PLANNING FOR CLIMATE ADAPTATION PROGRAM

FINAL REPORT

Prepared for the
U.S. Agency for International Development
/Dominican Republic
Cooperative Agreement Award No. AID-517-A-15-00003

By the
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This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID) cooperative agreement number AID-517-A-15-00003. The contents are the responsibility of ICMA and do not necessarily reflect the views of USAID or the United States Government.

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LIST OF ACRONYMS

ADN	National District City Hall
ADECUCI	Association for the Development of the United Communities of Cienfuegos
ATIDE	Technological Association for Enterprise Research and Development
CAASD	Santo Domingo's Aqueducts and Sewage Corporation
CCA	Climate Change Adaptation
CEUR	PUCMM Urban and Regional Studies Center
CIDEL	Center for Local Integrated Development
CNCCMDL	National Council on Climate Change and Clean Development Mechanism
CODIA	Dominican School of Engineers, Architects and Surveyors
CONEP	National Council of Private Enterprise
CORAASAN	Water and Wastewater Corporation of Santiago
DGODT	General Directorate of Land Use Planning and Development
EU	European Union
FEDOMU	Federation of Dominican Municipalities
GIS	Geographic Information System
ICMA	International City/County Management Association
I2UD	International Institute for Urban Development
INAPA	National Institute of Potable Water and Sewage Systems
INDRHI	National Institute for Water Resources
INTEC	Technological Institute of Santo Domingo
MEPYD	Ministry of Economy, Planning and Development
MIMARENA	Ministry of Environment and Natural Resources
MINPRE	Ministry of the Presidency
MSPAS	Ministry of Health
MITUR	Ministry of Tourism
MOPC	Ministry of Public Works and Communications
NOAH	Neighbourgood of Affordable Housing
ONE	National Statistics Office
PC	Citizen Participation (local chapter of Transparency International)
PMOT	Municipal Land Use Plan
PMP	Performance Monitoring Plan
PUCMM	Pontific Catholic University Matter et Magister
REDDOM	Dominican Foundation for Rural Economic Development
SPM	San Pedro de Macorís
UNIBE	Iberoamerican University
URBE	Office for the Rehabilitation of La Barquita and Surroundings
UZP	Zonal Planning Unit

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1 EXECUTIVE SUMMARY

2 EXECUTIVE SUMMARY

The USAID/ICMA Planning for Climate Adaptation Program was aimed at improving the resilience of people living in cities of the Dominican Republic to the adverse impacts of climate change by working with municipalities to mainstream climate change adaptation (CCA) into their participatory land use planning processes. To achieve this objective, the program established through its results framework three activity components: 1) Improve technical and management capacity of municipal planners, 2) Incorporate CCA considerations into the municipal planning process, and 3) Support the scale-up of climate resilient land use planning best practices. The program was implemented by the International City/County Management Association (ICMA), with the collaboration of three key partners - the Federation of Dominican Municipalities (FEDOMU) as the local implementing arm, the Technological Institute of Santo Domingo (INTEC) as the developer and administrator of most of the training activities and ICF as the experts in adaptation planning.

The Planning for Climate Adaptation Program used as the foundation of its implementing approach the Guia Metodológica para la Formulación de Planes Municipales de Ordenamiento Territorial (Land Use Planning Guide), or PMOT Guide, for municipalities. The PMOT Guide is an iterative seven-stage process to develop comprehensive municipal land use plans integrating principles of CCA and participatory planning. The program implemented the PMOT process in the National District (capital of the Dominican Republic) and three municipalities: Santiago, Las Terrenas and San Pedro de Macorís.

By the end of the Program, all four jurisdictions had climate-adapted land use plans and climate adaptation plans and three had drafted land use planning ordinances. Except for Santiago, which had developed a land-use plan of the city center, these were the first municipal land use plans in the Dominican Republic. These plans are innovative as well because they were developed with citizen participation and integrate climate adaptation. In the case of San Pedro de Macorís, the PMOT is integrated with the city's municipal development plan, another first in the Dominican Republic. Furthermore, Program technical staff guided the drafting of ordinances in San Pedro de Macorís, Las Terrenas and Santiago. Once passed, these ordinances will make implementation of the land use plans legally binding for municipalities. Alongside the development of the plans, Program staff and partners helped design new tools to guide other municipalities in drafting their own climate resilient, participatory land use plans. The tools include the PMOT guide itself, an information tracking tool for the territorial diagnostic and a Resource Guide to Integrating Climate Change Considerations into the Planning Process.

Improvements in capacity were recorded in all four municipalities using a municipal capacity evaluation instrument, adapted from USAID's "Global Climate Change Capacity Assessment Tool" published in 2016. These improvements were observed in the areas of governance, professional capacity, access and use of data, and capacity for participatory planning. ICMA exceeded its training target by 67%. A total of seven hundred and fifty (750) people from national and local government, FEDOMU, civil society, the private sector and academia were trained in land use planning, climate change adaptation, participatory municipal management, gender and climate change, inclusion of vulnerable groups, and other topics through certificate courses and training workshops facilitated with program support.

As part of the capacity building process, the CityLinks™ program established knowledge exchange partnerships between the four Dominican jurisdictions and four US cities. Key informant interviews with municipal officials confirm that the CityLinks™ exchanges have had a positive impact, providing new ideas in approaching climate-adapted planning, citizen engagement, resilient infrastructure and transportation planning, among other areas. The CityLinks™ exchanges also reinforced the objectives of the Program in each jurisdiction and the technical guidance provided by Program staff and partners.

ICMA also awarded five small grants ($10,000-$15,000 USD each) to community-based institutions and NGOs to raise awareness on climate change adaptation issues and promote improved participatory planning processes. Through these grants a total of 117 community leaders (44 women and 73 men) received information and provided input into improving their communities' resiliency.

The Program faced many challenges throughout its life, but two deserve mention for their impact on program results. First, elections were held about 14 months after start-up. Three out of the four municipalities experienced a change in leadership. With the change many staff with whom the Program had been working were dismissed. Furthermore, in some cases new staff was not incorporated until six to eight months after the elections. This meant a slow-down in progress towards Program objectives but also additional effort to build capacity of new staff and regain political will. Second, the Program was originally awarded as a four-year program that would develop climate resilient land use plans for 8 jurisdictions, the four additional jurisdictions receiving most of their support from FEDOMU with guidance from the original 4 jurisdictions. However, due to cuts in USAID funding, the Program closed out a year early and the replication of the methodology in an additional 4 jurisdictions did not take place. Still the Program approach of focusing in process and capacity development proved successful in that FEDOMU was capable of replicating the process in the municipality of Neyba and work has started in two more -La Cienaga and Jimaní- with support from the Spanish Cooperation Agency.

At inception, the program did not include within its scope and strategic objectives the creation of ordinances as an outcome. That notwithstanding, program support through technical team meetings and dialogue with political leadership played a significant role in generating increased interest on the part of the municipalities of San Pedro de Macorís, Las Terrenas and Santiago to formally present land use ordinances (Stage 7 of the PMOT). These ordinances represent a critical impact arising from program support as the ordinances once approved by the municipal councils will make implementation of the land use plans legally binding. It follows that through the influence of program support, climate change adaptation will be integrated with land use planning in these cities. Additionally, these ordinances can serve as reference points in building the case for new ordinances requiring climate-resilient land use planning to be established in other cities in the Dominican Republic.

2 PROGRAM BACKGROUND AND IMPLEMENTATION APPROACH

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2.1 INTRODUCTION

In the Global Climate Risk Index of 2015[1], the Dominican Republic was ranked eighth among countries most affected by climate impacts between 1994 and 2013 using annual averages. The Global Facility for Disaster Risk Reduction (GFDRR) has identified rapid and unplanned urbanization in the Dominican Republic as a key driver of its vulnerability to climate change and predicts potential damages and economic losses arising from such impacts to reach up to 17 percent of GDP.[2] There is little evidence of projects reflecting governance and design principles that promote urban resilience. There is a lack of knowledge, particularly at the municipal level, as to how jurisdictions can enable sustainable planning and design processes. Before the Planning for Climate Adaptation Program, only Santiago, out of 158 municipalities, had a land use plan. Not even Santiago's plan had incorporated climate adaptation or reached beyond the core urban area to encompass districts which are an integral part of the municipality´s dynamic.

Recognizing an opportunity to work with local governments to raise awareness of climate change adaptation and support mainstreaming it into urban planning, USAID launched three programs under the initiative *Ciudades Líderes en Iniciativas y Metas de Adaptación*, or CLIMA. CLIMA's objective was to increase the resilience of Dominican communities to adverse impacts of climate change by 1) improving access to relevant and usable climate information through the CLIMA-INFO program, 2) developing participatory land use planning processes that integrate climate information through the Planning for Climate Adaptation Program (originally known as CLIMA-PLAN) and 3) implementing climate change adaptation measures to reduce climate related risk at the municipal and community levels through the CLIMA-ADAPT program. This final report to USAID presents results and lessons learned under the *Planning for Climate Adaptation Program*.

The Planning for Climate Adaptation Program was originally launched as a four-year program that would work with 8 municipalities to develop comprehensive land use plans integrating CCA and participatory planning techniques and tools. The program based the foundations of its implementation approach on the Municipal Land Use Planning Guide, or *Guía Metodológica para la Formulacion de Planes Municipales de Ordenamiento Territorial* (PMOT guide), which was developed by the DGODT, mainly supported by UNDP and the Program, with additional input from other organizations. The PMOT guide establishes a strategic seven-stage process for all municipalities in the Dominican Republic to develop their land use plans and mainstreams climate change into the planning process. The Federation of Dominican Municipalities (FEDOMU) was a partner from day one, involved in the day-to-day interaction with municipalities and participants in all training and technical assistance activities, with the objective of ensuring that they could carry on with the replication of the methodology throughout the DR as part of their institutional mandate. ICF, a firm known for its expertise in climate adaptation planning, worked with the Program to develop tools for the municipalities

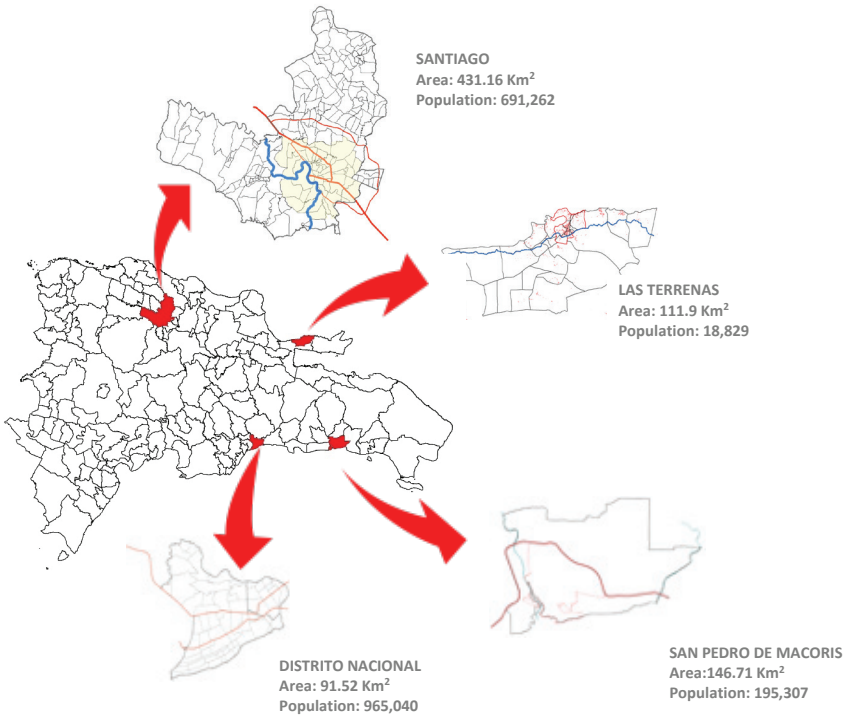
[1] Kreft S., Eckstein D., Junghans L., Kerestan C., and Hagen U. (2015). Global Climate Risk Index 2015. GermanWatch Briefing paper.

[2] https://www.gfdrr.org/en/dominican-republic

to mainstream CCA into their land use plans. The Technological Institute of Santo Domingo (INTEC), a leader in training and research in municipal planning and climate change, developed and taught customized certificate programs and workshops to build capacity of municipal staff, civil society organizations and other stakeholders. Additionally, ICMA enlisted the support of "resource partners," institutions which offered pro-bono technical assistance to promote the Program's objectives, including Atkins, an international engineering firm; I2UD (the Institute for International Urban Development), a leading NGO in urban development, and the APA (American Planning Association).

The PMOT process was initiated in the three municipalities: Santiago, Las Terrenas and San Pedro de Macorís and in the National District in May 2015. These jurisdictions had been previously selected by USAID based in their expressions of interest to participate in the Program and their unique economic and environmental profiles. The National District, the country's economic and political hub and capital city, is a coastal city surrounded by two important rivers, Ozama and Isabela. Santiago is the country´s second-largest city and a major economic node, with the Yaque del Norte river (the country´s largest) flowing through the city. Las Terrenas is a coastal town whose thriving tourism industry has ushered in rapid, unplanned development and San Pedro de Macorís is a medium size coastal city contending with preserving its prized cultural resources while promoting the expansion of its agricultural and industrial sectors. All four jurisdictions have marked exposure to climate risks, ranging from increased intensity and frequency of flooding and sea level rise to heat waves and droughts. Figure 1 provides information on the geographic scope of the project.

Figure 1: Program Geographic Scope



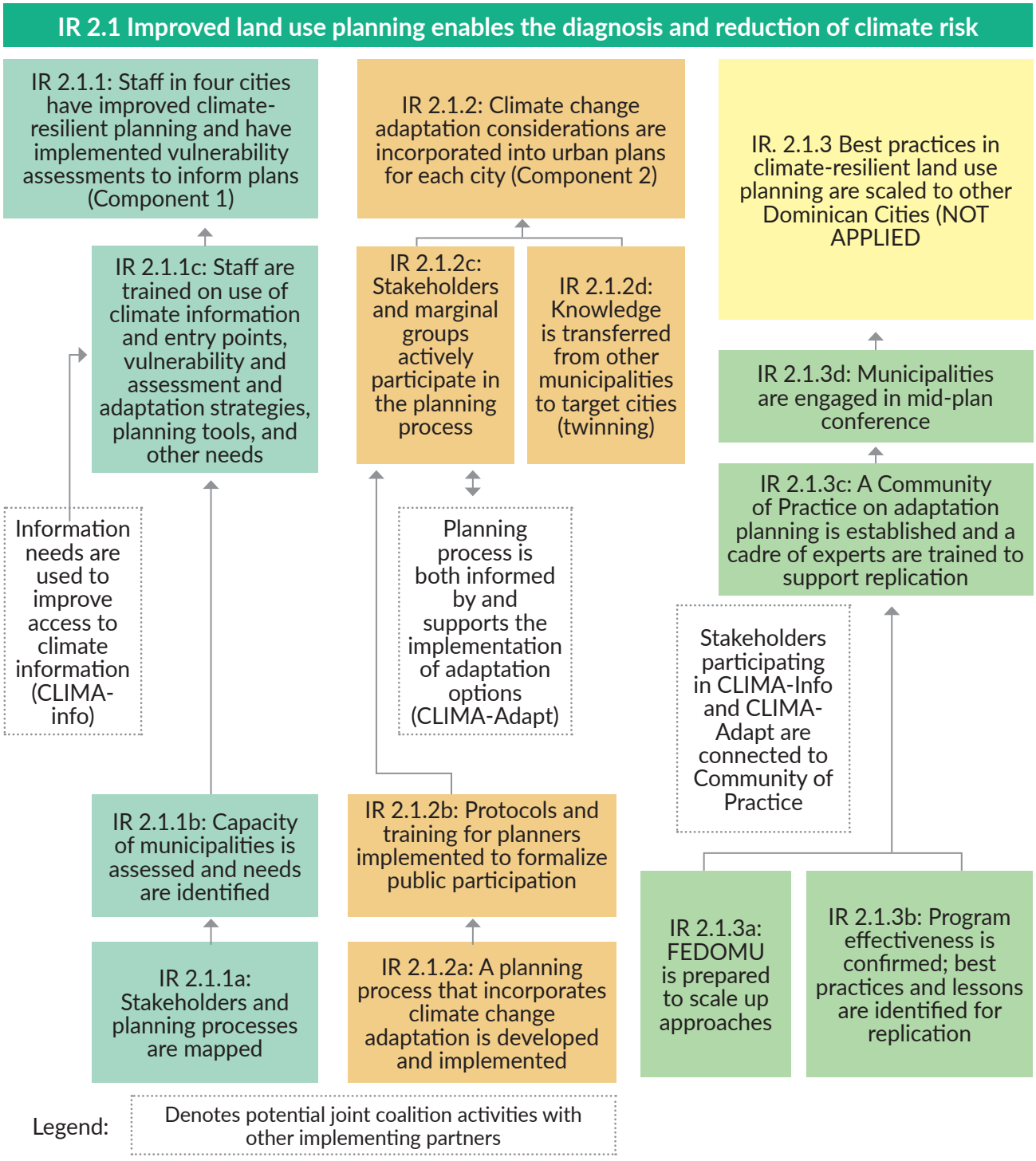


Figure 2: Results framework for the Planning for Climate Adaptation Program

This final report is structured as follows: first, it gives an overview of the Planning for Climate Adaptation Program's implementation approach, including its four key programming principles, results framework, components and monitoring & evaluation system. Second, program results are presented in detail by component. Third, challenges and lessons learned for future USAID programs are discussed and we present a summary of results. Text boxes and images are used throughout the report to highlight experiences and success stories. Annex 1 presents the final indicators table and M&E results.

2.2 IMPLEMENTATION APPROACH

The Planning for Climate Adaptation Program established at the onset four guiding principles for its implementation approach:

1) Leverage existing frameworks
The Program built upon and improved existing frameworks to mainstream CCA into land use planning. Such frameworks included USAID's Climate Resilient Development (CRD); DGODT's draft guidance on municipal land use planning to which the Program contributed input to include integration of CCA planning and citizen engagement and finalized, turning the draft guidance into the PMOT Guide; and the Guide for Development of Municipal Development Plans developed by FEDOMU, North Cibao Region Association and DGODT.

2) Establish protocols for promoting multi-stakeholder collaboration & coordination
The Program created a permanent space for interaction among different organizations, levels of government, civil society, private sector, etc. Through the creation of multi-stakeholder technical and working groups, the Program was able to tap into the expertise and knowledge of a number of key actors from the national, municipal and community levels, and engage them in all phases of the PMOT process. Program materials and guides provide municipalities with protocols to guide them with respect to types of information to be provided by different actors at different points in the process.

3) Connect a pool of expert planners, CC specialists and municipal staff
To help build capacity for implementing land use planning and climate change adaptation, the Program fostered a nurturing environment where local government staff, including planners, local institutions such as INTEC, FEDOMU and DGODT could learn from and exchange ideas with Resource Organizations like the the American Planning Association and planners from U.S. cities participating in the CityLinks Exchanges. The program also trained a large number of municipal staff and other stakeholders, fostering their continuing collaboration through a community of practice.

4) Identify clear mechanisms for coordination with the CLIMA, USFS & USAID activities
The ICMA Chief of Party led monthly meetings with other CLIMA implementers to identify opportunities for joint activities and capitalize on synergies to add value and improve outcomes with local government and civil society.

2.3 RESULTS FRAMEWORK AND PROGRAM COMPONENTS

Figure 2 shows the Planning for Climate Adaptation Program's results framework. As we have indicated, there was a reduction in program scope that eliminated the possibility of replication in a second group of Dominican municipalities. Therefore, IR2.1.3 (Best practices in climate-resilient land use planning are scaled to other Dominican cities) was severely limited, as most of the activities envisioned under this

intermediate result could not be implemented. That said, ICMA considers a proof of program success the fact that replication is being conducted by FEDOMU with funding from other donors and in collaboration with DGODT. Overall, the Planning for Climate Adaptation Program made significant contributions to the reduction of climate risks and improved resilience of Dominican municipalities through land use planning.

The program implemented three components to achieve its intermediate results, as follows:

1) Improve technical and management capacity of municipal planners

The program assessed planning processes and capacity of municipal staff to identify training needs in each jurisdiction, and subsequently customized its training and tools to include thematic areas such as climate change adaptation, participatory municipal management, gender and climate change, geographic information systems (GIS) for planners, engaging groups vulnerable to climate risks, etc. The training and capacity-building was intended to develop expertise within municipal staff and other development actors so that they could apply their knowledge, not only in the design and implementation of climate-adapted land use plans as part of the Program but also use that knowledge to inform future decisions to increase resilience.

