventional systems. To quantify the impact of AWD, the volume of irrigation will be measured using a flow meter in Year 2.

3.2.1 Recruit rice farmers

The IMEM team identified and recruited a rice growers association, ArroEcoZ, with 87 farmers to participate in the project's sustainable rice program. Shortly after collaborating with ArroEcoZ, IMEM successfully recruited another 15 more farmers into the program, for a total of 102 farmers (450 hectares). The recruitment of rice farmers to ArroEcoZ will continue to be a priority of the project.

3.2.2 AgroFrontera introduces Sustainable Rice Platform (SRP) program to participating rice farmers

In 2019, the Sustainable Rice Platform (SRP) published the latest version of their Standard on Sustainable Rice Cultivation. The SRP Standard measures and scores a farmer's compliance with a series of rice production practices that improve socioecological aspects of rice farming systems. AgroFrontera introduced ArroEcoZ farmers to these standards through the weekly farm visits and two workshops (see also 3.2.5).

3.2.3 Develop SRP production practices training manual

The revised SRP individual farmer and farmer-group level best agricultural practices are being incorporated into a training manual AgroFrontera is developing for local rice farmers. The manual will be a resource to rice farmers in supporting them in the adoption of more sustainable rice farming practices. Development of the manual continued through the end of the year and will be completed in Year 2 of the program.

3.2.4 Conduct training programs in sustainable rice production for farmers

In addition to weekly farm visits (3.2.5), AgroFrontera agronomists conducted two field school workshops with rice farmers in Year 1. The topics of the field schools were pre-planting practices and an overview of important diseases in rice fields in the northwest DR. The workshops involved 30 participants (4 women) and 35 participants (3 women), respectively.

3.2.5 Conduct weekly field visits to farmers' fields to monitor crops and provide technical assistance on integrated crop management

The IMEM agronomists worked with collaborating farmers to plan and implement field activities to grow the rice crop using the SRP practices. These weekly field visits included conducting soil sampling and reviewing SRP practices for land preparation and planting. The agronomists also began working with farmers to scout rice fields for weeds, insect pests and disease.

3.2.6 Based on weekly field visits, AgroFrontera collects farm-level production data for SRP compliance and GHG emissions calculations

In 2019, the SRP also published the Performance Indicators for Sustainable Rice Cultivation, for the purpose of improving the monitoring of the socioecological impacts of individual rice farming systems practices. During the first quarter of IMEM, AgroFrontera created a system to collect the data and quantify the performance of the SRP suite of practices at the individual farmer, farmer group, and community level. This data collection protocol is an essential component of the record keeping requirements for future audits for the SRP Certification. In addition, the SRP performance indicators quantify socioecological impacts of the sustainable rice production system versus the conventional rice farming system.

During Q3, the AgroFrontera program calculated the Greenhouse Gas Emissions (GHG) in sustainable vs. conventional rice production systems for the winter growing season. According to the data collected, GHG emissions were lower in sustainable versus conventional rice fields. Under the sustainable system, carbon emissions were estimated to be 18,400 kg CO₂ equivalents per hectare vs. 34,540 kg CO₂ equivalents per hectare (or 47% in conventional rice systems).

3.2.7 Based on data collected and collated in 3.2.5 and 3.2.6 AgroFrontera calculates carbon sequestration value of sustainable vs. conventional rice (COOL Farm Tool)

AgroFrontera became a member of the [Cool Farm Alliance \(CFA\)](#), which allows IMEM to employ the Cool Farm Tool model to estimate greenhouse gas emissions and carbon sequestration in our rice farming systems. Using this tool, we can enter the data collected from IMEM field technicians and we will be able to accurately measure and monitor the greenhouse gas emissions from conventional vs. sustainable rice farming.

Activity 3.3: Promote Best Practices in sustainable rice farming in Haiti.

3.3.1 Work with AVANSE program and collaborating farmers to review sustainable rice production practices in NE Haiti introduced through AVANSE

IMEM brought key stakeholders together to foster collaboration on sustainable rice production in northeast Haiti, specifically AVANSE and CLES. The executive director of CLES and leaders of IMEM

agreed that there was much to be gained from formalizing collaboration between CLES and IMEM. Indeed, virtually all the production inputs used in rice production in northeast Haiti are supplied by seed and agricultural chemical dealers located in Montecristi province. Many of the same barriers to sustainable rice production are shared between growers on either side of the border, including access to credit, overuse of agricultural chemicals, lack of technical assistance and more frequent and prolonged droughts. CLES and IMEM leaders agreed to cooperate to promote sustainable rice production in both countries, which will include exchanges of agronomists and farmers as well as developing a common protocol to characterize the socioecological impacts of rice production in the region.

Activity 3.4 Assist fisher groups to increase participation in local markets

As Q3 came to close, a group of young entrepreneurs approached the Fisher Association of Caño el Yuti and proposed to work with them to bring high quality, responsibly caught, fresh fish to local markets. The young entrepreneurs and the leaders of Caño el Yuti reached out to AgroFrontera to support this new venture.

During Q4, AgroFrontera, started working with the association and entrepreneurs to begin a marketing program to increase the sale of fresh fish to local hotels and restaurants. As the program begins Year 2, AgroFrontera will assist them in creating a business plan and provide trainings in post-capture technology, food safety, and customer service, among others required to launch a successful business.

3.3.4 Create an inventory of community-based enterprises that are potentially economically viable and directly contribute to or foster coastal and marine biodiversity

During Q3, in the DR, the fishers in Manzanillo who are stewards of the kayak tours initiative agreed to partner with the ecotourism project headed by the Ministry of the Environment and Natural Resources. This partnership promises to create more opportunities for the youth in the kayak ecotourism group to service a broader range of clientele and spread the word about the importance of conserving mangroves. Ecotourism activities will resume early in Year 2 after COVID-19 pandemic restrictions are lifted.

In Haiti, the IMEM team worked with local community leaders in the nine target communities to create an Inventory of Community-Based Enterprises. The inventory currently includes 21 enterprises that have potential to contribute to community based alternative livelihood activities. In Year 2, IMEM will develop a strategy to engage these enterprises in supporting/developing alternative livelihood opportunities in Haiti.

Objective 4: COVID-19 Relief Programming and Activities: Sept. 2020 - Sept. 2021

In September 2020, Counterpart received a modification to our Cooperative Agreement to extend its scope of work to include COVID-19 relief activities in the DR and Haiti. These activities will seek to support the recovery among marginalized and vulnerable populations, and increase the preparedness, mitigation, and response at the community level in addressing COVID-19.

To implement these activities, IMEM is leveraging and mobilizing our existing local networks on both sides of the border to carry out activities related to COVID-19 prevention as described in detail below.

Activity 4.1: Prepare educational materials related to COVID-19 causes, prevention, and mitigation

In Haiti, the design of the first poster and pamphlet on COVID-19 education, prevention, and mitigation have been completed and are awaiting final USAID approval to go to print. Two artists were commissioned for their work on designing the original artwork for the materials.

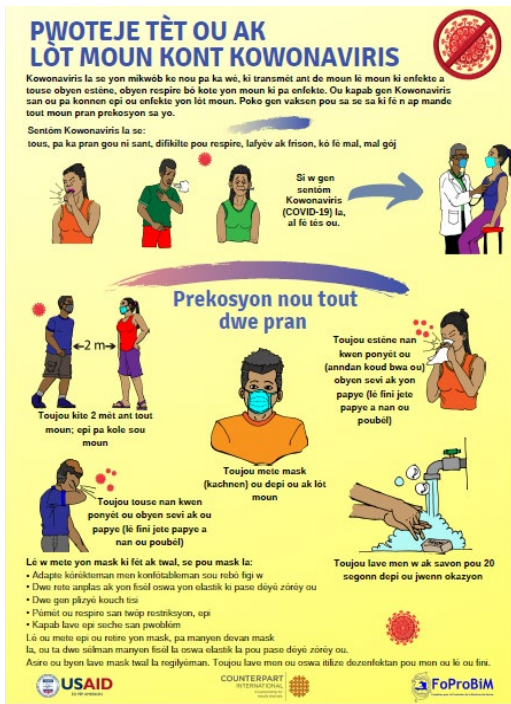


Figure 11 COVID-19 Poster in Creole “How to Protect yourself from the Coronavirus”