2) Incorporate CCA considerations into the municipal planning process

The goal of this component was to guide the municipalities through a participatory planning process that would result in a municipal land use plan using the 7-stage method outlined in the PMOT. A streamlined process to integrate CCA into land use and strategic planning was developed, along with clear CCA-centered goals and outcomes linked to municipal development plans. The process that was carried out included engaging citizens in decision-making and helping communities understand the goals of climate resilient planning so that they could identify priorities for development in line with the climate-adapted municipal planning process and eventually incorporate these considerations into future municipal development plans as well. At the end of the Program, a Resource Notebook was created to guide planners and other individuals interested in incorporating CCA into each phase of the municipal planning process as outlined in the DGODT PMOT Guide. Box 1 shows an overview of the PMOT Guide 7 stage process.

The program scope only covered the first 4 stages of the process. ICMA and partners facilitated the process that resulted in climate adapted land used plans being drafted. That said, program support through technical team meetings and dialogue with political leadership resulted in land use ordinances being drafted in Santiago, San Pedro de Macoris and Las Terrenas. These correspond to Stage 7 "Formalization", thus exceeding our original scope, and constitute a major contribution by the Program to future efforts in climate resilient land use planning in the Dominican Republic.

Box 1: Overview of PMOT Implementation Process

The Program's proposed methodology was based on the methodological framework that, at the time of start-up, was being developed into a Guide by DGODT with support from the UNDP. The Guide's objective was to provides the necessary tools for municipalities to engage in participatory, inclusive and sustainable municipal land use planning in the DR. The Program Team participated in the revision and finalization of the Guide during the first six months of Program implementation, ensuring that climate vulnerability and urban resilience principles were incorporated. The revisions to the guide, led by ICMA along with the DGODT, were a significant contribution to the sustainable urban agenda in the Dominican Republic as it improved the enabling environment for climate resilient land use planning. The Guide outlines a 7-stage process, with a proposed land use plan being the result of Stage 4. The Program facilitated the completion of Stages 1 to 4 in each municipality.

- **Stage 1: Institutional arrangement**

Consisted in the establishment of the technical teams within each municipality. This team coordinated and conducted the planning process. Also included the installation of participatory mechanisms, such as the working group. Other activities in this stage included obtaining political buy-in, stakeholder mapping, and development of the process work-plan, including communication and outreach strategies. Climate change considerations in this stage included the explicit acknowledgement within the plan charter of the need for climate adaptation, and the incorporation within the working group of institutions and people working on climate issues. It also included training on both land use planning and adaptation for technical teams and working group members.

- **Stage 2: Territorial diagnostic**

During this stage, baseline information was gathered, and the analysis of the territory was conducted, considering the natural, built and socio-economic environments. The municipal context was delineated, identifying the factors outside the municipality that affect its development and sustainability. Climate vulnerability assessments were the main tool for incorporating climate change into this stage. Adaptation measures were identified by the end of this phase.

- **Stage 3: Territorial Prospective**

This is the scenario-building phase. It started with establishing or reaffirming the development vision and objectives of the municipality. Based on the results of the diagnostic and considering the vision for the municipality, land use scenarios were built to achieve the stated objectives. A consensus scenario (which reflects the compromises made on the part of all stakeholders) is the expected result of this stage. Adaptation measures were prioritized, and an adaptation portfolio began to take shape. Resilience objective informed the guidelines for the PMOT. The business as usual scenario should reflect the impacts of not including adaptation measures in development decisions. Climate adaptation measures were incorporated into the consensus scenario.

- **Stage 4: Programming**

This is the stage in which the actions needed for the implementation of the land use plan were identified and developed. These included the zoning plan for preferential uses, the policies, plans and programs that would enable appropriate land use, and the regulations that will make those measures mandatory. Identified adaptation measures and their enabling conditions were explicitly incorporated into the products of this stage

- **Stage 5: Implementation strategy**

In this stage the municipality defines how the plan is to be rolled out and enforced. Also, institutional resources needed for implementation need to be identified and tapped. Communications and outreach for implementation must also be addressed.

- **Stage 6: Monitoring and evaluation system design**

Selection of indicators and reporting requirements. DGODT will maintain oversight of all municipal plans implementation. Indicators will include CCA indicators.

- **Stage 7: Formalization**

This stage includes the validation, certification (by DGODT) and approval (by the Municipal Council) of the proposed land use plan. The Program facilitated the drafting of the ordinances that would formalize the PMOTs in Las Terrenas, San Pedro de Macoris and Santiago, although this stage was outside the program´s scope which ended in Stage 4.

3) Support the scale-up of climate resilient land use planning best practices

The objective of this component was to create pathways for scaling up program achievements. Fundamental to achieving this objective was partnering with FEDOMU and preparing them to become leaders in climate resilient land use planning in the country and guide municipalities through the PMOT process. ICMA incorporated FEDOMU from the start of the Program, identifying technical staff who would be the liaisons to the Program municipalities and who would benefit, along with other FEDOMU national and regional staff, from trainings and technical assistance. FEDOMU staff also learned by participating in all technical and working group meetings. FEDOMU has dozens of staff members who are now ready to guide other municipalities through the PMOT process. ICMA also conducted a mid-term conference and participated in several FEDOMU and DGODT events to bring awareness about the PMOT Process and encourage its replication. Information from lessons learned workshops and key informant interviews with municipalities, FEDOMU and other institutions has yielded key recommendations for scaling up. Furthermore, the Program promoted the development of a community of experts through knowledge exchanges with the American Planning Association (APA) and the launching of an online community of practice that facilitates a platform for municipal planners and other staff, climate change experts, interested individuals from civil society organizations, academia, and others to keep exchanging information on CCA issues and innovations to inform future replication of the PMOT process. Many of these individuals are likely to be involved in the replication of the PMOT Process in their own municipalities.

2.4 PROGRAM MONITORING, EVALUATION AND LEARNING METHODS

Program Monitoring

The Program developed a set of indicators that was proposed and approved by USAID. Annex 1 presents the indicators table, targets and achieved results. The program monitored a total of 10 indicators, 5 of which are standard and 5 custom ones. Means of verification included an institutional capacity assessment tool developed by the program. The methodology for this assessment was based on USAID's "GCC Capacity Assessment Tool" published in 2016. Other data sources and verification means were: briefings from technical team and working group meetings, program documents and reports, program deliverables and regular staff and partners meetings. Data sources and collection methods for sample program indicators were validated in a DQA conducted by USAID.

Data was collected regularly, and progress was assessed at least quarterly. The electoral process in 2016 was a major challenge and resulted in significant delays as three of the four municipalities experienced changes in political leadership that resulted in a long transition period where little to no work was being done. Close monitoring of internal and external parameters allowed us to adjust to these and other challenges, and by the end of the third year the Program was fully on track to complete all expected results if funding had been continued.

Evaluation and Learning Activities

From day one, the Planning for Climate Adaptation Program was envisioned as a learning opportunity: The program was tasked with mainstreaming climate change adaptation into the land-use planning process in a country with very little experience in land use planning. Of the 158 municipalities in the DR, at the time of project inception only Santiago had a partial land use plan (for the urban core of the municipality). Furthermore, although local land use planning is a municipal attribution mandated by law since 2007, the policy guidelines and methodology for developing the municipal land use plan was only a rough draft in March 2015 when the Program started. Thus, ICMA and its team of partners had to come up with a methodological approach (which became an integral part of the DGODT PMOT Guide) and put it in place in the four pilot municipalities, while at the same time introducing the new concepts of climate resilience and adaptation. The program was originally planned in two stages, giving ICMA the opportunity to capture lessons learned at the end of the first stage and use them to improve the process for the second group of municipalities and to leave FEDOMU and DGODT with a validated methodology. Funding cuts did not allow us to complete the second stage, but nonetheless the program strived to systematize lessons learned and recommendations for process improvements that are presented later in this report.

As part of our internal monitoring, evaluation and learning process, the program staff met regularly once a week, and on average once a month with our implementing partners FEDOMU, INTEC and ICF. Adaptive management was actively used to adjust program activities to changing conditions in each municipality (for example during and after the elections in 2016), and to identify the need for adjustments in our methodological approach. Quarterly reporting was an opportunity to assess program performance and take corrective actions if needed.

Towards the end of the second year of implementation ICMA, ICF and FEDOMU held internal workshops to assess how the integration of CCA to the PMOT process was advancing and to identify the best way to achieve integration beyond the diagnostic stage. Also, our midterm conference served to present progress to date and to gather feedback from stakeholders. Once we learned that project funds were being cut and the close-out date moved forward to the end of the third year, we scheduled a lessons-learned workshop, hired a consultant to conduct process systematization and prioritized activities such as the Resource Notebook, thus seeking to coalesce our learning process into a set of recommendations and tools that can be used by future initiatives.

An independent evaluation of the CLIMA activity was concluded in December 2017 by a USAID contractor. The Planning for Climate Adaptation Program was evaluated as part of the activity. The results were presented at a meeting with implementing partners at USAID/DR on March 15, 2018. Overall, results were positive: the program has contributed significantly to improving resilience of four Dominican communities through land use planning and achieved important results in terms of capacity building for replication, mainly in FEDOMU and DGODT. The impact of the early close out was significant in terms of sustainability of results because the program did not have full opportunity to facilitate the uptake by Dominican national government agencies that will be key to the implementation of adaptation measures, nor did it have a chance to introduce lessons learned in the second group of municipalities as was originally intended.

Internally, the program conducted evaluations of its main training activities, providing feedback to implementing partner INTEC on how to improve the certificate courses for the second cohort, in which there were fewer in-classroom hours and more practical applications through projects and visits. ICMA also hired a consultant to develop and apply the capacity assessment tool used to measure the program's impact on building the capacity of the four participant municipalities to improve their resilience to the effects of climate change through integrated land use and climate change adaptation planning. The tool and the results of this evaluation are extensively discussed in Annex 1.

3 PROGRAM RESULTS BY COMPONENT

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This section presents results achieved by program components. Component 1, *Improve the technical and management capacity of municipal planners* (IR 2.1.1), includes training activities through the *"Diplomados"* (certification courses) offered by INTEC, as well as workshops offered by ICF, INTEC and ICMA, and also includes the CityLinks™ exchange program between Dominican and U.S. partner cities. Activities under Component 2, *Incorporate Climate Change Adaptation Considerations into the Municipal Planning Process* (IR 2.1.2), are the core of the technical assistance provided by the Program and include the facilitation of the PMOT process as outlined by DGODT´s methodological Guide incorporating climate consideration throughout.

Deliverables from this component include the land use plans, climate adaptation plans, associated tools, and the participatory processes that helped shape both plans – as well as the awarding of small grants to local CBOs to promote awareness-raising activities, community participation and private sector participation. Activities under Component 3, *Support the Scale-Up of Climate Resilient Land Use Planning Best Practices* (IR 2.1.3), include the capacity building of FEDOMU and DGODT staff to become key facilitators for supporting the development of climate adapted and participatory land use plans; the process of reviewing program effectiveness and documenting lessons learned, and the establishment of the community of practice.

3.1 COMPONENT 1: IMPROVE THE TECHNICAL AND MANAGEMENT CAPACITY OF MUNICIPAL PLANNERS (IR 2.1.1)

Key Related Activities:	Key Related Indicators:	Achieved
1.1: Assess the Capacity and Needs of the Target Municipality	Number of institutions with improved capacity to assess or address climate change risks supported by USG assistance (11.2)	4
1.2: Improve the Capacity to Request, Analyze, and Apply Appropriate Climate and Weather Information to Decision-Making and Operational Processes (IR 2.1.1c)	Number of people trained in climate change adaptation supported by USG assistance (11.1)	766
	Number of city partnership programs fostered as supported by USG assistance	4

An essential program objective was to improve the capacity of urban planners and other staff to effectively mainstream CCA into land use and municipal planning processes. In order to achieve this objective the program used three basic strategies: formal training activities ranging from workshops to university courses; peer to peer exchanges with US cities to widen the perspective of municipal officials and technical staff; and a "learning by doing" strategy in which members of the technical teams and working groups engaged in the land-use planning process would acquire new concepts and skills by using them to create each element of a climate adapted land use plan for their respective municipality. Therefore capacity-building activities occurred continuously throughout the Program and because the process had never been implemented before, even Program staff were learning and adapting as they progressed[3].

[3] ICMA staff is never included when reporting number of people trained.

As a starting point, the program mapped the key planning actors, existing information and resources at the municipal level, as well as existing support systems, and planning practices being used in each city. Considering the strengths, gaps and needs identified for each municipality, an offering of training programs was established. The initial analysis showed that municipal staff (both in City Halls and in FEDOMU) needed training with a sufficient number of academic hours to ensure internalization of key concepts in municipal management, climate adaptation and land-use planning. ICMA worked with implementing partner INTEC to develop 120-hour courses that would provide the necessary breadth and depth in each training topic. Three university certificate courses (called *"Diplomados"* s in Spanish) were created: Adaptation to Climate Change; Municipal Management and Community Participation for Adaptation to Climate Change; and Land Use Planning and GIS for Climate Adaptation.

Since "*Diplomados"* were appropriate for a more limited audience of professionals that can comply with the university requirements and evaluation, a series of workshops was developed to reach a larger number of municipal staff. Also, several Training of Trainers (ToT) workshops were conducted for the core group of people from FEDOMU, DGODT and other institutions, who would be key for transferring those skills to the other technical team and working group members.

Table 1 includes a list of the *"Diplomados"*, Training of Trainers and other training workshops offered by the Program, presenting the number of participants and of training hours for each one. Trainees included officials and staff from each municipality, FEDOMU, DGODT, INAPA, the Ministries of Environment, Energy and Mines, Women, Education, Agriculture, and Public Administration; as well as civil society organizations such as CIDEL, ATIDE, PC and REDDOM, among others.

Table 1. Summary of trainings conducted with program support

Date	Training Title	Facilitator	Number of Participants	Hours in-classroom
October to December 2015	Adaptation to Climate Change "*Diplomado*"	INTEC	35 (57% women)	192
October to December 2015	Municipal Management and Community Participation for Adaptation to Climate Change *Diplomado*	INTEC	30 (53% women)	192
December 2015	Training of Trainers: Integrating Climate Vulnerability Assessment to Land Use Planning	ICF	19 (37% women)	16
February 2016	Gender and CCA Workshop for Program Staff and FEDOMU[4]	INTEC	29 (59% women)	8
April 2016	PMOT: Concepts, Methodology and Tools for the G-12 [5]	ICMA	30 (53% women)	16
April 2016	Training of Trainers: Municipal Land Use Planning	ICMA	36 (56% women)	32
May-June 2016	Training of Trainers: Adaptation Planning	ICF	10 (70% women)	16
July 2016	Introduction to GIS	LEAPFROG	14 (57% women)	8
October 2016	Municipal Climate Vulnerability Assessment	ICMA	20 (55% women)	24
October-December 2016	Adaptation to Climate Change Adaptation Diplomado – 2nd cohort	INTEC	26 (54% women)	120
October – December 2016	Municipal Management and Community Participation for Adaptation to Climate ChangeDiplomado – 2nd cohort	INTEC	29 (52% women)	120
October-December 2016	Land Use Planning & GIS for CCA *Diplomado*	INTEC	34 (59% women)	120
November 2016	Introductory GIS Workshop for San Pedro de Macoris	USFS	11 (36% women)	8

[4] Program staff is not included in the number of participants
[5] G-12 is how MEPYD refers to the group of DR national government institutions with some mandate related to land-use planning and/or development. It is currently comprised of 19 institutions including the Ministries of Tourism, Public Works, Environment, Interior and Agriculture

Date	Training Title	Facilitator	Number of Participants	Hours in-classroom
November-December 2016; April 2017	CCA for Resilient Development Workshop	INTEC	114 (48% women)	8
December 2016	Adaptation Measures & Climate Change Workshop	INTEC	73 (56% women)	8
December 2016	Hydrogeology Analysis & Climate Change Resilience Actions Workshop	INTEC	26 (77% women)	16
May 2017	Inclusion of Vulnerable Groups to Climate Change Workshop	INTEC	88 (66% women)	8
May-July 2017	Resilience and Adaptation to Climate Change for Local Organizations in Santiago	CIDEL	25 (48% women)	40
June 2017	Gender and CCA Workshops	INTEC	83 (55% women)	8
July 2017	Training workshop for the facilitators of the Participatory Budget Process in Santiago	CIDEL	27 (61% women)	8
August 2017	Training workshop on Resilience and Adaptation to Climate Change for Community Promoters in Los Ríos	ATIDE	36 (47% women)	12
January 2018	Training of Trainers Workshop on the Resource Notebook	ICF	16 (60% women)	12
TOTAL			766 (58.7% women)	992

Beyond the number of people trained, the program training activities were a significant step forward in achieving a critical mass of professionals who can work with Dominican municipalities to increase resilience through land use planning (see Box 2: "A Qualitative Change").

Internal evaluation results showed that trainings were very well received and positively valued: Key informant interview respondents from San Pedro de Macoris and the National District commented that the trainings made a significant positive impact in the ability of staff to understand the key issues in climate change, the role of municipalities in adapting to climate risks through vulnerability assessment, and how to identify adaptation measures. Table 2 presents the items that were evaluated by INTEC for each *"Diplomado"*, as well as average scores from anonymous student evaluations of the Land Use and GIS for CCA course's 3rd Module, *Laws and instruments for territorial and land use management*, conducted on December 9th, 2016. The table shows that each evaluation area received scores of 3.78 out of 4 or more, giving a snapshot of the "*Diplomado's"* success. INTEC has provided similar tables for each module which show similar results, and which are part of the project records.

Table 2. Student evaluation of Module 3 in Land Use Planning and GIS for CCA *"Diplomado"*

Land Use Planning and GIS for Climate Change Adaptation *"Diplomado"* Module 3: Laws and instruments for territorial and land use Management December 9, 2016. Number of anonymous evaluations: 18	
Course Evaluation Area	**Score (out of 4, averaged from 18 evaluations)**
The Instructor	
Demonstrated mastery of the subject	3.94
Was systematic and clear in presenting content	3.94
Answered questions properly	3.94
Promoted an adequate participation of students	4
Maintained atmosphere of respect and good relations	4
Was dynamic in its presentations	3.83
Used assigned teaching resources	3.89
Complied punctually with his schedule	4
Complied with the established course program	4
Course Content	
Course Content	4
Went according to the established program	3.94
The themes were updated as needed	3.94
Offered basic tools for good development of topic	3.89
Support Material	
Instructor agreed to the topics discussed	3.94
Was updated as needed	4
Copies were legible and without errors	4
Was properly bound	4
Logistical Support	
Treatment received by the INTEC staff was satisfactory	3.89
The work schedule was fulfilled/completed on time	4
The equipment was available as needed	4
The work environment was favorable for good development of the activity.	3.78

Box 2: A Qualitative Change

Educating for resilient planning in the Dominican Republic

With more than 15 years working with municipalities in the Dominican Republic, Beatriz Alcántara is no rookie. She is the head of the Dominican Federation of Municipalities´ (FEDOMU) Office of Environmental Management, which now also offers technical support in climate adaptation and land use planning to the country´s 158 municipalities. Beatriz was a key participant in the implementation of the Planning for Climate Adaptation Program, but she is also an alumnus of the Program´s *"Diplomados"*. In Beatriz´s words: "The "*Diplomados"* enabled a qualitative change in the DR´s capacity for resilient planning, they marked a before and after. The training was rigorous, relevant and comprehensive, allowing participants to fully integrate the new information into their work. And we got to know a lot of people from municipal governments and other institutions, which added value to the process. There is still a lot of work to do, this [the program] was just in four pilot municipalities, but there is a transformation on how we think about resilience and planning."

Diplomado is the name given in the DR to a university certificate course. ICMA, working with its local university partner INTEC, created three *"Diplomados"* s that formed the core of the Planning for Climate Adaptation Program´s capacity building activities. Each one covered a key aspect of climate resilient planning: the first one provided an overview of climate vulnerability and adaptation issues, with an emphasis in tools for modeling future climate and the use of climate information in municipal decision making. The second course was oriented to participatory processes in all aspects of municipal planning and management, focusing in gender and inclusion of vulnerable demographics. The third *"Diplomados"* prepared participants to be facilitators of the municipal land-use planning process, going from the legal framework to specific tools like GIS. This training used DGODT´s methodological guide for the general structure of the course, but incorporated additional topics based on national and international experience and best practices. In all cases, the *"Diplomados"* combined theory and practice distributed in an average 120-hour course.

Participants in the *"Diplomados"* included municipal and national government staff, representatives from civil society organizations participating in the working groups and FEDOMU staff. Strengthening FEDOMU´s capacity to provide technical assistance to municipalities in the planning process was one of the Program´s major objectives, together with increased capacity in the four target municipalities and other key stakeholders such as DGODT. The trainings provided in the "*Diplomados"* was complemented with learning by doing activities as well as with shorter trainings such as workshops.

Beatriz is also enthusiastic about the future: "We [FEDOMU] have already used what we learned to work with other municipalities. And we also have the community of practice, where we can share information and learn from the experience of our peers. All in all, it has been a great experience". The community of practice was established by the program to foster sustainability of results by facilitating knowledge exchange and communication among alumni from the program´s training activities. FEDOMU hosts the community´s virtual space and has also organized two live events: one on the use of GIS as a planning tool and a second one on the importance of land-use planning for city economic development, the latter with participation of an expert from the American Planning Association. It has taken the Dominican Republic a long time to begin to engage in municipal-level planning for resilience. Thanks to this Program's support, it is on the right track.

CityLinks™

A CityLinks™ component was incorporated into the Program and partnerships were established between the cities of Miami Beach, Florida and Las Terrenas; Fort Lauderdale, Florida and San Pedro de Macorís; Dubuque, Iowa and Santiago, and Austin, Texas and the National District to support Program objectives and create learning alliances between the Dominican participant municipalities, FEDOMU and US counterpart cities on a range of resilient planning practices These partnerships have shown to live on well past the life cycle of the initiating program. CityLinks™ is a technical assistance delivery mechanism that enables municipal officials and staff in developing and decentralizing countries to draw on the resources of their international counterparts to find sustainable solutions to their key urban challenges. Each partnership started with an assessment visit from the US city staff to gain an understanding of the local context and how the US city could best assist in furthering the goals of the land use planning process. Key objectives were set for each partnership and each DR jurisdiction identified a team of individuals to travel to the US city to observe specific initiatives and learn how they have addressed the challenges of participatory and climate resilient land use planning. US city staff subsequently traveled to the DR to provide support and share expertise with their DR counterparts in a number of areas, including CCA and land use planning, citizen participation, green infrastructure, sustainable mobility planning, floodwater management and coastal zone management. Box 3 presents a summary of our CityLinks™ experience.

Box 3: Resilient links

Helping cities help themselves

One of ICMA´s most successful strategies in the Planning for Climate Adaptation Program was the CityLinks™ exchanges, in which four US cities were paired as resource cities with our four target municipalities. The resource cities had in common their willingness to dedicate time and resources to supporting Dominican cities. Cities were paired based on shared characteristics: Dubuque, Iowa and Santiago are both mid-sized land-locked cities with historical river flooding issues; Austin, Texas and the National District are similarly sized in terms of population with significant watershed-related challenges; Fort Lauderdale and Miami Beach, Florida worked with San Pedro de Macoris and Las Terrenas, respectively - all low-lying coastal cities vulnerable to sea-level rise and storm surges.

In the words of Mónika Sánchez, from the National District government, the CityLinks™ relationship with Austin offered them “insights and advice… opportunities for the exchange of ideas on different issues

and different solutions to explore." The CityLinks™ model was designed by ICMA to enable municipal officials in developing countries to draw on the resources of their U.S. counterparts to find sustainable solutions tailored to the real needs of their cities. It was formalized in collaboration with the U.S. Agency for International Development (USAID) in 1997. CityLinks™ leverages the experience and expertise of ICMA's membership over 10,000 local government chief administrators and their professional staffs. It is based on the premise that well-managed cities are the key to efficient service delivery, economic growth, sound management of resources, and political stability.

For this program, the CityLinks™ experience comprised a total of four visits for each pair of cities (except for the National District which had a total of five). During the first exchange, resource city staff visited their Dominican counterpart to learn more about the city´s needs and to identify an agenda of priority issues that could be improved through collaboration and exchange of ideas and methodologies. This initial visit provided both groups with a greater understanding of each other's geographies, capacities and challenges. For the second exchange, a delegation from each DR city visited the US resource city to experience firsthand that city's resilience efforts and solutions. At this point, two or three priority issues were selected, and the remaining visits were dedicated to providing technical assistance on these issues.

Each Dominican city had its own set of priorities. For Santiago, CityLinks™ support focused on riverine flood prevention/watershed management, comprehensive municipal planning and citizen participation. The National District selected citizen participation for urban planning, green infrastructure and transit-oriented development. In the case of San Pedro de Macorís the priorities were flooding (from river, storm surges and rainfall) and beach restoration, while Las Terrenas prioritized solid waste management and coastal protection. Lee Feldman, city manager of Fort Lauderdale, FL, when asked during a presentation in Santo Domingo why Fort Lauderdale engaged in this CityLinks™ experience, said the following: "Because we learn as much from our technical exchange partners as they do from us… These partnerships are vital to expand our knowledge base by exploring useful solutions to strengthen our resiliency and ensure the long-term sustainability of our cities. It is not business as usual. We have to look for innovative solutions."

3.1.1 MUNICIPAL CAPACITY EVALUATION

Improving institutional capacity in the four target municipalities was one of the program´s main objectives. The challenge of achieving measurable impact in just three years with very limited resources, while working with large cities like Santo Domingo and Santiago, was significant. The program did not include any funds for improving infrastructure or equipment in target cities. This section presents the findings of the Planning for Climate Adaptation Program's internal evaluation of the capacity of participating municipalities to assess and address climate risks in order to conduct and implement climate resilient land use planning processes.

The program conducted an initial capacity assessment of target municipalities in 2015, which served as a basis for the development of the training program, but the 2016 municipal elections resulted in extensive changes in personnel in three out of four municipalities. Since a new baseline had to be established, a new capacity assessment tool was developed and harmonized with USAID's "GCC Capacity Assessment Tool" published in 2016. Some indicators were selected from that toolkit while other indicators were selected that were relevant to the context of urban planning and CCA at the municipal level in the DR.

Data collection for the baseline assessment was conducted during December 2016 and January 2017. Follow-up surveys with the same respondents conducted one year later, December 2017 and January 2018 provide the results for this final assessment. Municipal capacity was evaluated using five categories, each with indicators determining the level of capacity from one (lowest) to four (highest). The five categories are 1) Governance, 2) Professional Capacity, 3) Data Access and Use, 4) Budgetary Resources for Planning, 5) Capacity for Participatory Planning. Box 4 presents the definition of each evaluation category.

The purpose of the assessment was for the program to be able to track and evaluate the impact of capacity building activities, including the "learning by doing" approach. The assessment was not intended to be a comprehensive situational analysis for municipal capacity, as such an analysis was beyond the scope of the program. The full assessment report is included in Annex 1.

Box 4: Institutional Capacity Assessment Categories

1. **Governance:** The political will of local leadership to advance a CCA (climate change adaptation) agenda and express it through the municipality's mission, objectives, plans and policies.

2. **Professional Capacity:** Municipal Staff's level of formal and continuing education relevant for land use and CCA planning, their level of experience, their knowledge of key national laws and policies applicable to their job functions, and their knowledge of climate change impacts affecting their city.

3. **Data Access and Use:** The municipality's access to planning support systems, including statistical, climate modeling, and geographic information systems software; as well as access to and reliability of socioeconomic survey data, maps, and climate information for integrated land use and adaptation planning.

4. **Budgetary Resources for Planning:** Establishment and/or availability of budgetary allocations necessary for integrated land use and climate change adaptation planning, including: software licenses, at least one staff member dedicated to mainstreaming CCA into municipal planning, and civic engagement.

5. **Capacity for Participatory Planning:** If the municipality has 1) identified vulnerable groups and/or zones; 2) established a platform for civil society to legitimately contribute to planning processes; 3) become familiar with risk reduction and adaptation measures implemented by vulnerable communities themselves; and 4) if the municipality designates funding for joint adaptation actions with communities.

Figures 3 to 6 present the results for each city in each category, both for the baseline and the end of project (EOP) surveys. Overall, the assessment found that institutional capacities have improved in each city, with the Planning for Climate Adaptation Program having the most significant positive impact in the Professional Capacity, Governance and Participation categories, which is consistent with the program´s focus.

Assessment results indicate that Program support has helped each municipality improve climate governance by providing information and creating awareness regarding climate change and its impacts. Respondents indicated that the PMOT process helped bring to the fore the CCA agenda where it had not been an issue prior to the Program. Even though the Program helped to mainstream CCA considerations into land use planning, respondents in all municipalities also indicated that a considerable amount of work is still needed in order to consolidate a sustainable change in the commitment to a CCA agenda among political leadership.

Figure 3: National District

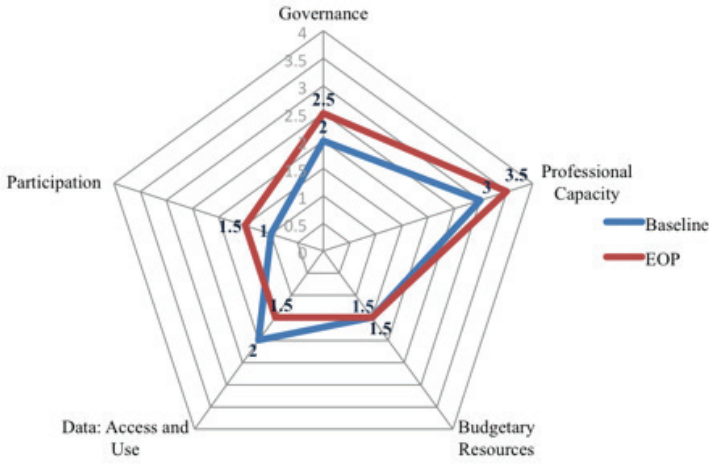


Figure 4: Santiago

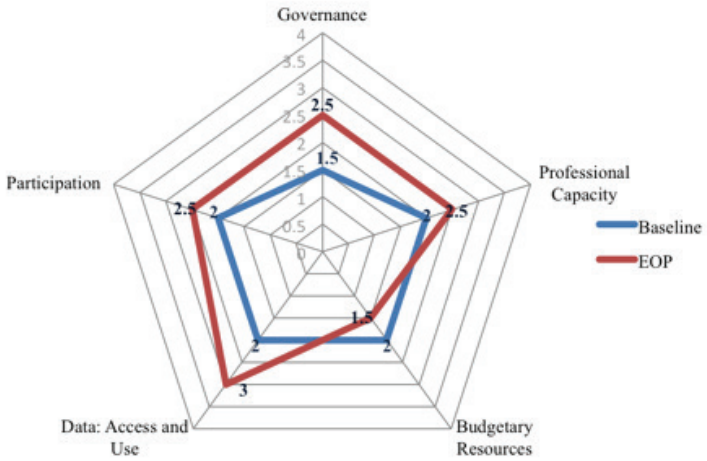


Figure 5: Las Terrenas

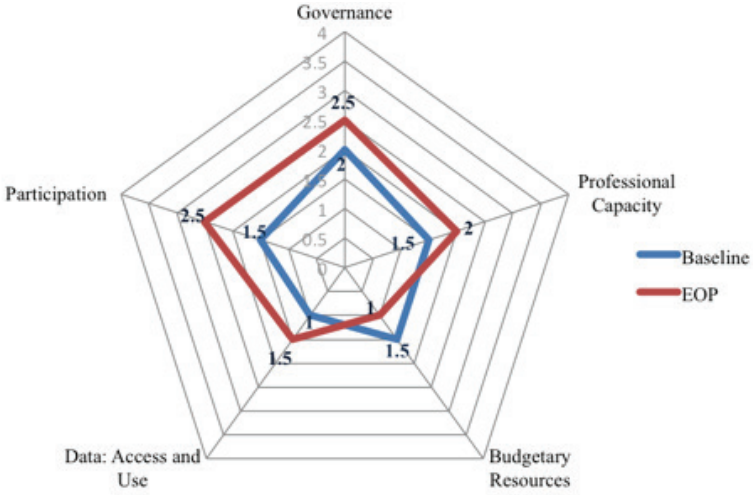
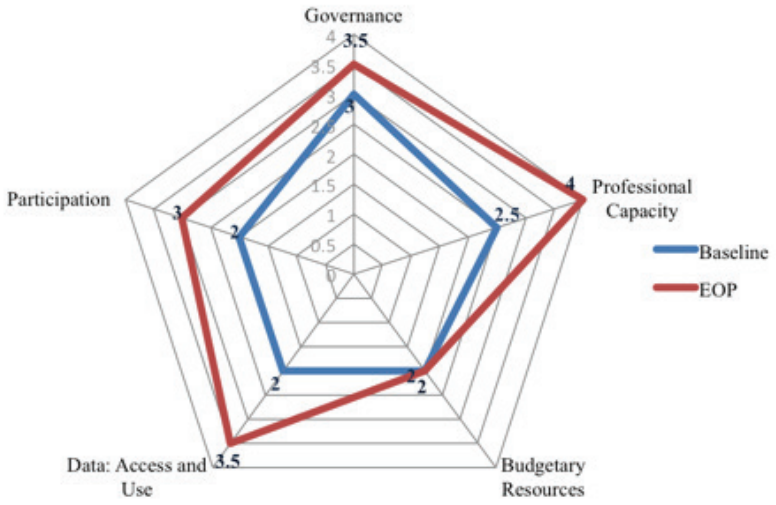


Figure 6: San Pedro de Macorís



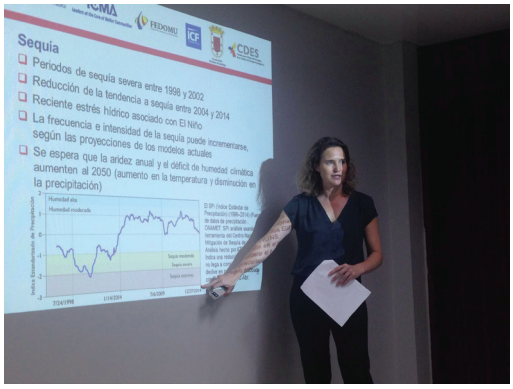
Notably, the Directors of Urban Planning in San Pedro de Macorís and the National District confirmed that the Planning for Climate Adaptation Program has had a positive impact on professional capacity building through its training workshops, working group and technical team meetings; which coincided with the opinion of other key informants. In the Data Access and Use category, overall results are positive for Las Terrenas, San Pedro and Santiago, but negative for the National District. The positive impact from the Planning for Climate Adaptation Program was linked to an improvement in access to information found in the territorial diagnostics, climate vulnerability assessments, land use and CCA plans. While informants in the National District agree this is the case, they cite continued difficulties for accessing raw data, which may have more to do with poor communication among Dominican institutions that generate such data (and even among departments within the municipality) as well as with limited data collection capacities. It seems ADN had some expectations that our program was going to provide them with resources for data generation, but this was outside the Program´s scope.

It should be noted that although information flows between agencies remains problematic, there is national-level information available for free in many Dominican institutions and on-line. There is, however, a lack of knowledge as to where to find the information. The program provided guidance on information sources as part of the PMOT development process as well as in the trainings and tools developed. In particular, the Resource Notebook for Integrating Climate Change Considerations into Municipal Planning provides comprehensive information and links to access and manage relevant climate data.

With regard to the Capacity for Participatory Planning category the findings confirm that dialogue for participatory planning between the municipality and vulnerable communities has also improved in each city as a result of program support. However, as the program ended a year early, it was not able to monitor and evaluate structures of civic engagement after the completion of the land use and CCA plans.

3.2 COMPONENT 2: INCORPORATE CLIMATE CHANGE ADAPTATION CONSIDERATIONS INTO THE MUNICIPAL PLANNING PROCESS (IR 2.1.2)

Key Related Activities:	Key Related Indicators:	Achieved
2.1. Develop a streamlined planning process which mainstreams adaptation into land use and other planning (IR 2.1.2a)	Number of municipal land use plans that include adaptation strategies as a result of USAID supported land use planning processes	4
	Number of climate change adaptation tools, technologies and methodologies developed, tested or adopted supported by USG assistance	6
	Number of climate vulnerability assessments conducted as supported by USG assistance	4
	Number of People supported by the USG to adapt to the effects of climate change (11.5)	558
2.2. Formalize and Strengthen Public Participation in the Planning Process (IR 2.1.2 b)	Number of community organizations, including those representing vulnerable groups, that actively participate in municipal participatory planning processes presenting climate change adaptation related issues or proposals	372



In 2015, at Program inception, the Dominican Republic lacked formal guidelines for municipal land use planning. Out of 158 municipalities only one had approved a land use plan for its urban area, and none had any experience in incorporating climate change and resilience into the municipal land use and development planning process. This is the context that shapes the implementation of our second component. To develop a streamlined planning process which mainstreams adaptation into land use and other municipal planning, the Program collaborated with DGODT in finalizing the PMOT Guide, making climate adaptation into a cross cutting theme in the Guide and including an initial set of tools for assessing vulnerabilities and identifying adaptation measures. The Program team tested the theory of the proposed process in the four target municipalities. By March 2018, at Program close out, all four municipalities had drafted climate adapted land use plans. Perhaps most important, there was sufficient information on the process to provide lessons learned that allowed for a revised and expanded set of tools and resources that can be used by other municipalities to replicate the process, avoiding some of our mistakes.

As explained in component one, both land use planning and climate change are new subjects for professionals working at the municipal level in the DR. Therefore, the importance of the capacity building component explained above. With project deadlines, ICMA could not wait to have a critical mass of trained personnel before starting the planning process, which meant that learning by doing and piloting the proposed methodology became an organically integrated process. Box 1 (above in section 2.3) summarizes the 7-stage process proposed by the PMOT Guide and explains Stages 1-4 are the Program scope. Figure 6 below indicates the main climate activities conducted within each of those four stages, while Figure 7 presents a generalized timeline for a model municipality.

Figure 7: Incorporating Climate Adaptation

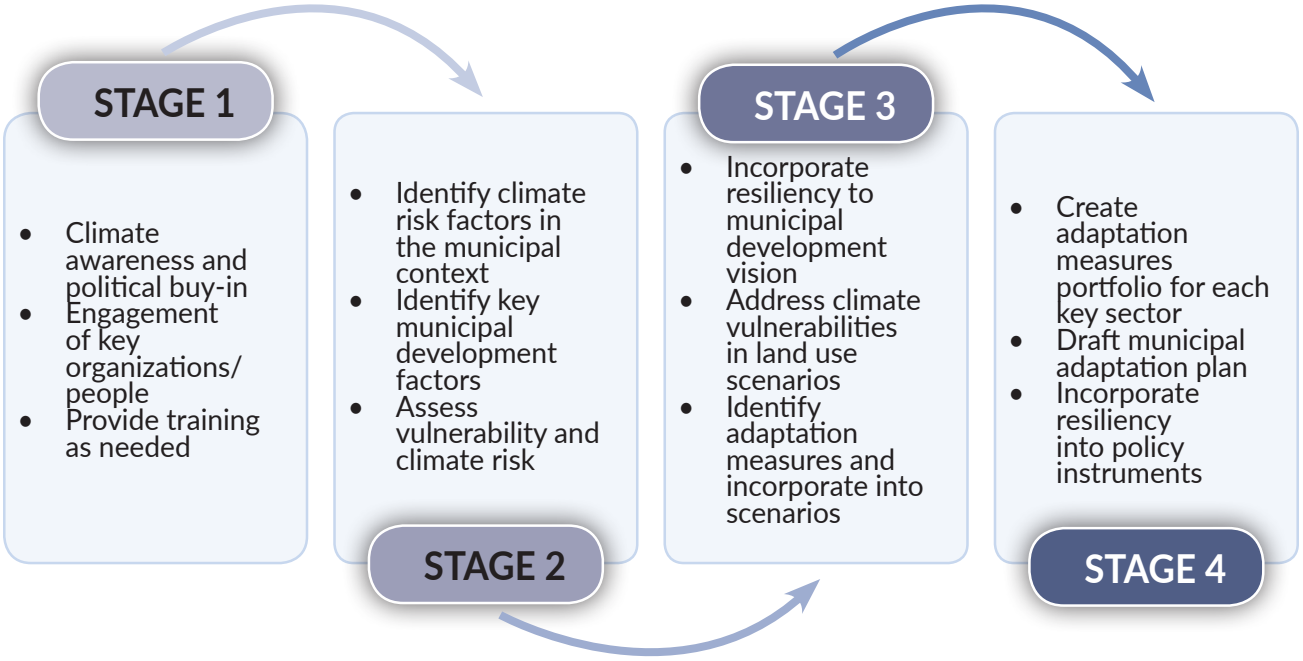
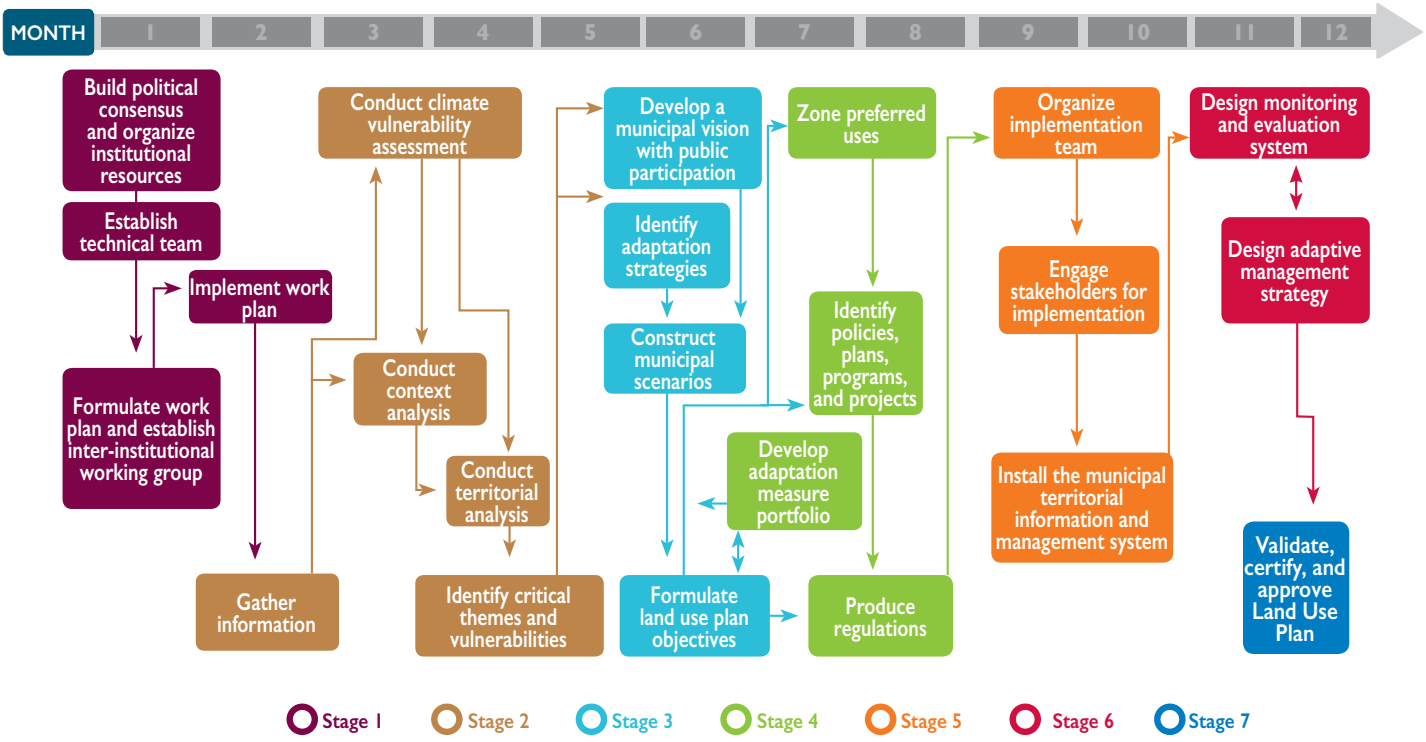