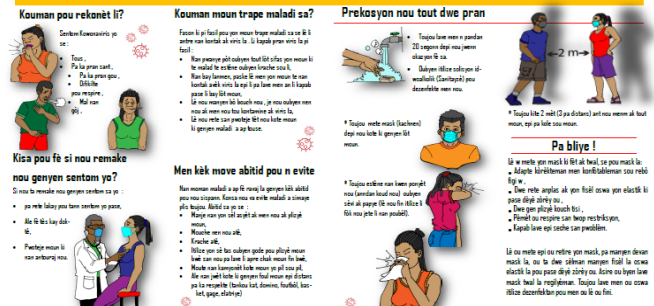


Figure 12 COVID-19 Pamphlet in Creole “How to Protect yourself from the Coronavirus”

The first poster, Figure 12, and pamphlet, Figure 13 provides a brief explanation of what the Coronavirus is, how it can be transmitted, what the symptoms are, what you should do if you experience them, and what can be done to minimize its spread (e.g. mask wearing). These resources currently do not exist in IMEM communities in NE Haiti and will a strong first step towards ensuring the dissemination of accurate and important information on COVID-19.

Activity 4.3: Support the logistics and coordination with rice farmers and constituents to deliver food staples in support to vulnerable communities in DR

In the DR, the emergency food assistance is benefitting 700 low-income households in the communities of Las Matas de Santa Cruz, Santa Cruz, Loma de Castañuelas, Los Conucos, Nueva Judea, La Recta de

Sanita, Mangrunito, Manzanillo y San Fernando de Montecristi. AgroFrontera is currently working with 21 community-based organizations in the distribution of the food aid. The community-based organizations working with AgroFrontera include those listed in Table 4 below:

Table 4 Types and Names of Community Organizations supporting COVID-19 Food Emergency Food Distribution

Types of Associations/organizations	Organizations names
Fisher organizations (6)	San Fernando de Montecristi; Cooperativa de Pescadores Bienvenido Espinal; Los Conucos; Manzanillo; Caño el Yuti; Cangrejeros de Montecristi.
Agricultural Organizations (2)	ArroEcoZ and the Dairy Association of Los Conucos.
Community-based Civic organizations (7)	Junta de Vecinos of La Recta de Sanita; Nueva Judea; Las Matas de Santa Cruz; Los Conucos; Bella Vista, Pedro Alberto Jimenez and Comité Pro Desarrollo Santa Cruz.
Education Organizations (6)	School Parent Organizations of La Recta de Sanita; Nueva Judea; Santa Cruz; Los Conucos; Loma de Castañuelas; Las Matas de Santa Cruz.

AgroFrontera and the collaborating community organizations are distributing the rations weekly. A head of household of each beneficiary family receives and signs for the weekly rations. We encourage women heads of household to be present to receive and sign for the food rations. Each beneficiary family is receiving the following monthly rations of food stuffs:

Table 5 Amount of monthly food rations committed for each family.

Food Stuffs	Quantity	Unit
Rice	60	lb
Seasoning	0.50	kg
Tomato paste	0.57	kg
Vegetable oil	0.50	gal
Spaghetti	8.00	package (400 g)
Sardines	8.00	can (125 g)

As of September 30, 2020, each family has received three weekly rations. The total amount of food distributed to each beneficiary family is presented in Table 4.

Table 6 The amount of food stuffs provided to each family as of 30 September 2020.

Food Stuffs	Quantity per family	Unit	Total Quantity
Rice	45	lb	31,500
Seasoning	0.38	kg	266
Tomato paste	0.43	kg	301
Vegetable oil	0.38	gal	266
Spaghetti	6	package (400 g)	4,200
Sardines	6	can (125 g)	4,200

To identify the beneficiary families for the COVID 19 emergency assistance program, AgroFrontera met with many community leaders who live and work in the targeted communities. During conversations and field visits with these key stakeholders, IMEM had the opportunity to introduce them to the work of IMEM and to learn more about their organizations and communities. These exchanges were instructive and broadened AgroFrontera’s engagement in these communities.

One of the facets of the emergency food assistance program was the opportunity to purchase locally produced rice to be distributed to the beneficiary families. To this end, AgroFrontera worked with ArroEcoZ (the local sustainable rice association) and Font Gamundi (the buyer and processor of the ArroEcoZ rice) to procure and distribute this bagged rice for the beneficiary families. ArroEcoZ is one of the local community-based organizations helping to promote the ecological importance of cultivating sustainable rice in the region. Furthermore, the interaction of the rice farmers and AgroFrontera with community leaders in the project area have deepened the cooperation of sustainable farmers and the members of the rural communities that are embedded in the rice growing region.

Challenges and Lessons Learned

Challenges

Governance challenges in Haiti: There have been considerable difficulties in engaging various government agencies in Haiti on the management of natural resources. With COVID-19, their resources and time have been largely monopolized in managing the crisis, and MPA management was perceived as a non-priority. In order to continue activities in Haiti, FoProBiM has shifted to focusing on working with private sector stakeholders on the Governance Council while the public sector works to resolve their issues. At the same time, they have kept the door open to public sector partners and have made it clear that support can be provided to them when they are ready for it.

COVID-19: All activities requiring person to person contact and meetings of over 10 people were stopped in mid-March, and these social distancing measures and policies were maintained through the remainder of the year. The restrictions caused delays in activity implementation over the months of March and April. Everything that could be implemented online was adapted to be held on Zoom or Google Meet interfaces. However, remote implementation remains a challenge in Haiti, as most stakeholders lack computers and electricity is inconsistent throughout the Northeast. In Year 1, Counterpart provided a training on Data Collection tools for local partners FoProBiM and AgroFrontera to provide them with options and resources to efficiently collect data offline. In Year 2, these data collection tools will be key in ensuring smooth implementation of activities while ensuring the safety of all involved.

Lack of experience of Rice Farmer Association ArroEcoz: ArroEcoz has become a key stakeholder in IMEM's sustainable rice value chain as it represents and has committed all of its rice farmers to implementing sustainable rice practices. However, throughout the implementation of IMEM, AgroFrontera has faced challenges with ArroEcoz's ability to manage the business processes of its association and a lack of interest in developing that capacity. This experience has required AgroFrontera to rethink its strategy, and perhaps recruit more rice associations in the area into IMEM's sustainable rice production to mitigate against the risk of solely working with one rice farmer association.

Lessons Learned

Local Interest in MPA and Ecosystem Management is High: Across both countries there has been an outpouring of interest and engagement of local level community leaders across various sectors in learning about IMEM and MPA management. Stakeholders have been actively engaged in program activities from the very beginning, and there have been requests in both Haiti and the DR to the IMEM team to provide greater support or niched training exercises. This high level of support positively reflects on IMEM's overall program framework- that MPA management should be brought to the local level to be discussed and supported by fishers, farmers, and community leaders. This will prove an important concept as IMEM begins implementation in Year 2, that will look to begin transboundary activities between the two countries.

Proven Interest and Financial Incentives in the Sustainable Rice Value Chain: As IMEM continues to carve out the sustainable rice value chain, there has been considerable interest from private financial institutions to become more involved. The data from field technicians shows that it can be economically beneficial to farmers, and with interested partners from the private sector, the team is getting closer to ensuring a sustainable value chain and market for sustainably produced rice.