Figure 8: Process timeline



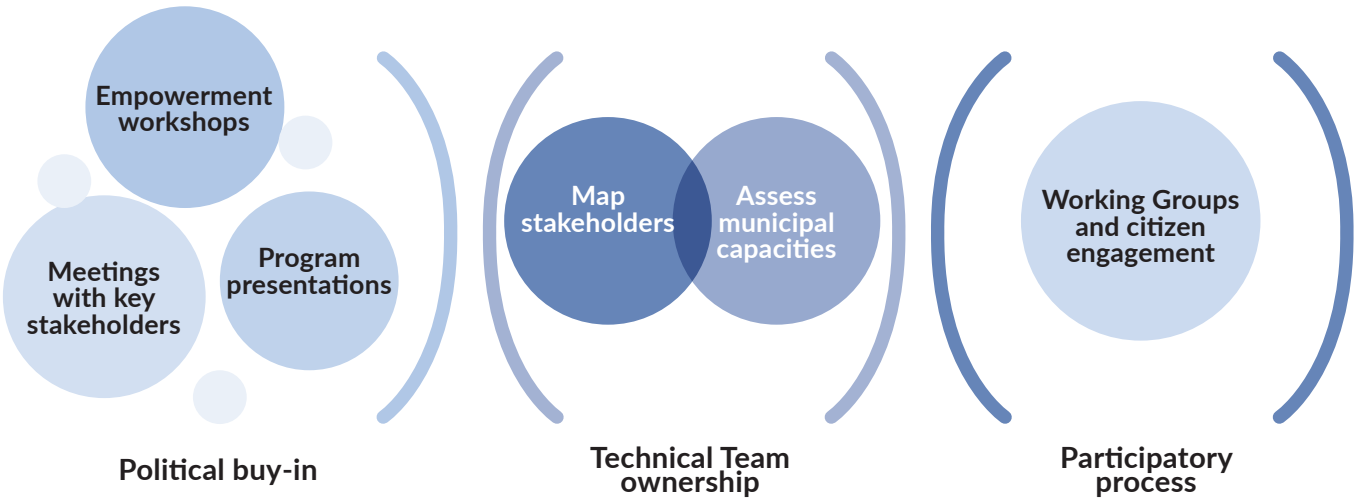
Incorporating climate resilience as a main consideration from Stage 1 is key to the success of the Program. Our team dedicated a significant amount of time and effort to engage key political, social and economic actors in each municipality, to create awareness and political buy-in for a climate adapted land use planning process. The main message for Stage 1 is that considering climate change during the land use planning process helps the municipality understand how climate change influences local land use patterns now and in the future. The initial empowerment workshops in each municipality, in which the Technical Teams were instituted, focused on examining the connections between existing physical and social vulnerabilities and changes in climate, and how accounting for these climate vulnerabilities when designing land use policies and practices—deciding how and where the community will grow—makes good sense to ensure a sustainable future. The Technical Teams (TT) were comprised of municipal staff, with representatives from the local development council, FEDOMU and ICMA. Under the leadership of the official designated by the municipality to coordinate the process, the TT met once a month on average for the duration of the process, collaborating to create or revise the technical outputs of each stage with technical assistance from the Program staff and partners. Box 5 summarizes the main objectives of a climate adaptation strategy considered throughout the process.

Box 5: Key objectives of a climate adaptation strategy

1. Prevent further development in vulnerable areas (at risk of coastal/riverine flooding or landslides)
2. Reduce climate impacts to populations and assets already in at-risk areas (accommodation, protection or retreat)
3. Foster metropolitan green systems and ecosystems-based adaptation to reduce urban heat and floods, while increasing biodiversity and improving urban landscape
4. Reduce negative synergies between climate and non-climate impacts by improving environmental quality and basic services
5. Develop and strengthen relationships and coordination across institutions, civil society, and key sectors to build capacity to manage climate vulnerabilities
6. Identify and invest in priority research and information needs to improve monitoring and understanding of climate-related vulnerabilities.

Land use plans create a regulatory frame of reference at the municipal level that limit discretionary authority by the Mayor and the City Council when authorizing land use for new developments. This creates an incentive for political figures to oppose land use planning processes and therefore makes political buy-in even more critical to success. By promoting a participatory process in which the Program engaged inter-institutional and inter-sectoral Working Groups (WG), as well as citizens and neighborhood associations, we were able to balance political interests and promote support for the implementation of the plans under development, which will be key to sustainability of results. Figure 8 shows the main aspects of Stage 1.

Figure 9: Stage 1 is key to process success



Mainstreaming climate change in Stages 2 through 4 involved the identification of municipal climate vulnerabilities, development of the adaptation measures portfolio and integration into the land use plan. These activities were carried out in conjunction with the land use planning process as indicated in Figure 6 above. The process produced vulnerability assessments and adaptation plans for each municipality that will also serve to inform other municipal planning. Box 6 summarizes the activities that led to the adaptation portfolio and incorporation of measures into the land-use plans.

Box 6: General steps to an adaptation portfolio

1. At the beginning of the adaptation process, a series of workshops were held with the working groups and the main sectors and civil society organizations of the municipality to review the main vulnerabilities and to provide training in climate adaptation.

2. From the vulnerabilities identified in each municipality, general adaptation actions were identified to address the different vulnerabilities focused on the services and key sectors for the development of the municipality.

3. The technical teams in each municipality then identified adaptation measures applicable to land use planning and a range of other resources, sectors and services.

4. This list was expanded and complemented with the recommendations of the technicians of Miami and Fort Lauderdale, Florida and Austin, Texas that came as part of the City Links Program.

5. In a workshop with the technical team and other relevant actors (e.g. Ministry of Environment and/or Tourism), each of the adaptation measures was evaluated in terms of effectiveness, affordability and feasibility. The selected measures form the adaptation portfolio of the municipality. The adaptation plan documents identify implementation criteria for the measures, which include the creation of a municipal climate change technical team, an implementation timetable and adaptive management processes.

6. For each measure the most appropriate land use tool (zoning, regulation, plan, policy, program and project required for its integration in the land use plan were identified and a time frame for implementation was determined. For those measures which are to be implemented through zoning, the appropriate cartography was developed. The technical criteria were compiled to develop municipal ordinances in support of the zoning recommendations.

The process resulted in adaptation portfolios for each of the pilot municipalities tailored to each specific set of vulnerabilities and conditions. All adaptation plans and portfolios have been uploaded to the Development Experience Clearinghouse (https://dec.usaid.gov/). For the National District the adaptation portfolio contains seven strategies and 22 accompanying measures, directed at the creation of no-build zones in the vicinity of the Ozama and Isabela rivers (and its tributaries), the development of flood-adapted infrastructure projects in selected neighborhoods , increased urban green infrastructure and fostering a metropolitan green system and the development of comprehensive plans and programs for key services (water supply, solid waste management and urban mobility).

Santiago was a very special case among the Program´s target municipalities, as it was the only one which had already developed a land use plan -for its urban area, in 2012- and had recent information on climate risks from multiple studies conducted by an IDB-funded Emerging and Sustainable City project, together with local institutions. The Program built on this information and facilitated the formulation of an adaptation portfolio that contains 9 strategies and 53 corresponding measures that apply to all municipal service sectors. Measures include adding land use categories for specific hazards, conservation and agriculture; construction of retaining walls and other risk-reducing infrastructure; a reforestation program in the urbanized zones and a pilot paying scheme for environmental services such as de-silting and water quality maintenance in the Rio Yasica upper watershed. The portfolio also recommends expanding the classifications of non-developable lands according to specific objectives, including historic, cultural, biodiversity, agricultural and forest, as well as natural risks (climatic and geological), sanitation (landfills and waste treatment plants), etc. The Adaptation Plan recommends a greater emphasis on green infrastructure to help promote the construction of green roofs, vertical gardens and other innovative designs. Also, the resulting climate adapted land-use plan for Santiago is the first to incorporate all the municipality´s districts, considering both the urban core of the city of Santiago and the agricultural and sub-urban districts of Jacagua, Hato del Yaque, La Canela and Pedro Garcia (See Box 7: “For the first time ever”).

Box 7: For the first time ever

Santiago became the first municipality in the Dominican Republic to develop a land use plan that includes rural districts

The Planning for Climate Adaptation Program was a project of many firsts. It helped develop the first methodological guide for municipal land-use planning in the Dominican Republic. It was the first to incorporate climate resilience considerations into municipal planning processes. And most important, it produced the first climate adapted land use plans in the country. For Santiago, one of those firsts was also a milestone for municipal planning and governance in the Dominican Republic, as Santiago became the first municipality to incorporate rural districts into the land-use planning process, and thus the first to complete a plan that truly addresses all of its territory.

Marco Gómez, Director of the Santiago Land Use Plan, highlights the significance of this achievement by pointing out that "Some of Santiago´s most vulnerable areas are within the municipal districts. With the new regulations we will be able to limit new residential development in areas prone to landslides to the north of the city, and support watershed protection in areas critical for flood prevention." In addition to reducing climate vulnerability, the incorporation of the municipal districts into the municipal land-use plan will help the municipality make better decisions on city expansion, transportation investment and provision of services such as solid waste collection and drinking water.

In the Dominican Republic, municipal districts are jurisdictions carved out of a larger municipality with semi-independent governance. They have a district director and board that can make some decisions and that provide decentralized municipal services. But only the municipality they belong to can engage in land-use planning and conduct permitting processes. The municipal districts are relatively new figures in Dominican municipal governance and there is often tension between them and their municipality. Santiago has four municipal districts, comprising about 75% of the municipal territory: Hato del Yaque, La Canela, Pedro Garcia y San Francisco de Jacagua.

About six years ago, Santiago completed a land-use planning exercise that focused on the urban core (the city of Santiago proper), treating the rest of the municipality as agricultural or rural land. As a result, land use (including urban expansion) in the municipal district remained largely unregulated. On municipal district lands bordering the city limits, new development often occurred in violation of municipal regulations. As a result of the Planning for Climate Adaptation Program, Santiago has taken the first steps to solving these issues, by engaging municipal district officials and stakeholders in the municipal land-use planning process and including all of the territory in the new proposed land-use ordinance.

Las Terrenas is the least developed of the target municipalities and presented a good case study of a coastal town experiencing rapid spatial development because of its tourism industry and an increasing vulnerability to flooding and coastal erosion due to lack of planning. The adaptation portfolio for Las Terrenas includes 7 strategies and 20 corresponding measures that address these challenges and propose zoning regulations to promote ecosystems-based adaptation and biodiversity, as well as recommendations to expand non-developable land classifications to include agriculture and forestry, conservation, climatic and geological risks, and environmental health hazard hotspots. The measures also call for evaluating municipal infrastructure, improving infiltration, rehabilitation of river embankments, estuaries and the coastline, and investment in research to fill data gaps that currently hinder the improvement of planning support systems. Las Terrenas is now the focus of a national government development planning process and all the information and Program results have been adopted by the planning team lead by the Office for the Rehabilitation of La Barquita and Surroundings - URBE (a decentralized office under the Ministry of the Presidency), which gives us great expectations that program results will have a significant impact for future sustainable development of the municipality. Box 8: "Planning for success" provides an overview of the main recommendations of the Las Terrenas municipal land-use plan.

Box 8

Led by ICF, the Planning for Climate Adaptation team conducted a Post-Event Assessment of Resilience (PEAR) to document the hurricane impacts and sensitivity of municipal assets, the effectiveness of preparedness measures, and whether any assets or communities exhibited differential levels of resilience. PEAR is a structured approach designed by ICF for empirically assessing vulnerabilities, resilience, and effectiveness of adaptation in the wake of natural disasters. Hurricanes Irma and Maria provided an opportunity to ground truth the assumptions and findings of Las Terrenas' Climate Change Vulnerability Assessment surrounding current storm vulnerability and adaptive capacity, and to improve the recommended resilience strategies in the Las Terrenas' then "draft" Municipal Land Use Plan.

Stakeholders interviewed during site visits immediately after Hurricane María and two months afterwards expressed a strong belief that Las Terrenas' Municipal Land Use Plan offered a transformational opportunity to improve resilience, and agreed that it was critical to leverage zoning to keep people and assets out of harm's way. Zoning restrictions in Las Terrenas' Municipal Land Use Plan and Ordinance will empower the city to ensure that Las Terrenas is developed in a sustainable and resilient manner.

San Pedro de Macoris' land use plan was the first land use plan formally adopted with program support and the first municipal land use plan in the country that integrates climate change adaptation. San Pedro de Macoris's adaptation portfolio contains 9 strategies and 32 corresponding measures, some of which include restricting development along land prone to flooding and landslides, reducing or eliminating altogether the risk of flooding along flood prone settlements; ecosystems-based adaptation to promote biodiversity and ecotourism, preservation of historic resources, and increased awareness-building of climate-resilient urban development. Box 9 "Having the Mayor involved made all the difference" highlights the importance of political support for the process by showing how San Pedro de Macoris went from zero land-use planning experience to being not only the first to finish but the one municipality that achieved greater integration of the process into the municipal policies and practices.

Implementing partner ICF worked with ICMA to develop "Resilient Land Use and Development Planning for Dominican Municipalities: A Resource Notebook for Integrating Climate Change Considerations." The notebook is a key companion resource to the PMOT guide that guides Dominican Municipalities in mainstreaming CCA into their land use plans and helps integrate climate change factors into municipal development planning and decision-making.

The notebook contains the following components:

- An overview of key climate change concepts
- An integration roadmap that establishes the entry points for integrating climate information into the planning process
- A process timeline indicating how the workflow can evolve over a period of time
- Stage by stage instructions indicating how climate change can be integrated into the PMOT process
- Assessment and planning tools to guide the implementation process
- Additional resources that may be useful

The notebook is structured in a way that allows municipal planners to reference the resources that pertain to the specific PMOT stage they are currently working on. In January 2018, ICF conducted workshops with municipal planners and FEDOMU on how to use the guide.

ICMA also involved three entities with very specific skill sets: ATKINS, a global leader in engineering and applied science who was a resource partner, CEUR, a research center from local university PUCMM, and LEAPFROG, a small business based in Mexico and co-owned by a Dominican urban planner.
CEUR[5] conducted the socioeconomic diagnostics for the National District, Las Terrenas and San Pedro de Macoris. (Santiago already had recent data from other projects). CEUR´s expertise and local experience provided a perspective that complemented the Program team.

LEAPFROG was charged with developing basic cartography from satellite images and with providing training for FEDOMU and municipal staff. Their products served as the basis for all maps developed by the Program as part of the planning process.

ATKINS tested their Urban Simulator technology in Las Terrenas (then called Future Proofing Cities tool), providing important input for the city´s vulnerability assessment and adaptation plan. In the words of Stephen Bourne, PE, Resilience Project Director for Atkins North America "The Planning for Climate Adaptation Program was a valuable proving ground for Atkins' internationally recognized City Simulator technology. City Simulator is a new technology that allows us to forecast how resilient a city will be to climate change-induced challenges like larger hurricanes, longer droughts, and sea level rise. Focusing on the resort town of Las Terrenas - and guided by feedback from the important town stakeholder meetings facilitated by ICMA - we showed that a balanced mix of improving storm water controls, incorporating renewable power sources, introducing better telecommunications, and controlling coastal erosion will lead to better city-wide productivity, lower congestion, and improved citizen health."

[5] CEUR is the Center for Urban and Regional Studies of the Pontific Catholic University Matter et Magister (PUCMM).

Box 9: Planning for success

The small tourist town of Las Terrenas seizes the opportunity to make big development decisions

For the past 20 years, Las Terrenas -a coastal town in the Dominican Republic's Samaná Peninsula - has been undergoing an impressive transition from traditional fishing village to international tourism hub and expatriate enclave. This transition is easily seen just with the growth in construction of hotels, which almost doubled from 57 in 2011 to 113 in 2016. The increase in hotels and resorts, restaurants, and other key tourism infrastructure has given rise to a form of urbanization that is often described by residents as haphazard, with little thought given to planning and environmental sustainability. Key ecosystem services, such as the shoreline, rivers and mangroves – have been degraded rather than made an asset for tourism. As a case in point, it has been estimated that at least 17% of the shoreline has been severely eroded due in part to rapid conversion of land use to accommodate new buildings and roads. The compromising of these resources has led to increase in vulnerability compounded by climate change. The overall increase in vulnerability in Las Terrenas is due in no small part to a lack of growth management: up until 2017, Las Terrenas never had a municipal land use plan.

In 2015, Las Terrenas municipality embraced the opportunity to develop land-use regulations offered by the Planning for Climate Adaptation Program. Municipal authorities from two different administrations and city staff have actively participated to provide Las Terrenas with a resilience-oriented land use plan.

Municipal Budget Officer Rosa Martinez, also a member of the technical team and a longtime resident of Las Terrenas, believes the PMOT process has been instrumental in developing awareness of the key spatial development issues that need to be addressed in Las Terrenas: "With certain activities that we have participated in the past, I've noticed an attitude as if we are fine the way things are even if we are losing our beaches, rivers and facing other problems we all know. This means that there must first be a change in mentality accompanied by a firm execution (of the plan) by the municipality, with support from central government…the PMOT process has helped change the mentality as before we had felt we had no power to face the realities we were experiencing."

The new land use plan for Las Terrenas creates four zones of preferential (or conforming) uses: the coastal edge zone, the urban zone where population should be concentrated, wetlands zone and zone of natural vocation. The coastal edge zone protects the first 60 meters from the coastline from any urbanization and only allows uses and activities that do not risk coastal erosion or other degradation of the beaches; it also calls for a 140-meter buffer zone that protects wetlands, including mangroves that provide ecosystems services (see Figure A).

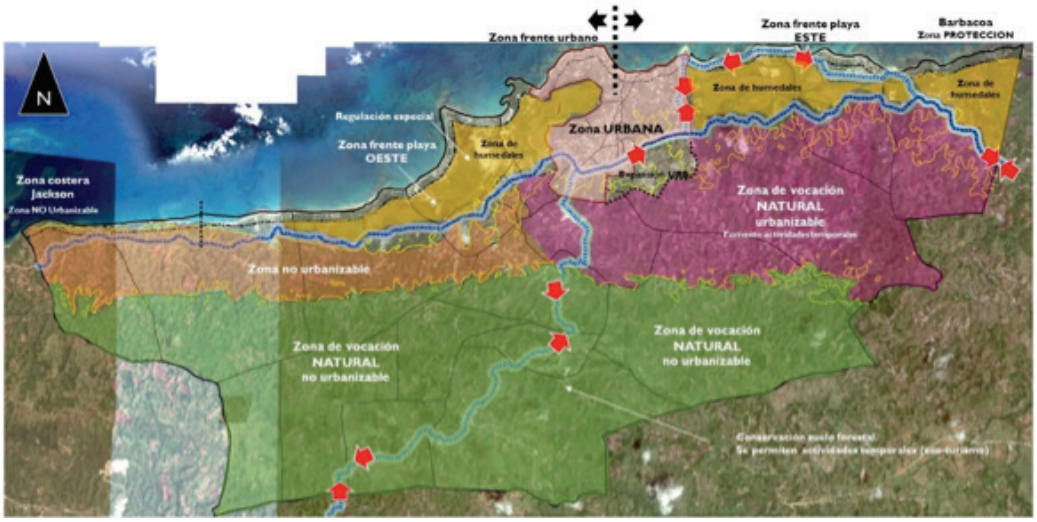


Figure A: Map of preferential use zones for Las Terrenas. Source: Las Terrenas Land Use Plan, USAID/ICMA 2017.

The urban zone permits a mix of grey and green infrastructure and, importantly, requires new developments to be consistent with provisions of the land use plan. The land use plan also addresses two key issues in Las Terrenas: solid waste management and mobility. For the former, an integrated solid waste management approach and zero-waste initiative is proposed. For the latter, a new circuit route was mapped for primary, secondary and tertiary roads, with right of ways for bicycling and walking (see Figure B).

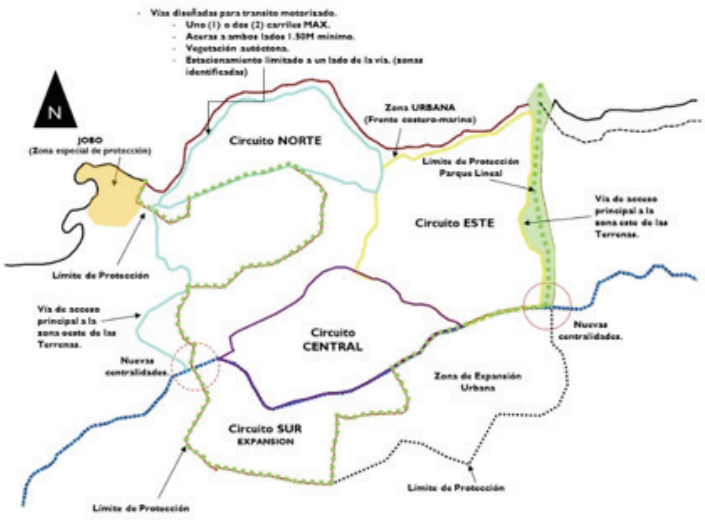


Figure B: Map of proposed circuit route for Las Terrenas. Source: Las Terrenas Land Use Plan, USAID/ICMA 2017.

Box 10: Having the Mayor involved made all the difference

San Pedro de Macorís shows the importance of political buy-in

San Pedro de Macorís is a medium sized city on the south-eastern coast of the Dominican Republic bordered by the Higuamo river. In the first half of the 20th century the city had great economic significance as a major industrial and commercial center, with sugar cane production as its main engine. A significant architectural legacy attests to the city´s heritage. As the city fell on hard economic times, the grid design of the old town gave way to unplanned development, urban sprawl and informal settlements. Nowadays, San Pedro is a vibrant city with an active economy that is suffering the consequences of growth without adequate planning. Like most municipalities in the Dominican Republic, San Pedro did not have a land-use plan until 2017. But they did have a very important element: awareness and commitment on the part of their political leadership. In 2014, when USAID requested expressions of interest from municipalities to participate in the program, San Pedro was one of the first to send a proposal and was the only one among the program´s target municipalities that had included the planning process in their budget for 2015. In San Pedro de Macorís, program results were achieved faster and went further, advancing towards implementation of the actions proposed by the land-use plan, with greater participation of stakeholders. In the words of technical team coordinator José Chevalier "Having the Mayor involved makes all the difference; the evidence of commitment by the political leadership translates into greater participation by other key stakeholders and a more enthusiastic engagement of municipal staff."

San Pedro´s 12-year land-use plan stems from a vision statement that was developed with input from over 90 organizations, including neighborhood associations, community-based organizations, the chamber of commerce, business and industry representatives and academia. Drawing from the city's new vision, the plan contains ten development guidelines that include creating an enabling environment for capital investment, stronger national-local government development partnerships, economic diversification in both urban and rural zones, and promoting ecotourism.

Importantly, the Plan includes the delimitation of 5 preferential uses – urban, agricultural, conservation, industrial and protected areas. Within the urban zone, sub-zones of high vulnerability, protection and conservation are identified and declared unsuitable for further urbanization. Minimum setbacks are established along the shoreline and buffer zones are identified along waterways such as the Higuamo River. All lands within municipal boundaries that qualify as part of the National System of Protected Areas are designated as unsuitable for urban development – see Figure C.

Figure C: Proposed zones unfit for urban development in San Pedro de Macorís. Source: Climate adaptation plan for San Pedro de Macorís, USAID/ICMA 2017.

A key accomplishment unique to San Pedro in the Program´s experience is the linking of the land use plan with the municipal development plan, which is required by law and is the basis for the annual municipal budget. The territorial diagnostic in the land use plan was used by the municipality to prepare the municipal development plan. Subsequently, the projects identified through the land use plan were incorporated into the municipal development plan. Doing so enables actions stated in the land use plan to be included in municipal budgetary allocations. This is fundamental to ensure implementation.

At inception, the program did not include within its scope and strategic objectives the creation of ordinances as an outcome. That notwithstanding, program support through technical team meetings and dialogue with political leadership played a significant role in generating increased interest on the part of the municipalities of San Pedro de Macorís, Las Terrenas and Santiago to formally propose land use ordinances. These ordinances represent a critical impact arising from program support as the ordinances will make implementation of the land use plans legally binding. It follows that through the influence of program support, climate change adaptation now must be integrated with land use planning in these cities. Additionally, these ordinances can serve as reference points in building the case for new ordinances requiring climate-resilient land use planning to be established in other cities in the Dominican Republic.

3.2.1 FACILITATING PARTICIPATORY LAND USE PLANNING

The Program facilitated participation of neighborhood associations, local NGOs and CBOs in the development of the climate resilient land use plans in the participant municipalities. The Program's approach centered around 1) increasing discussion and dialogue on general climate change issues, including local impacts and how climate change can have an effect on a community's general development priorities; 2) training municipal planners on including perspectives and priorities of groups that are vulnerable to climate change into planning processes; 3) bridging science and local knowledge to inform planning; and 4) guiding the visioning and programming components of the planning process. The working group sessions were the catalysts for the third and fourth activities. Working group members were selected through stakeholder mapping conducted by the technical teams and comprised of representatives from local government, civil society (including juntas de vecinos – neighborhood organizations), private sector and academia.

The validation of studies and assessments as part of the planning process took place during working group sessions and additional workshops. Validation here refers to presenting results of studies and assessments conducted by the technical team to members of the public and integrating their concerns, knowledge and priorities into the results. Figure10 and Table 3 show some features of the climate vulnerability assessment validation workshops. Box 10 presents an interview with Victor Souffront, a member of the San Pedro de Macoris working group and Director of the local NGO Macorís Verde, who gave perspectives on his experiences. Box 11: "It has been a decade…Engaging citizens to define their city's future," highlights the public consultation process conducted in the National District to validate municipal diagnostic results and conduct a visioning exercise which identified priorities for the land use plan scenarios. During that process, neighborhood leaders indicated that it had been at least a decade since they were last consulted by the municipality in any policy or planning decision making process.

Figure 10: Type of organizations attending climate vulnerability assessment validation workshops in the National District, Santiago and San Pedro de Macorís. Source: program records (attendance records).

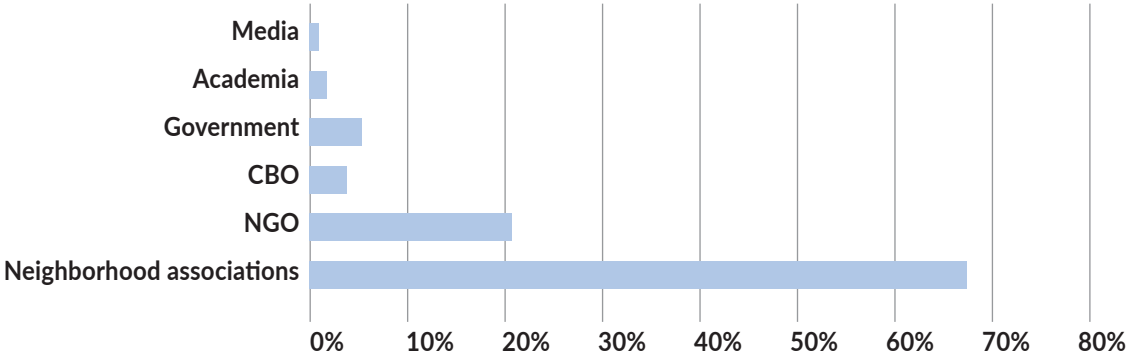


Table 5. Consequences of climate change perceived by participants in climate vulnerability assessment validation workshops in the National District, Santiago and San Pedro de Macorís (combined). Source: Program records (surveys conducted during workshops in each city)

Perceived consequences of climate change	Responses (Per cent in each case)
Increases in temperature	76.47
Sea level rise	38.21
Floods	55.52
Droughts	62.96
Landslides	42.98
Changes in frequency & intensity of rains	50.39
Increase in frequency & intensity of hurricanes and storms	47.47

Box 11: A snapshot of the PMOT working group experience

Interview with Victor Souffront, San Pedro de Macorís working group member.
Conducted February 5th, 2018.

Victor Souffront is a member of the San Pedro de Macorís PMOT working group, and Director of Macorís Verde, an NGO dedicated to the protection and sustainable development of ecological resources in San Pedro de Macorís. ICMA conducted an interview with him to get his perspectives on his experiences in the working group.

ICMA: Please give your honest opinion about the way or methods used in the activity to capture the contribution of civil society for the planning process. Would you change anything?
VS: The methodology used were lectures, conferences, feedback workshops and data collection provided by different local actors. I would change nothing, everything was very good. The activities were well structured, participatory and always focused on the elements of vulnerability of the municipality, in addition to having great experts covering different issues.

ICMA: Do you think that the contribution of the participants had an impact on the planning process? If so, can you describe how?
VS: Of course, since everything that materialized in the activities was fed into the land use plan. The different local stakeholders expressed their knowledge and experiences lived as members of their community.

ICMA: In the context of participatory planning, how would you describe the relationship between the municipality and civil society now compared to two or three years ago? Has it grown or deteriorated? Why?
VS: The PMOT experience created a platform for action between civil society institutions and the Municipality. This process has been increasing and is building a communication channel in the Municipality. The city council has handled communication and interaction between organizations and the City Hall very well.

ICMA: Do you think that permanent changes have been made in the participatory planning process between local government and civil society because of the PMOT process and the issue of adaptation to climate change?
VS: Yes, since previously civil society was neither consulted nor involved in the programming and actions of the municipality; therefore, it has changed 180-degrees in relation to previous times in the recent past.

ICMA: What likelihood do you see that this impact will be permanent?
VS: Well, I understand that there will be regulations, but change takes time and a sustained effort. The positive is that since we were part of the process, we will keep asking the authorities what is happening if regulations are not implemented.

Box 12: It has been a decade… engaging citizens to define their city's future

Dominican Republic´s capital city convenes citizen representatives to a city-wide planning process.

The city of Santo Domingo de Guzmán, capital of the Dominican Republic, is the oldest city in the Americas. It was founded in 1498 by Bartholomew Columbus, Christopher´s brother. As per the constitution, the city is called the National District, which gives it a special status among Dominican municipalities. Today, Santo Domingo is a city of close to one million people, surrounded by a metropolitan area with a total population of about three million. Like most cities in the country, Santo Domingo grew without a comprehensive land-use and development plan, with only partial planning of urban development dating from the 1970´s and 1990´s. The land use plan developed with support of the Planning for Climate Adaptation Program is the first one in the city´s history that encompasses all the National District´s territory. It is also the first to engage citizens in the planning process.

According to Nestor Puente, a representative of a federation of neighborhood associations in the National District, it has been at least ten years since the last time the city government invited these associations to participate in any type of city-wide planning process. And it was the first time ever that they participated in the discussion of a land-use plan for the capital city. In the words of Carmen Bautista, a community representative from El Mirador neighborhood in Ward 1, the public consultation and visioning exercise facilitated by the program was "a magnificent and positive experience" that allowed community members to express their concerns and desires related to land-use and urban development in the city.

The citizen participation process mobilized representatives from close to 200 local organizations in all three wards of the National District. The objectives of the process were (1) to validate diagnostic results, prioritizing development factors in accordance to public perception; (2) to conduct a visioning exercise that would give the city government the elements of future city development most relevant to the citizens; and (3) to gather citizen feedback on the land-use plan guidelines to define "the city we want." The process also helped to inform the community and create awareness on the relationship between land-use and resilience. The process spotlighted the differences among the three wards. Ward 1, where most of the city's high value real estate is located, is mostly concerned with re-development and how to deal with the pockets of informal low-income housing located throughout the ward. Ward 2 is the only one with land available for urban expansion, and thus is mostly concerned with regulating new growth and with mobility (the whole ward only has two access roads that connect with the rest of the district and the downtown area). Ward 3 is the highest density and highest poverty ward, and residents are mostly concerned with security, public spaces and mobility. Interestingly, there were also gender differences. While men prioritized mobility (including public transportation), women gave higher priority to security and green/public spaces.

In the end, there was a consensus about six main characteristics for the city's land use plan model: Santo Domingo wants a city that is compact, resilient, sustainable, equitable, livable and entrepreneurial. Compact means a city that favors mixed use and ease of mobility. Resilient and sustainable mean high environmental quality, lower vulnerabilities and better preparedness. Equitable is a city that is inclusive, accessible, with strong cultural identity, respectful of diversity and with adequate public spaces. Livable is characterized as safe, clean, walkable, well-organized and friendly. Finally, an entrepreneurial city is one that facilitates economic development, values innovation and education. Implementing the land use plan developed with support from the Planning for Climate Adaptation Program is a step towards giving residents of Santo Domingo, the kind of city they want.

Throughout the Program we sought to implement a strategy to effectively engage the private sector. Private sector representatives participated in the working groups and we enlisted the support of our Resource Partner, I2UD to facilitate a private sector action for adaptation workshop and discussions with private sector and civil society representatives to get their buy-in to the climate resilient land use planning process. The Program invited the Director of Boston's Green Ribbon Commission, an urban resilience commission made up of public and private sector members focused on supporting climate resilient projects in Boston to present on the need for a concerted effort to increase resilience to climate change and the development of public-private partnerships to ensure greater investments in adaptation. I2UD also facilitated the participation of North Boston´s NGO Neighborhood of Affordable Housing (NOAH) in an encounter with local private sector and NGO´s representatives in Santo Domingo and Santiago. NOAH´s experience incorporating private sector into the implementation of climate resilient solutions in a low to medium income and high vulnerability neighborhood generated a very meaningful conversation that was on-going at the time of project close-out.

Given Santiago's role as the second economic capital of the DR, we engaged the Council for the Strategic Development of the City and Municipality of Santiago (CDES) to work with local private sector leaders to form a committee modeled after Boston´s Green Ribbon Commission. They obtained the buy-in of key economic actors in the municipality, and a first meeting was held in February 2018. Also, CDES worked with Santiago's private sector to design an award for industries and enterprises that engage in sustainable activities that improve resilience. The proposed award will provide an incentive for such investment in the Yaque del Norte urban watershed.

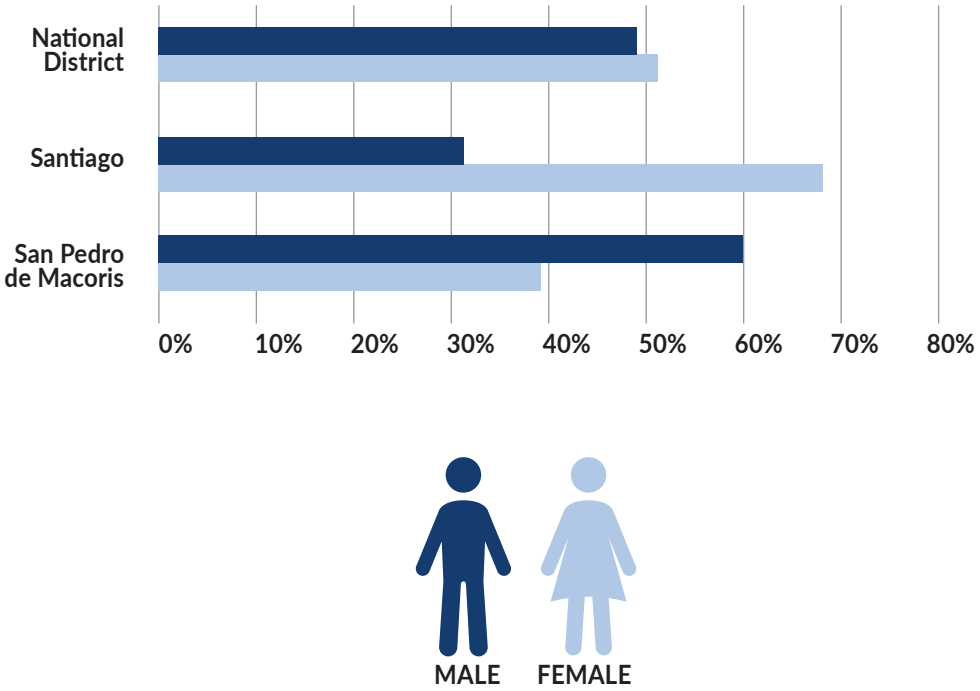
Inclusive Approach

Although a cross-cutting theme to program design and implementation, gender and inclusion are also main elements of our citizen participation activities. The Planning for Climate Adaptation Program was proactive in fostering gender-sensitive and inclusive planning activities by making sure that times were consistent with local gender-defined roles, venues were wheelchair accessible and sign language was provided. A concerted effort was made to invite organizations representing women, the LGBT community and people living with disabilities.

The program tracked female participation in all aspects of implementation, and results show that participation in trainings and workshops is roughly equal in average (sometimes female participation is greater, as is the case with the *"Diplomados"* where 57% of participant were women); the same can be said for technical team members (decision making level) in National District and Santiago, but not so for Las Terrenas and San Pedro de Macoris. This reflects the country´s general trends in terms of the number of women in decision making positions. In citizen participation activities results vary, but also show significant female participation. Figure 13 shows the gender distribution of vulnerability assessment validation workshops in the National District, Santiago and San Pedro de Macorís. For this event, female participation varied by city, from close to 40% in San Pedro de Macorís to close to 70% in Santiago. This is typical of the type of variability observed throughout the program.

The program conducted a gender and inclusion assessment in each participating municipality. The study was conducted by a gender expert from INTEC´s Center for Gender Studies. ICMA also took note of gender differences in perspective related to land use and CCA which have been included in our quarterly reports. Box 12 highlights some key findings in this area.

Figure 11: Gender distribution of participants in vulnerability assessment validation workshop in San Pedro de Macorís, Santiago and National District.
Source: program records (attendance records).



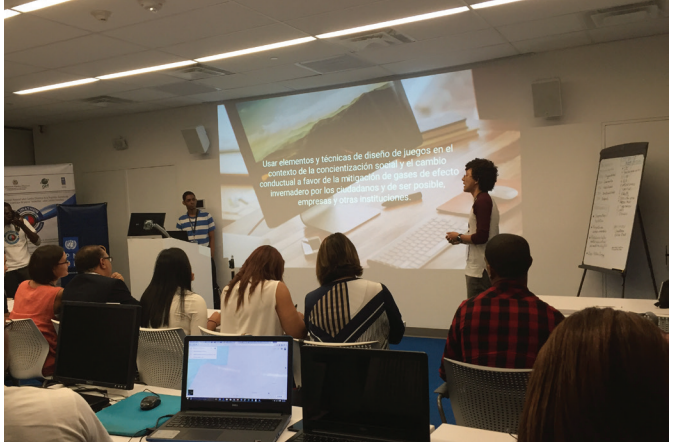
Box 13: Gender matters

Findings of the gender focalization report

One of the cross cutting themes of the Planning for Climate Adaptation Program was gender and inclusion. The program actively sought to promote participation from women, the LGBT community and people living with disabilities in the program´s activities. To better understand how gender issues were being treated by the municipal governments in the four target municipalities, a gender expert was hired to conduct an assessment. She visited the four locations and interviewed key informants both from the city halls and from local civil society organizations. The consultant also conducted focus groups with women and LGBT activists. The report findings can be summarized as follows:

- None of the four municipalities had structural programs focused on women and LGBT groups. Only the National District and Santiago had staff nominally dedicated to these issues.
- Local governments provide aid to women's groups and organizations when they request support such as cash contributions, purchase of medicines, aid for a funeral, construction of a community or local center. So the approach is not part of a gender strategy, but rather a type of political clientelism.
- The municipal budget includes a fund mandated by law which must be allocated to programs for the areas of Gender, Youth and Health. These resources are used in activities such as the ones mentioned above and not for programs, which makes their use discretionary and dependent on the will of the person in charge at city hall.
- In general, municipalities do not include gender considerations in their programs and projects, except when funding comes from external sources such as international organizations.
- Municipal staff and decision makers interviewed for the report are aware of the need to increase sensitivity and to train staff and officials on gender issues.

The Planning for Climate Adaptation program made an effort to improve this situation by providing specific training on gender and inclusiveness for program and municipal staff. There were also specific modules in the Diplomados. Most significantly, gender and inclusion were explicit elements in the discussion throughout the planning process. By the end of the program, San Pedro de Macorís had established a new gender issues office. There is still much work to be done to achieve truly inclusive municipalities in the DR, but thanks to the Planning for Climate Adaptation Program, a step was taken in the right direction.



The Program also worked closely with the National Council on Climate Change and Clean Development Mechanism to engage young people in the development of tools for communication and outreach regarding climate change, and to facilitate citizen participation in the municipal planning processes. A hackathon, CLIMATHON, was held from April 4th to 6th where local computer science experts, graphic designers and others were involved in the innovation of climate change related tools and applications. Close to 80 people participated in the event. Other institutions supporting this initiative included the Ministry of Environment and Natural Resources, the United Nations Development Program and several private sector organizations including Fundación Popular, Microsoft and the Camara TIC-RD. Three of the applications developed during the hackathon offer promise as tools that can be used to raise awareness and engage communities in adaptation decisions. Two of those three were among the winners of the event: "Status CO2" (which gamifies climate conscious activities) and "OpenClimatech" (a web based platform for climate participation). The third one, called by its developers "Ecoleaf" is a mobile app that includes features to facilitate interactions between the public and decision makers. Further development of OpenClimatech was supported by UNDP as an education portal for the general public.

3.2.2 SMALL GRANTS

The Planning for Climate Adaptation Program awarded five small grants to local institutions (averaging $10,000 each) with the overarching objective of promoting awareness and improving citizen participation in the planning process. The projects were selected through a competitive process and the selected implementors were local organizations, mostly small NGOs. Grant funds could not be used for salaries, but the Program supported the organizations through technical assistance from our staff to improve their administrative and project management capacities. Four of the five grants reached a successful completion. The fifth project was only partially implemented by the original awardee due to organizational deficiencies. The tasks remaining from that award were finalized by another awardee from the same city, which had performed above expectations and proved capable of achieving the planned results in time.

One of the awards, given to Universidad Autónoma de Santo Domingo (UASD) Geography Institute had a different focus from the rest, as its objective was to develop a digital elevation model for a highly vulnerable neighborhood in San Pedro de Macorís named La Barca. Local capacity for the development of information tools that support decision making is very low, and the selection committee felt this was a good opportunity to foster collaboration between the university and the municipality, and the resulting model could be used as a tool to increase community awareness on the importance of land use decisions to reduce vulnerability. The University Geographic Institute (IGU by its Spanish acronym) used drones and GIS software to create a digital elevation model and simulate flooding events using existing precipitation data. Municipal staff in charge of disaster risk prevention and management participated in the whole process and results were given to the municipality.

The Integral Center for Local Development (CIDEL, by its Spanish acronym), implemented a small grant project to foster networking among community organizations in Santiago, to increase local resilience. They conducted an awareness raising and community engagement process that reached a total of 108 community-based organizations in the municipality. CIDEL developed and conducted a training on resilience and adaptation to climate change, which responds to the objective to provide participants with tools to help face the challenges of accelerated urban growth and foster resilience and adaptation to climate change in the municipality. 25 Representatives of 18 social institutions from Santiago completed the training program (52% men and 48% women). The training including the identification of five vulnerable areas in Santiago and the development of a project proposal to reduce vulnerability. Those proposals could potentially be implemented by the municipality.

CIDEL also worked to create awareness among neighborhood and community organizations of the importance of focusing the municipality´s participatory budget on activities that increase resilience and trained staff from Santiago´s city hall on how to incorporate resilience into the participatory budget process. 27 city staff members completed the training session (11 men and 16 women). Although not immediately successful, the linkages with the municipal government were established and the project served as a pilot experience. With sufficient resources and time, this type of networking process can impact the communities´ understanding of which factors increase vulnerability and how to influence government investment decisions in a more effective way to reduce such factors. CIDEL also worked with the neighborhood of Santa Lucia, which is adjacent to the municipal landfill, jail and wastewater treatment plant located in the sector known as Rafey. CBOs from this extremely vulnerable community participated in a strategic development planning process with emphasis in sustainable and resilient development.

For the National District, the winning project was presented by a local organization called Technological Association of Business Research and Development (ATIDE by its Spanish acronym), formed by local businesspeople who wanted to be active in their community's development process. ATIDE´s project objective was to promote sustainable practices and reduce vulnerability of communities in Los Rios, which is a sector prone to flooding in the northern part of Ward 2. ATIDE started by conducting a survey of 280 households to assess risk and environmental conditions in the neighborhoods. The survey collected data related to the housing units, demographics of the inhabitants, solid waste, drinking water, wastewater and health issues. They also conducted a site diagnostic of the Arroyo Hondo creek in coordination with technical personnel from several institutions. A menu of potential activities to increase resilience was developed with community participation. They engaged over 50 CBOs in their sector to establish a network of environmental promoters. 36 volunteers from local neighborhoods (19 men and 17 women) were trained in a two-day workshop on resilience and adaptation to climate change. They served as multiplier agents to educate others in the community about climate risk. At the time of Program close-out ATIDE was in the process of negotiating an agreement with the National Botanical Garden (which is located in Los Rios) to re-forest the margins of the Arroyo Hondo creek, as well as other public areas, to reduce flooding and the impact of heat waves. If this effort is successful, it would be an unplanned result of the small grant and will greatly contribute to scaling of results.

In Las Terrenas, Fundación Plenitud assessed climate vulnerability in the fishing sector, identifying adaptation measures and promoting awareness on the effects of climate change in fisheries and the importance of sustainable practices. This small grant complemented the work conducted by the Program team in Las Terrenas, by working with an important economic sector in the municipality which also has great cultural significance. Fundación Plenitud conducted stakeholder mapping, identifying 13 organizations relevant to the sector, with the main one being the Fishermen Association of Las Terrenas, which groups 77 of the registered fisherfolk in the municipality. The Fundación also conducted a sector diagnostic, which identified the following issues: 1) there is no gender equity. In Las Terrenas there is only one woman in charge of a fishing operation and women's participation in direct artisanal fishing is very limited; 2) CODOPESCA, which is the regulatory agency, does not have statistics on the daily catches in Las Terrenas of any of the 160 registered fishermen; 3) Fishing is carried out by groups of specialized fishermen and there

is no control over no-catch seasons; 4) There is conflict between fishermen: the fishermen of Sánchez and Nagua arrive daily to Las Terrenas and compete with local fishermen. 5) Overfishing is prevalent in Las Terrenas. 6) Fishing areas are polluted from land-based sources. 7) Catch is continually decreasing, and fishermen recognized signs of climate change impacts on coral reefs; 8) There is lower demand and lower prices (possible due to imports); 9) Lack of regulations and / or lack of enforcement of existing regulations is prevalent. Overall, the sector is highly vulnerable as it lacks adaptive capacity and depends on a resource that is already stressed. Plenitud worked with the municipal council and the Mayor´s office to draft an ordinance that would establish a local regulatory framework to promote sustainable fisheries. At the time of Project close-out, the ordinance had not been formally presented to the council yet. The small grant also supported the Fishermen Association of Las Terrenas in a strategic planning exercise, which incorporated climate considerations, and the design of a communications campaign to raise awareness about fisheries and climate. The campaign implementation was outside the scope of the small grant, but Plenitud made arrangements with local media to post some of the messages and coordinated with another local NGO supported by USAID´s CMBP to identify possible synergies in the awareness raising process.

3.3 COMPONENT 3: SUPPORT THE SCALE-UP OF CLIMATE RESILIENT LAND USE PLANNING BEST PRACTICES (IR 2.1.3)

Key Related Activities:	Key Related Indicators:	Achieved
3.2 Confirm Program Effectiveness and Document the Planning for Adaptation Program Experience and Guidance Notes **3.3** Develop a Community of Practice and Expert Network **3.4** Conduct Mid-Program Conference	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance. (11.6)	

The main objective in this component was to ensure that the program's methodology would be scaled-up and used by other municipalities and local government support organizations interested in developing participatory land use and municipal development plans that mainstream CCA. It was envisaged that this would be achieved by 1) strengthening FEDOMU to build capacity and lead land use planning processes well after the program has concluded; 2) develop a community of practice of established and budding planning practitioners; and 3) confirm the program's effectiveness and see what lessons learned can be identified towards future initiatives. Since the scale up and replication phase of the program will not be implemented, activities under this component focused in communicating results and ensuring that FEDOMU and a critical mass of professionals in the DR understand how to use the materials produced by the Project to enable them to continue working in climate resilient land use and municipal planning.

The Program design called for fostering local capacity from day one. FEDOMU, through its sub-agreement with ICMA, contracted a full time technical coordinator for each of the four municipalities with the primary responsibility for coordinating activities with the municipal governments and other municipal actors. These coordinators, along with other FEDOMU staff from their headquarters in Santo Domingo and regional offices

participated in all Program activities, including trainings, technical assistance and CityLinks exchanges. Aside from building the capacity of the technical coordinators, the program conducted a series of workshops with FEDOMU to strengthen its administrative and financial capabilities. We also worked with FEDOMU to enable them to communicate results to their membership (mayors) at their annual assemblies and other conferences to promote the political buy-in for replication of the methodology by other municipalities. Thanks to the Program, FEDOMU was able to place climate adapted land use planning in their municipal agenda, paving the way for FEDOMU to accompany municipalities in the future in their planning processes.

FEDOMU will serve as the hub for a community of practice on resilient municipal development which was launched in July 2017 with Program support. The community of practice will provide a platform of knowledge sharing and networking to the broad range of municipal development practitioners that participated in the program, thus ensuring that best practices, experiences and insights are centrally accessible well after program support has ended. By project close out 65 people had engaged in activities of the community of practice, but more work needs to be done by FEDOMU to make the mechanism into a true virtual community that can function and grow over time.

ICMA also engaged resource partner American Planning Association (APA) to support the community of practice and promote professionalization of planning in the Dominican Republic, promoting a professional network of planners and initiating conversations with the national government and universities. APA representatives gave presentations in community of practice encounters and met with a selected group of Dominican planners who will be the seed for a professional association down the line. Also, APA members shared their experiences and knowledge with municipal staff of the four target municipalities and national government staff through workshops and dialogue sessions on the relationship between urban planning and public investment; creation of professional networks and communities of practice; land use planning as a tool to improve resilience; how to integrate environmental, socio-economic, and spatial considerations into the planning process; and implementation strategies for land use planning. Conversations started with high level officials at MEPYD and two local universities (UCE and INTEC) that should result in a continued relationship between APA and the Dominican Republic.

In March 2017, the Planning for Climate Adaptation Program held a mid-term conference to showcase to an array of Dominican cities its achievements to date in developing participatory climate-resilient land use plans with the first four municipalities. In all, 161 people (74 women) attended the conference, including representatives from 20 municipalities, national government institutions, civil society organizations, academia and international members of ICMA. The conference also served as an opportunity to receive feedback to help the program revise its implementation with the second tier of four cities. Though the second-tier implementation did not occur as planned, the feedback was documented and helped in the design of the “Lessons Learned” Workshop held in September 2017.

III.
RESULTS IN NUMBERS

IMPROVED

Through program support, all

4 TARGET MUNICIPALITIES

have improved their capacity to assess or address climate change risks. These municipalities have a combined population of 1,870,438 people.

TECHNICAL ASSISTANCE

4 CITIES **3 RESOURCE PARTNERS**

Austin, Dubuque, Fort Lauderdale and Miami Beach, together with ATKINS, I2UD and APA, provided technical assistance to the Dominican cities for a combined total of US $191,293 in pro-bono labor

EXCHANGES

114 PEOPLE

directly engaged by the CityLinks exchanges in the DR

COMPLETED

4 land-use plans

were completed that incorporate climate change considerations and adaptation measures.

PLANNING PROCESSES

372 CIVIL SOCIETY ORGANIZATIONS

actively participated in the planning processes conducted in the four municipalities.

REGULATIONS

6 MUNICIPAL REGULATIONS

(3 in Las Terrenas, 2 in San Pedro and 1 in Santiago) were drafted with program support.

PEOPLE TRAINED

766 PEOPLE TRAINED

in land use planning, climate change adaptation, participatory municipal management, gender and climate change, inclusion of vulnerable groups into adaptation, and other topics.

NEW TOOLS

6 NEW TOOLS for integration of climate change into land-use planning were developed and/or tested.

4 PROGRAM CHALLENGES AND LESSONS LEARNED

4 PROGRAM CHALLENGES AND LESSONS LEARNED

Program implementation experiences -including challenges- have been continuously documented and communicated to USAID in Quarterly Reports. As we explained in section 2.4 "Program Monitoring, Evaluation and Learning Methods," ICMA put in place various mechanisms to monitor progress and assess the need for process adjustments. These included regular meetings with staff, implementing partners, USAID, other CLIMA projects and municipalities, as well as activity reports and work plan monitoring. Process systematization was a major goal of the program from the beginning, as it was expected to have a replication phase and to provide clear guidelines for scaling to other municipalities.

The project team conducted a mid-term internal assessment of the land-use planning process methodology and identified the necessary adjustments to completely achieve integration of climate considerations in an effective and efficient manner. Additionally, the mid-term conference held in March 2017 allowed the program to showcase achievements to date and to receive feedback from program stakeholders (municipalities, FEDOMU, other institutions). In September 2017, following USAID's announcement that it would end the program a year early, a lessons-learned workshop was conducted with program staff, ICF and FEDOMU to systematize experiences and further document lessons learned that could be distilled for future similar USAID and ICMA programs.

Further, between December 2017 and January 2018, the program conducted 25 key informant interviews with stakeholders from the municipalities, FEDOMU, DGODT, and academia to gain insight on what were the PMOT implementation process's strengths, weaknesses and recommendations for scaling up with other municipalities. Respondents were also asked to share feedback on the program's training activities, communication and coordination. Insights from the interviews were included in a report commissioned by ICMA titled "Systematization of experiences and lessons learned."

This section presents an overview of the insights drawn from all the learning activities mentioned above.

4.1 LESSONS LEARNED WORKSHOP

In September 2017, ICMA conducted a "Lessons Learned" workshop with the objectives of developing an implementation plan for the final five months of the program and to begin systematizing program experiences and documenting lessons learned. Plenary sessions included developing baseline studies for analysis, implementing participatory and climate-resilient land use planning processes, formal capacity building (through "*Diplomados"*), and institutional strengthening and municipal planning processes. Tables 4 through 7 below highlight key strengths, constraints and recommendations identified in the workshop. These findings helped guide the development of the implementation plan until program closure and set in motion the research for the Systematization of Experiences and Lessons Learned report commissioned by the program.

Table 4. Data collection process for plans

Strengths	Constraints	Recommendations
• Creation of capacity evaluation questionnaire • Self-empowerment achieved by San Pedro de Macorís municipality • CDES in Santiago helped in the process despite changes in political administration • Good assistance by Santiago municipality	• Lack of topographic data • Insufficient municipal/ neighborhood-scale data (everything rather in provincial scale) • Lack of qualified municipal personnel to conduct research	• FEDOMU can influence municipalities to establish their own planning support systems • Link the data gathering process to the municipal development plans as well • Create more primary (field) data and draw more from local knowledge

Table 5. Implementing participatory, climate resilient land use planning process

Strengths	Constraints	Recommendations
• Depth of stakeholder mapping process • Selection of technical teams and working groups was enriching process • Development Committee served as effective convener of key stakeholders	• Weak public awareness of role of municipalities in planning • Civil society and private sector participation was weak in ADN • Lack of interest among certain groups (LGBT, women's groups)	• Link together the municipalities and city councils in decision making processes • Improve civil society and private sector participation • Set a better timeline: two months per stage, 8 months in its entirety

Table 6. Formal Capacity Building

Strengths	Constraints	Recommendations
• Highly positive participant feedback on trainings • Emphasis on CCA led to substantial learning by participants • Training of juntas de vecinos on CCA, gender perspectives was effective	• Bias on part of mayors on who would attend trainings • *"Diplomados"* had a "conference circuit" style at times • Trainings were not customized enough to specific audiences at times	• Need to know more about audience composition (where they're from, familiarity with material, etc.) to better customize trainings • Assign practicums in *"Diplomados"* • Diversify method for selecting participants (i.e. not just mayors)

Table 7. Institutional Strengthening and municipal planning processes

Strengths	Constraints	Recommendations
• The program has generated many experiences that are worth systematizing	• Some city councils (e.g. Las Terrenas) are not familiarized enough with city planning to know what to do with the PMOTs once they are passed	• Need to systematize all the program's experiences • Target trainings towards city council members, mayors

4.2 STAKEHOLDER PERSPECTIVES ON LAND-USE PLANNING PROCESS

Table 8 summarizes responses from municipal staff and members of the working groups. Table 9 presents a summary of responses by FEDOMU staff to the systematization survey. Both groups highlighted the importance of the leadership of the technical teams in facilitating outputs at each stage as well as the importance of political leadership engagement for achieving results. They also mostly agreed on the main constraints to the implementation process, –namely; lack of effective political commitment to further the urban resilience agenda, poor institutional capacity at process inception, lack of well-qualified personnel to execute the workflow, lack of data at local scale, etc.

The National District considered that the methodology was too rigid or inflexible and that more clarity was needed in the roles of each member of the technical team. This is an important comment as it indicates that the methodology may need adjustment when working with more sophisticated municipalities.

Table 8. PMOT Process: MUNICIPAL ACTORS

Municipalities	Strengths	Constraints	Recommendations
National District, Las Terrenas, San Pedro de Macorís;	Program support to see the PMOT process through was instrumental		
San Pedro de Macorís, Las Terrenas, Santiago	Program provided technical support to the drafting of ordinances		
National District, Las Terrenas,		Political will insufficient to institutionalize CCA agenda	Improve strategies to get political leadership more committed; get written commitment by Mayors
National District		Roles not consistently clear; methodology rigid/ inflexible at times;	
Las Terrenas	Public awareness-raising activities	Poor institutional capacity to conduct process; low motivation due to perceived lack of sustainability of proposed projects (can the municipality actually implement them?).	
San Pedro de Macorís	Strong civil society & private sector presence in participatory planning processes; the support given by FEDOMU; establishing Gender Affairs Office	Lack of consistent follow-up on the part of working groups	Create incentives for participation

FEDOMU

Table 9. PMOT Process: FEDOMU

City	Strengths	Weaknesses	Recommendations
All	Technical teams were instrumental in leading process outputs (territorial diagnostics, visioning and scenario exercises.		
National District	Multidisciplinary team comprising different departments (urban planning, strategic planning and environmental management), and different hierarchical positions	Poor availability of local data; inconsistency in following up among certain officials; insufficient consensus-building on what information was needed from the public for the territorial diagnostic; unclear sampling methods for participation activities.	Establish clear roles, responsibilities and proactive strategy for process tasks; use more diverse methods for civic engagement.
Santiago	Good effort to include surrounding districts; strengthening awareness of the importance of taking CCA into account in the land use planning process; and the high quality of technical team outputs due in part to good availability of data.	Insufficient political will to further CCA agenda; local government opposition to adopt PMOT process; sentiments among municipal officials that process was being imposed upon them; adaptation measures extended beyond the scope of land use planning.	
Las Terrenas	Consistent presence and good contributions on the part of stakeholders in the territorial diagnostic and perspective stages	Lack of well-qualified personnel to navigate the process, the inability to establish planning support systems, and high staff turnover.	
San Pedro de Macorís	Substantial commitment among the mayor and city council members; strong participation and consensus building among stakeholders	Insufficient integration of the priorities of the PMOT process with those of the urban planning department.	

4.3 PERSPECTIVES ON TRAINING ACTIVITIES

All local governments indicated that the "*Diplomados"* and other training workshops had a positive impact in terms of generating knowledge and experience. FEDOMU echoed these observations and noted in particular an improvement in Santiago participants' ability to communicate technical/scientific aspects of climate change and adaptation. They also observed that trainings helped enable the National District to develop more strategic objectives for addressing climate risks. Members of academia in San Pedro de Macorís indicated that the *"Diplomado"* on land use planning with GIS was especially beneficial.

Local government, FEDOMU and academia gave unanimous positive feedback about the CityLinks™ program, as it fostered learning and created strategic alliances between partner cities. No respondents offered weak points or recommendations for improving this program.

4.4 KEY LESSONS LEARNED AND RECOMMENDATIONS

Drawing from the mid-term conference, lessons learned workshop, key informant interviews and project documents, several important lessons learned come to the fore. Some of these lessons learned reflect more systemic governance issues that would require a more integrated approach to engage in future initiatives. Hopefully these recommendations will inform future programs designed by USAID and will serve ICMA and other implementing partners to improve project implementation and management.

Greater commitment from political leadership is needed. There is no doubt that, as seen in the case of San Pedro de Macoris, a greater involvement on the part of the city's mayor is needed to ensure a more successful implementation of the PMOT process, especially in terms of galvanizing key stakeholders across sectors and facilitating effective communication and coordination. To promote greater political buy-in, two main approaches have been suggested: to make sure political leaders are aware of synergies between CCA and conventional development agendas (i.e. health, education, infrastructure provision, economic development, etc.) and to construct a clear storyline for the land use planning process and its impact in the municipal development agenda.

In the case of the Planning for Climate Adaptation Program, the change in political leadership that occurred following the elections in the second year of the program proved to be problematic as engaging the new leadership resulted in delays in implementation across all cities except San Pedro de Macorís (which retained its political leadership). The lack of continuity in government initiatives is a common issue in development cooperation projects that requires systemic solutions.

Recommendations:

- Include a robust communications strategy and civil society/private sector engagement
- Design programs that include incentives to mayors such as infrastructure, pilot projects, or equipment, vs. only including training

Communication of the PMOT methodology needs to be improved. The PMOT methodology should be made more clear and concise to a range of stakeholders from diverse professional backgrounds to help improve commitment to the implementation process. Different strategies need to be employed with political leaders, other governmental agencies, the private sector, local NGOs, neighborhood associations, etc.

Recommendations:

- Flexibility needs to be built into the methodology to account for different municipal realities.
- More time needs to be invested in training in the key concepts so that stakeholders are better prepared to participate in the process.

Address systemic institutional needs. Issues such as lack of resources (human or operational), lack of continuity, staff turn-over, poor inter-institutional coordination or communication, limited data gathering and information management capacity, among others, affected how much the project was able to impact municipal capacities. They also limited results, as they slowed down project implementation. Such systemic issues are difficult to address with limited resources, but it is important to consider them in program design.

Recommendations:

- Provide a more integrated approach from the Project design point of view: Incorporate governance support (include budgeting) into the Project from conception and allow for capacity-building before launching into the planning process.
- Manage counterpart institutions' expectations by conducting joint program design and allocating resources to institutional priorities as much as possible.

Streamline data collection. Data collection for studies such as the territorial diagnostic and climate vulnerability assessment should begin earlier in the PMOT process, and should be done in a coordinated matter, as much as possible. Data needed for results must be clearly identified and prioritized, to avoid duplicating data collection or gathering data that is not going to be incorporated in the final result. In the case of the CLIMA projects, this lesson also applies to situations where USAID simultaneously implements separate but complementary projects.

Recommendations:

- Identify and prioritize data and information needs for decision making.
- Conduct data collection for multiple products at the same time whenever possible.
- Dedicate more time and resources to data/information management capacities in target institutions.

Establish planning support systems. While crucial land use and climate information was developed through program support, municipal planning departments continue to have difficulties establishing and maintaining their own planning support systems. This is due to various factors, such as understaffing and high turnover, insufficient access to data management infrastructure, weak inter-institutional coordination, etc.

Recommendations:

- Program resources should be budgeted for this particular objective.

Sustain active civil society and private sector participation. More robust and concerted efforts are needed to secure a sustained participation of civil society and the private sector throughout all stages in the PMOT process.

Recommendations:

- Make awareness raising and training for civil society/private sector an explicit project activity.
- Identify potential PPP opportunities and allocate project resources to promote their development.
- Improve communications and outreach. Include communications campaign.

Working with local partners. Engaging local partners, such as FEDOMU, in project implementation was key to this program's success and to sustainability of results. That said, there are also important challenges associated with working with organizations that have not had sufficient experience implementing Federal funds, or with organizations whose institutional culture is more political.

Recommendations:

- Project must consider sufficient time and resources to improve institutional capacities.
- Institutional assessment process should be completed during first quarter. The partner institution should commit to an improvement plan which is monitored regularly.
- Develop a robust communications and reporting plan.

5 LIST OF DOCUMENTS

5 LIST OF DOCUMENTS

The following documents have been uploaded to the Development Experience Clearinghouse (https://dec.usaid.gov/dec/home/Default.aspx) as supporting material to this final report:

- Climate Vulnerability Assessments for all 4 cities
- Territorial Diagnostics for all 4 cities
- Land Use Plans for all 4 cities
- Adaptation plans for all 4 cities
- Draft Land Use Ordinances for San Pedro de Macorís, Las Terrenas and Santiago (only in Spanish)
- Resilient Land Use and Development Planning for Dominican Republic Municipalities: A Resource Notebook

6 ANNEX: INDICATORS TABLE

ANNEX 1:
FINAL INDICATORS TABLE [1]

USAID/ICMA Planning for Climate Adaptation Program

Indicator [2]	Type	Data Source	Unit	Reporting Frequency	Base Line	Results by end of Project		Desegregation / Comments
						Target	Target	
Number of people trained in climate change adaptation supported by USG assistance (11.1)	Output	Attendance lists/ Program Reports	Count	Quarterly	0	433	766[3]	Women: 450 Men: 316 Table 1 "Summary of trainings conducted with program support" (In the Report´s main body, section 3.1 and below) .
Number of institutions with improved capacity to assess or address climate change risks supported by USG assistance (11.2)	Output	Institutional capacity-building assessments	Count	Annual	0	4	4	Type of organization: Municipal Government (City Hall) of San Pedro de Macoris, Santiago, Las Terreras and the National District See details on Capacity Assessment below.
Number of laws, policies, regulations, or standards addressing climate change adaptation formally proposed, adopted or implemented as supported by USG assistance (11.3)	Output	Program reports	Count	Annual	0	4	6	2 Adopted: Las Terrenas and San Pedro de Macoris adopted municipal ordinances making resilient land-use planning a priority and recognizing the importance of addressing climate adaptation issues. 4 Proposed: Las Terrenas, San Pedro de Macoris and Santiago formally presented land-use ordinances to formalize the resilient land-use plans drafted with program support. Las Terrenas also formally presented an ordinance drafted with support from the small grant project implemented by Fundación Plenitud, to promote sustainable fishing in the municipality.

[1]Target numbers correspond to those established by Modification 8, that reduced the program time and scope to three years and only 4 municipalities.
[2]The indicators are presented in the same order they appear in the Performance Indicators Quarterly Data Registry (QDR) Form shared by USAID/DR with implementers in January 2018
[3]This final number reflects an adjustment from the program´s quarterly reports, as trainings conducted under small grants and some workshops by INTEC had not been included previously, pending revision of final participants lists and other documentation.

Indicator[2]	Type	Data Source	Unit	Reporting Frequency	Base Line	Results by end of Project		Desegregation / Comments
						Target	Target	
Number or People supported by the USG to adapt to the effects of climate change (11.5)	Output	Program reports	Count	Annually	0	430	997	Trained (including small grants): 766 (59% women) CityLinks: 114 (42% women) Small Grants resilient planning efforts conducted with members of neighborhood or community organizations: 117 (38% women)
Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance. (11.6)	Outcome	Institutional capacity-building assessment and program reports	Count	Annual	0	37	22	Council members in SPM and Las Terrenas who approved municipal resolutions to prioritize risk reduction and climate resilience in municipal planning.
Number of municipal land use plans that include adaptation strategies as a result of USAID supported land use planning processes (custom)	Output	Program Reports	Count	Annual	0	4	4	All four municipalities (Las Terrenas, San Pedro de Macoris, Santiago and National District) have completed climate resilient land use plans and adaptation plans.
Number of climate change adaptation tools, technologies and methodologies developed, tested or adopted supported by USG assistance (custom)	Output	Program Reports	Count	Annual	0	5	6	PMOT Guide (developed and adopted) Vulnerability Assessment tool (developed), Atkin´s Futureproofing cities tool (now called Urban Simulator, tested), Adaptation Planning Tool (developed), Capacity assessment tool (developed), Resource Notebook for Climate Change Adaptation Integration (developed)

Indicator[2]	Type	Data Source	Unit	Reporting Frequency	Base Line	Results by end of Project		Desegregation / Comments
						Target	Target	
Number of climate vulnerability assessments conducted as supported by of USG assistance. (custom)	Output	Program reports	Count	Quarterly	0	4	4	One for each target municipality.
Number of city partnership programs fostered as supported by USG assistance. (custom)	Output	Program reports	Count	Quarterly	0	4	4	Dubuque, IA with Santiago, DR Austin, TX with National District, DR Fort Lauderdale, FL with San Pedro de Macoris, DR Miami Beach, FL with Las Terrenas, DR
Number of community organizations, including those representing vulnerable groups, that actively participate in municipal participatory planning processes (custom)	Output	Program reports	Count	Quarterly	0	150	407	National District: 197 San Pedro de Macorís: 93 Las Terrenas: 9 Santiago: 108

Table 1. Summary of trainings conducted with program support.

Date	Training Title	Facilitator	Number of Participants	Hours in-classroom
October to December 2015	Adaptation to Climate Change Adaptation Diplomado	INTEC	35 (57% women)	192
October to December 2015	Municipal Management and Community Participation for Adaptation to Climate Change Diplomado	INTEC	30 (53% women)	192
December 2015	Training of Trainers: Integrating Climate Vulnerability Assessment to Land Use Planning	ICF	19 (37% women)	16
February 2016	Gender and Climate Change Adaptation Workshop for Program staff and FEDOMU	INTEC	29 (59% women)	8
April 2016	PMOT: Concepts, methodology and tools for the G-12 [4]	ICMA	30 (53% women)	16
April 2016	Training of Trainers: Municipal Land Use Planning	ICMA	36 (56% women)	32
May-June 2016	Training of Trainers: Adaptation Planning	ICF	10 (70% women)	16
July 2016	Introduction to GIS	LEAPFROG	14 (57% women)	8
October 2016	Municipal Climate Vulnerability Assessment	ICMA	20 (55% women)	24
October-December 2016	Adaptation to Climate Change Adaptation Diplomado – 2nd cohort	INTEC	26 (54% women)	120
October – December 2016	Municipal Management and Community Participation for Adaptation to Climate ChangeDiplomado – 2nd cohort	INTEC	29 (52% women)	120
October – December 2016	Land Use Planning & GIS for Climate Change Adaptation Diplomado	INTEC	34 (59% women)	120
November 2016	Introductory GIS Workshop for San Pedro de Macoris	USFS	11 (36% women)	8
November-December 2016; April 2017	Climate Change Adaptation for Resilient Development Workshop	INTEC	114 (48% women)	8
December 2016	Adaptation Measures & Climate Change Workshop	INTEC	73 (56% women)	8
December 2016	Hydrogeology Analysis & Climate Change Resilience Actions Workshop	INTEC	26 (77% women)	16

[4] G-12 is how MEPYD refers to the group of DR national government institutions with some mandate related to land-use planning and/or development. It is currently comprised of 19 institutions including the Ministries of Tourism, Public Works, Environment, Interior and Agriculture

Date	Training Title	Facilitator	Number of Participants	Hours in-classroom
May 2017	Inclusion of Vulnerable Groups to Climate Change Workshop	INTEC	88 (66% women)	8
May-July 2017	Resilience and Adaptation to Climate Change for Local Organizations in Santiago	CIDEL	25 (48% women)	40
June 2017	Gender and Climate Change Adaptation Workshops	INTEC	83 (55% women)	8
July 2017	Training workshop for the facilitators of the participatory budget process in Santiago	CIDEL	27 (61% women)	8
August 2017	Training workshop on resilience and adaptation to climate change for community promoters in Los Ríos	ATIDE	36 (47% women)	12
January 2018	Training of Trainers on the use of the Resource Notebook	ICF	16 (60% women)	12
TOTAL			766	992

CAPACITY EVALUATION OF THE FOUR MUNICIPAL GOVERNMENTS:

For the purpose of this specific capacity evaluation, we define capacity using five indicator categories. The methodology for this assessment has been harmonized with USAID's "GCC Capacity Assessment Tool" published in 2016[5]. Some indicators were selected from that toolkit while other indicators were selected that were relevant to the context of urban planning and climate change adaptation at the municipal level.

Governance: The political will of local leadership to advance a climate change adaptation (CCA) agenda and express it through the municipality's mission, objectives, plans and policies.

Professional Capacity: Municipal Staff's level of formal and continuing education relevant for land use and climate change adaptation planning, their level of experience, their knowledge of key national laws and policies applicable to their job functions, and their knowledge of climate change impacts affecting their city.

Data Access and Use: The municipality's access to planning support systems, including statistical, climate modeling, and geographic information systems software; as well as access to and reliability of socioeconomic survey data, maps, and climate information for integrated land use and adaptation planning.

[5] https://www.climatelinks.org/resources/global-climate-change-institutional-capacity-assessment

Resources for Planning: Establishment and/or availability of budgetary allocations necessary for integrated land use and climate change adaptation planning, including: software licenses, at least one staff member dedicated to mainstreaming climate change adaptation into municipal planning, and civic engagement.

Capacity for Participatory Planning: If the municipality has 1) identified vulnerable groups and/or zones; 2) established a platform for civil society to legitimately contribute to planning processes; 3) become familiar with risk reduction and adaptation measures implemented by vulnerable communities themselves; and if the municipality designates funding for joint adaptation actions with communities.

To measure each municipality's capacity in this context, we developed a survey instrument and key informant interview questionnaire for key municipal officials, including those working in urban planning, environmental management, budgeting, strategic planning and/or community engagement departments. The scoring methodology for each indicator is summarized below. A detailed description of the capacity assessment tool can be found in the January-March 2017 Quarterly Report for the Program.

Area 1: Governance

Low (1)	Basic (2)	Moderate (3)	Strong (4)
Has no mandate, mission, plan, resolution requiring adaptation actions Policies are not well known by the population, institutions, private sector and civil society Policies and Plans are not binding Low organizational structure and coordination for adaptation	Mandate / mission does not match well with program objectives Policies are not well known by the population, institutions, private sector and civil society Inconsistent priorities and strategies Organizational structure and coordination for adaptation exists but it is inadequate	The institution has clear mandate / mission, and harmonizes well with the objectives of the program Their policies are known by relevant institutions, the population, the private sector and civil society Adaptation mission is reflected in its policies with more consistency Organizational structure. and coordination for adaptation is adequate	The political commitment to CC adaptation is obvious in its policies, plans, strategies, etc. Policies are well known and accepted by the population, private sector and civil society Adaptation to the CC is well articulated in the key aspects of governance (policies, stages of plans, etc.) Organizational structure. and coordination for adaptation is strong

Area 2: Professional Capacity

Low (1)	Basic (2)	Moderate (3)	Strong (4)
No trained / educated personnel in LUP / climate change field No staff that knows the key laws, decrees etc. related to LUP and Climate Change Adaptation No staff that has basic knowledge of potential impacts on their city No personnel that has had training in the last 5 years in LUP and Climate Change Adaptation.	At least 1 person trained / educated in LUP / climate change field At least one staff that knows the key laws, decrees etc. related to LUP and Climate Change Adaptation At least one staff that has basic knowledge of potential impacts on their city At least one staff has had training in the last 5 years in LUP and Climate Change Adaptation.	More than 1 person trained / educated in LUP / climate change field More than one staff that knows the key laws, decrees etc. related to LUP and Climate Change Adaptation More than one staff that has basic knowledge of potential impacts on their city More than one staff has had training in the last 5 years in LUP and Climate Change Adaptation.	The majority (75%) of staff working in LUP and climate change adaptation are formally educated in those fields The majority (75%) of staff working in LUP and climate change adaptation knows the most important and relevant laws, decrees, etc. The majority of staff have basic knowledge of potential impacts in their city Most staff have had training in the last 5 years in LUP and Climate Change Adaptation.

Area 3: Access to and use of climate information

Low (1)	Basic (2)	Moderate (3)	Strong (4)
There is none or very little access to weather information, data and analysis Information is of low quality and is not trustworthy No data file system exists	Climate information is obsolete and in unsafe format (only 1 paper copy) Data do not have spatial and temporal components necessary to make decisions There is a data file system but there is inadequate availability	There is access to climate information, but it is not sustainable Quality of information is moderate and has sufficient spatial and temporal component to make decisions There is data file system and it is accessible to all relevant professionals	Information base is easy to access, high quality, and reliable Maintenance of information base is sustainable There is a data file system and it is accessible to all relevant professionals

Area 4: Access to planning tools

Low (1)	Basic (2)	Moderate (3)	Strong (4)
The city staff does not have at least one computer with statistical software and special mapping / analysis capability The quality of the software is not enough to create data needed to plan for adaptation. There are no funds allocated to obtain the necessary tools today or in the future (document, if possible, the reason)	At least one department in the municipality (preferably urban planning if it exists) has access to at least one computer with statistical software and spatial mapping / analysis capability The quality of the software is not enough to create data needed to plan for adaptation. Availability of funds to ensure access to tools is uncertain	More than one department in the municipality (preferably urban planning if it exists) has access to at least one computer with statistical software and spatial mapping / analysis capability The quality of the software is adequate to create basic data needed to plan for adaptation. Funds available to ensure access to tools for at least one year	At least one department in the municipality has access to more than one software license for statistics and special mapping / analysis, The quality of the software is optimal for planning for adaptation. (ArcGIS over QGIS, STATA / SPSS over R) Access to software is sustainable (the budget has funds to extend licenses for at least 4-5 years).

Area 5: Budgetary resources for adaptation

Low (1)	Basic (2)	Moderate (3)	Strong (4)
There are no staff assigned to achieve PMOT objectives and adaptation strategy, or staff has inadequate training The staffing plan does not have provisions to hire staff to achieve the objectives of the PMOT and adaptation strategy The budget does not have minimum funds to achieve the objectives and strategies established by its PMOT and adaptation strategy Sources of financing do not exist or are not reliable	There is at least 1 staff assigned to achieve PMOT objectives and adaptation strategy, and some have adequate training The staffing plan has the minimum programmed to achieve the objectives of the PMOT and adaptation strategy The budget has minimal funds to achieve the objectives and strategies established by its PMOT and adaptation strategy Financing sources are not reliable	There is more than 1 staff with training to achieve PMOT objectives and adaptation strategy The staffing plan includes provisions to hire enough staff to achieve PMOT objectives and adaptation strategy. The budget has modest funds to achieve the objectives and strategies established by its PMOT and adaptation strategy Sources of funding are adequate	There is a team with training to achieve PMOT objectives and adaptation strategy The staffing plan is programmed to achieve PMOT objectives and adaptation strategy. The budget has the necessary funds to achieve the objectives and strategies established by its PMOT and adaptation strategy Sources of funding are secure

Area 6: Participatory Planning Capacity

Low (1)	Basic (2)	Moderate (3)	Strong (4)
The local government has not formally identified and documented the communities and social or demographic groups most vulnerable to the negative impacts of climate change variability There are no platforms or protocols for community organizations, NGOs and vulnerable groups to legitimately participate in the PMOT process and other municipal planning processes. The municipality does not know the coping strategies used to adapt to climate change by the communities, including those used for disaster risk mitigation The municipality does not have sufficient resources in its plans to implement or scale interventions identified or taken by the communities	The local government has formally identified and documented a few of the communities and social or demographic groups most vulnerable to the negative impacts of climate change variability There is a platform and minimal protocols for community organizations, NGOs and vulnerable groups to legitimately participate in the PMOT process and other municipal planning processes. The municipality has identified at least one coping strategies used to adapt to climate change by the communities, including those used for disaster risk mitigation The municipality has basic resources in its plans to implement or scale interventions identified or taken by the communities	The local government has formally identified all known communities and social or demographic groups most vulnerable to the negative impacts of climate change variability and documented at least 50% of them. There is a platform and basic protocols for community organizations, NGOs and vulnerable groups to legitimately participate in the PMOT process and other municipal planning processes. The municipality has identified several strategies used to adapt to climate change by the communities, including those used for disaster risk mitigation The municipality has sufficient resources in its plans to implement or scale interventions identified or taken by the communities.	The local government has formally identified and documented all known communities and social or demographic groups most vulnerable to the negative impacts of climate change variability. There is a platform and robust protocols for community organizations, NGOs and vulnerable groups to legitimately participate in the PMOT process and other municipal planning processes. The municipality has incorporated the strategies used to adapt to climate change by the communities, including those used for disaster risk mitigation into its adaptation plan The municipality has multi-year provisions to fund and scale the implementation of interventions identified or taken by the communities.

FINDINGS OF THE FINAL INSTITUTIONAL CAPACITY ASSESSMENT

By: Joe Melara, Consultant

This section presents the findings of the USAID/ICMA Planning for Climate Adaptation Program program's internal evaluation of participant municipalities' capacity to assess and address climate risks. As mentioned in the overview of the evaluation methodology on page 5 (above), municipal capacity in the context of this program is evaluated using five categories, each with indicators determining the level of capacity from 1 (lowest) to four (highest). The five categories are 1) Governance, 2) Professional Capacity, 3) Data Access and Use, 4) Budgetary Resources for Planning, 5) Capacity for Participatory Planning.. In discussing the results, we try to avoid attribution error by analyzing other factors (besides USG support through the Planning for Climate Adaptation Program) that may have played a part in the specific score.

National District

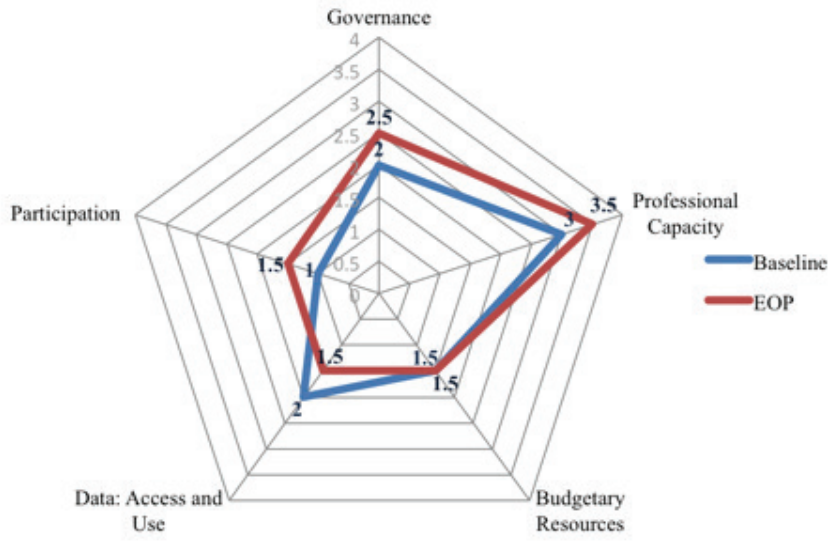


Figure 1. Capacity scores for National District at baseline and End of Program (EOP) evaluation.

For the National District, the Governance category score increased from 2 at baseline to 2.5 at EOP. This increase is attributed to a greater commitment to climate resilient land use planning as evident in the municipality's vision statement, objectives and the land use plan. The score for the Professional Capacity category has increased from 3 to 3.5. The Director of Urban Planning confirmed that staff were sent to training sessions offered by the USAID/ICMA Planning for Climate Adaptation Program and other programs, resulting in an increase of continuing education in planning and climate change adaptation for staff. All other indicator scores in this category remained the same since baseline. A ranking of 4 was not achieved because not all respondents in management reported an increase in their own continuing education.

The Budgetary Resources for Planning category remains with a score of 1.5 as it was at baseline. All respondents cited a lack of budgetary resources for a variety of needs related to planning, such as personnel, software license renewals and adaptation measures. Support for budgeting was not provided as part of the Planning for Climate Adaptation Program.

The Data Access and Use category score has reduced from a baseline of 2 to 1.5. The reduction in score is due mainly to feedback on this category given by the Policy and Planning Officer at the Urban Planning Department and the Disaster Risk Management Officer at the Environmental Management Department. The Policy and Officer indicated that while the USAID/ICMA Planning for Climate Adaptation Program and INTEC have provided them with very important information from their studies, the department remains too reliant on outside development assistance programs for obtaining data and they still struggle to institutionalize the process of building their own planning support systems. The same officer stated that the department still does not incorporate climate information into their analytics and it does not possess physical or digital maps such as zones vulnerable to floods and landslides, heat waves, environmental health hazards and climate change impacts. It should be noted that this officer was not fully interviewed at baseline; only some of her responses were recorded after referral from the Director of Urban Planning.

The Disaster Management Officer at the Environmental Management Department was surveyed at baseline but had only been on the job for 3 months. This officer's follow-up survey illustrated a considerably more sober perception of the institution´s environment for accessing and using data for planning. Aside from stating that the department had few maps and spatial data, he commented that a greater emphasis on "democratization of information" is needed – a point that the other respondents reiterated. Finally, all respondents for the National District commented that inter-institutional collaboration continues to be very problematic. In sum, while program support facilitated access to more information through its territorial diagnostic and climate vulnerability assessment, the findings do not present clear evidence that it facilitated improvement in capacity to access and use data for planning autonomously. It should be noted that the Program had very limited resources for this purpose as other projects within the CLIMA activity had this specific goal. That said, the results of the assessment clearly show that improving information access and ability to use data in decision-making remains a pending need for the National District.

The Capacity for Participatory Planning category increased in ranking from 1.0 at baseline to 1.5 due to the Director of Urban Planning's confirmation that vulnerable groups had been identified via the PMOT process. However, it must be noted that other respondents – including the Policy and Planning Officer at the same Urban Planning Department – indicated the contrary. This hints at the possibility that there is not full awareness among members of the technical team of the municipality of what planning information is available

Santiago

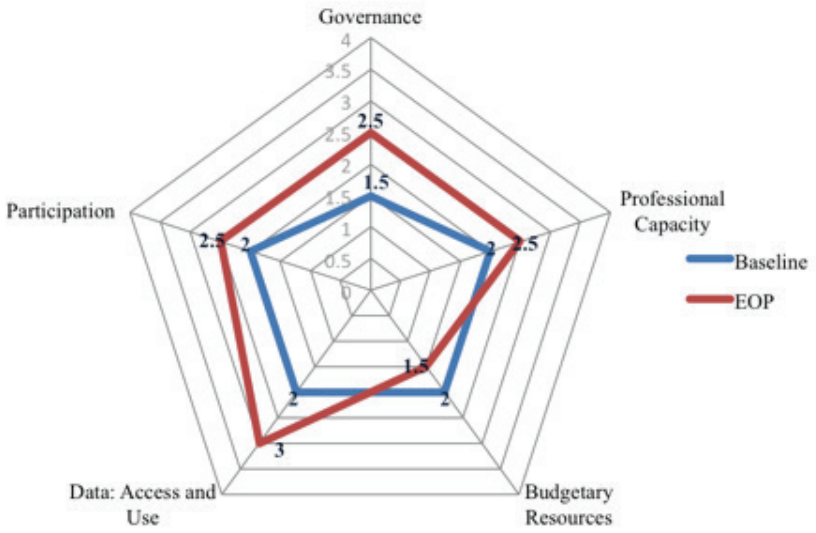


Figure 2. Capacity scores for Santiago at baseline and EOP evaluation.

For the city of Santiago, the score under the Governance category of the capacity assessment has increased from 2 at baseline to 2.5 as a result of better articulation of a climate change adaptation agenda into the municipality's mission through its plan and draft ordinance. However, respondents commented that awareness of climate change issues among political leadership and their will to champion the climate change adaptation agenda is still lukewarm; in other words, the climate change adaptation agenda is stronger with the leadership of the urban planning department but still lagging behind among political leadership. Further, the Director of Urban Planning indicated that awareness of the department's climate change adaptation agenda and related policies remains low among other institutions, including other branches of government, the private sector and civil society.

The score in the Professional Capacity category has increased from 2 at baseline to 2.5 due to improved continuing education of some staff members through trainings offered by the USAID/ICMA Planning for Climate Adaptation Program and other programs. In a matter related to the Professional Capacity category, the ranking for Budgetary Resources for Planning has decreased from 2 to 1.5. This decrease is due to indications from the Director of Urban Planning that the POT office is understaffed and that budgetary resources are insufficient for trainings and for implementing actions identified by the plans. It should be noted that as of time of the EOP, the Budget Officer was not available to respond to questions under this assessment category.

The Data Access and Use category has increased from 2 at baseline to 3 as a result of confirmation of existence of data management infrastructure, possession of nearly all relevant plans and maps, including climate information found in the climate vulnerability assessment, and public availability of key information. One factor for the increase in score is that Santiago is one of the most advanced among the cities in the program in making information accessible to the public. Worth noting, however, is that the respondents also reported problems with the reliability of information coming from other institutions.

The Capacity for Participatory Planning category increased in ranking from 2 to 2.5 due to confirmation from respondents that vulnerable groups have been identified and factored into the planning process via citizen consultation. The POT officer had attended citizen consultation workshops and reported a good working relationship with the juntas de vecinos, but was not aware of any risk-reducing or adaptation strategies used by communities to reduce their vulnerability; rather, he hinted at a dependence on the municipality to improve their adaptive capacity.

Las Terrenas

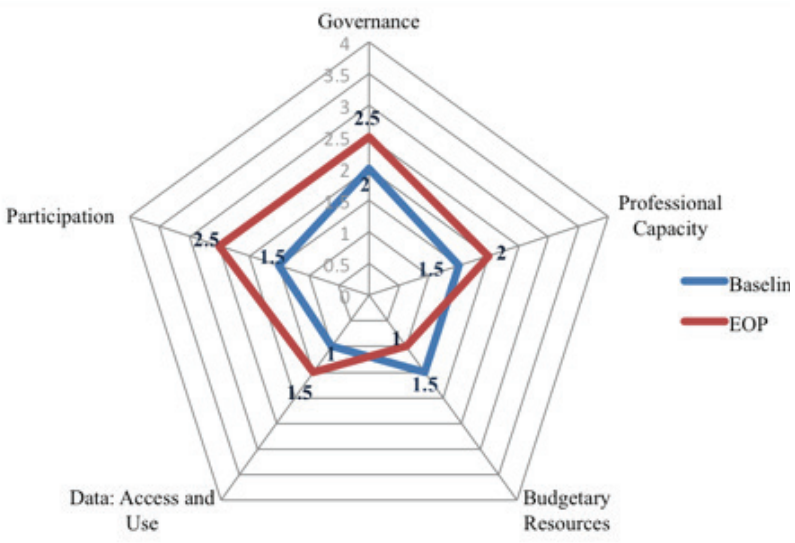


Figure 3. Capacity scores for Las Terrenas at baseline and EOP evaluation.

Before reporting the capacity assessment findings for Las Terrenas, it must be clarified that the municipality underwent recent changes in staff, including the Director of Planning and the Environmental Management Officer. Thus, the only respondent remaining from the original baseline assessment is the Budget Director. Of course, the change in personnel impacts the ability to conduct a comparative evaluation.

Under the Governance category, Las Terrenas received a score of 2.5, an increase over the baseline of 2. The increase is attributable to better articulation of a climate change adaptation agenda in its mission, plans and ordinance, as well as a perceived increase of political will for raising the relevance of climate change adaptation in the municipality's mandate. That said, the structural organization and coordination for adaptation remains weak, as evident in part by staff turnover. The Professional Capacity category score increased from a baseline of 1.5 to 2, based only the qualifications and continuing education (including trainings provided by the USAID/ICMA Planning for Climate Adaptation Program program) of the recently hired Director of Urban Planning r. That said, the Director of Urban Planning is the only municipal official tasked with spatial planning for the city.

The score under the Budgetary Resources for Planning category has decreased since baseline, from 1.5 to 1. The Budget Officer confirmed there are finances available for purchasing or renewing a GIS software license if necessary but confirmed there is no budgetary allocation for at least one staff member to conduct adaptation planning. She could not confirm there is a budget allocation for implementing the current adaptation plan. Both the Director of Urban Planning and the Environmental Planning Officer reported very poor resources available to conduct basic planning tasks. Neither reported having a workstation with a computer equipped with statistical, GIS or climate modeling software, implying that they rely on their own computer and software. Thus, it can be concluded that the municipality still possesses insufficient resources for land use and climate change adaptation planning. [6]

[6] At the close of the Project, Las Terrenas received office equipment and a computer to support the implementation of their land use plan.

The category of Data Access and Use received a score of 1.5, an increase from 1 at baseline. The increase is attributed to the municipality possessing data from the territorial diagnostic, climate vulnerability assessment and plans, which they did not have at baseline. However, per the Director of Urban Planning, the municipality does not conduct its own socioeconomic surveys and relies on other institutions and programs for nearly all of its data. When surveyed on availability of data within the municipality, the Environmental Management Officer's responses significantly contrasted with the Director of Urban Planning's responses. The former indicated that nearly no plans or data existed while the latter indicated that most of the data did exist. This contrast in responses likely points towards insufficient internal awareness and communication on what data is available at the municipality.

The category of Capacity for Participatory Planning received a score of 2.5, an increase from 1.5 at baseline. The increase is due to the following: 1) confirmation from the Director of Urban Planning that vulnerable groups have been identified, 2) awareness on the part of the Director of Urban Planning of risk reducing or coping strategies performed by communities, 3) reported improved working relationships with juntas de vecinos, and an increase in participatory planning workshops as a result of the PMOT process.

San Pedro de Macorís

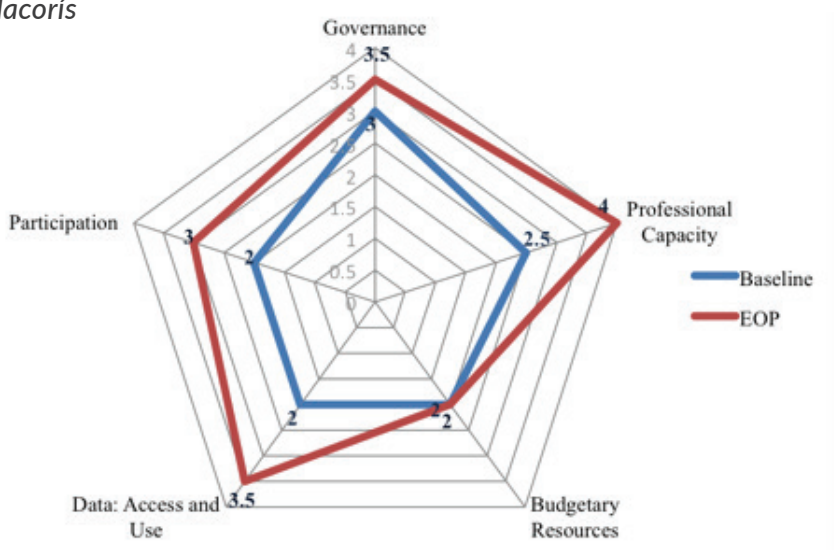


Figure 4. Capacity scores for San Pedro de Macorís at baseline and EOP evaluation.

San Pedro de Macorís received a score of 3.5 in the Governance category, up from the score of 3 at baseline. The increase is attributed to greater political will to advance the climate change adaptation agenda as evidenced in the municipality's mission, objectives and plans. In addition, per the respondents, the structural organization and coordination for adaptation management has improved. The remaining issue in the governance category is awareness of its adaptation agenda among other institutions, which appears to be slowly rising.

The Professional Capacity category received the highest possible mark, 4, an increase over the baseline score of 2.5. The increase in score is due to 1) all respondents having more than 5 years' experience working in municipal planning or management; 2) numerous municipal staff having attended trainings offered by ICMA and other programs, and 3) all respondents were knowledgeable about the laws and policies related to land use and adaptation planning, and also knew the specific climate change impacts facing the city.

The Budgetary Resources for Planning category received a score of 2, remaining the same as at baseline. While the Disaster Management Officer and Community Engagement Officers reported sufficient budgetary resources to implement the adaptation plan, the Director of Urban Planning reported having few resources; specifically, he indicated that his department does not have one workstation equipped with planning support systems hardware and does not have stable resources to implement the adaptation plan. As the Urban Planning Department is an essential actor to the PMOT and adaptation planning process, the Director of Urban Planning's responses were given more weight in the scoring.[7]

The Data Access and Use category received a score of 3.5, an increase from the score of 2 at baseline. The increase in score is attributed to a significant amassing of data, maps and plans enabled through the PMOT process and other sources. The Director of Urban Planning confirmed the department's possession of all relevant maps except for environmental health hazards, and confirmed it possessed all relevant plans including climate change adaptation and mitigation plans. The main remaining challenge under this category is access to workstations equipped with planning support systems.

The Capacity for Participatory Planning category received a score of 3, an increase from the score of 2 at baseline. The increase in score is attributed to 1) confirmation from respondents that vulnerable groups and zones have been identified, 2) a stronger collaborative relationship between the municipality and civil society as a result of the PMOT process, and 3) knowledge on the part of at least one official of risk reducing and/or adaptation strategies used by vulnerable communities.

[7] At the close of the project, San Pedro Macorís received office equipment and computers in support of its land use plan.

OVERALL EVALUATION OF PROGRAM IMPACT ON MUNICIPAL CAPACITY TO ASSESS AND ADDRESS CLIMATE RISKS

This section presents findings from the municipal capacity evaluation that applies to all cities participating in the USAID/ICMA Planning for Climate Adaptation Program.

1 Overall, the findings demonstrate that the USAID/ICMA Planning for Climate Adaptation Program has had a positive impact in each city in all categories except the Budgetary Resources for Planning category (as the program did not provide support in this area) and the Data Access and Use category in the case of the National District. All respondents in each city, except for one in Las Terrenas, have observed a significant improvement in how climate change adaptation was mainstreamed into the land use and municipal development plans, and attributed it to the PMOT process and support given by the USAID/ICMA Planning for Climate Adaptation Program and other CLIMA programs. The sole exception is the Environmental Management Officer for Las Terrenas, who had not observed such a difference in governance over the 4-month period he had held his position.

2 Program support has helped each municipality improve at least from a basic score to basic-moderate (2.5) in the Governance section. Respondents indicated the PMOT process helped increase emphasis on a climate change adaptation agenda and mainstream climate change adaptation considerations into land use planning. However, respondents in all cities reported that a considerable amount of work is needed to observe a strong level of awareness and commitment to a climate change adaptation agenda among political leadership. The fact that the findings show no improvement in Budgetary Resources for Planning – and in two cases a decrease in scores – indicates a lingering constraint in governance capacity in each city, but this area falls outside the scope of the program.

3 The Directors of Urban Planning in San Pedro de Macorís and the National District confirmed that the USAID/ICMA Planning for Climate Adaptation Program has had a positive impact on professional capacity building through its training workshops, working group and technical team meetings. Scores show at least a half-point increase in this category.

4 Results are mixed for the program's impact on improving the Data Access and Use category. At least one respondent in every city confirmed an improvement in access to information found in the territorial diagnostics, climate vulnerability assessments, land use and climate change adaptation plans; this is especially evident for San Pedro de Macorís and Las Terrenas. To a lesser but still significant degree, data availability has increased as evident in the creation of the climate change adaptation plans and PMOT processes in the National District and Santiago. However, respondents from all cities indicated that they still have problems securing even basic "raw" data at times, reflecting an ongoing silo effect in inter-institutional coordination between the municipalities and other governmental agencies.

There are four additional factors that impact this category: access to equipment; the degree to which municipalities can generate their own data for planning; weak flows of information between institutions; and scale of data (and, whether the data they need exists at all).

- **Poorly equipped support systems** - At least two respondents in every city indicated that their respective department's planning support systems remain poorly equipped. In the case of Las Terrenas and San Pedro Macorís, insufficient data management infrastructure (computer workstations with statistical, GIS, climate modeling software etc.) continues to be an issue. This is a challenge pertaining to budgeting and may indicate a symptom of insufficient decentralization of government funding, which is outside of the purview of the program. (It may also indicate that planning does not receive enough priority in the budget process).

- **Weak autonomy for data collection -** Planners in each city remain concerned with the degree of difficulty in institutionalizing the process of collecting and maintaining data for planning autonomously, for drafting and revising plans and as one National District official said, "everyday municipal management".

- **Fragmented information exchange -** Most respondents noted many cases where they knew where to find the data and submitted requests for them, but either never received the data or received it in an untimely manner. Of course, this reflects that information exchange between agencies remains problematic.

- **Lack of local-scale data -** Many respondents indicated that much data does not even exist at the spatial and temporal scales needed for planning at city and neighborhood levels. The USAID/ICMA Planning for Climate Adaptation Program experienced this issue with their own research and in some cases had to depend on proxy data for certain urban indicators for the territorial diagnostics.

5 With regard to the Capacity for Participatory Planning category, at least one respondent in the National District, Las Terrenas and San Pedro de Macorís indicated that groups and zones vulnerable to climate change-related risks were identified after initiation of the PMOT process implemented by the program. It is worth noting that vulnerable zones were identified more than vulnerable groups. No municipality indicated that they had identified vulnerable groups in vulnerable zones, i.e. people with compounded vulnerability to climate risks. Further, at least one respondent from the National District, Las Terrenas and San Pedro de Macoris had attended participatory planning workshops and/or community engagement events facilitated by the program or had sent representative to attend. Given that the same respondents had indicated at baseline that they had not attended community engagement events, their increased exposure to participatory planning processes can be attributed to program support. The Directors of Urban Planning in San Pedro de Macorís and Las Terrenas noted stronger relationships between their respective municipality and vulnerable communities as a result of the PMOT process implemented by the program. Thus, the findings confirm that dialogue for participatory planning between the municipality and vulnerable communities has also improved to varying degrees in each city as a result of program support. However, as the program has not been afforded sufficient time to monitor and evaluate structures of civic engagement after the completion of the land use and climate change adaptation plans, it cannot be assessed whether the improvements resulting from program support are institutionalized. Further, improved municipal capacity for participatory planning cannot be fully validated without feedback from members of the public who engaged in the activities.

6 While this capacity evaluation serves as an important method of determining how many participant municipalities have improved their capacity to assess and/or address climate change risks, it is not the only one to consider. It is very important to take these results into account alongside outcomes generated and reflected by outputs and outcomes of the planning process, which is reflected in the land use and climate change adaptation plans.