

Final Report

**Reconstruction Evaluation in the Dominican
Republic**

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Contents

Acronyms	ii
I. Introduction and Purpose of the Consultancy	1
II. Methodology	3
III. Description and Evaluation of the Four Approaches	5
A. The USAID-funded IRG Approach in Three Urban Neighborhoods	5
1. Description	5
2. Findings	6
B. FEMA/ADMD in the Southwest	7
1. Description	7
2. Findings	9
C. FEMA/ADMD in Haina	9
1. Description	9
2. Findings	10
D. IDB’s Citizen Education Plan for Disaster Prevention, Mitigation, and Response	12
IV. Best Practices, Lessons Learned, and Recommendations from the Four Approaches	13
A. Best Practices	13
B. Lessons Learned	15
C. Recommendations	18
D. Sustainability Issues	20
V. A Model Community-Based Project	21
A. Critical Success Factors	21
B. Outline for a Model Project	22
Bibliography	26
Tables	
1. Best Practices in the Four Approaches.....	13
2. Lessons Learned by the Four Approaches.....	15
3. Recommendations from the Four Approaches.....	18
4. Sustainability Issues Reported by the Four Approaches.....	20

Acronyms

ADMD	Dominican Association for Disaster Mitigation
CERTS	Community Emergency Management Teams
CBDPM	Community-based disaster preparedness and mitigation
DR	Dominican Republic
EOC	Emergency operations center
FEMA	Federal Emergency Management Agency
FTZ	Free trade zone
GODR	Government of the Dominican Republic
HEMP	Hazards and Effects Management Process
HUD	U.S. Department of Housing and Urban Development
IDB	Inter-American Development Bank
IDDI	Dominican Institute for Integrated Development
IRG	International Resources Group
JSI	John Snow International
NGO	Nongovernmental organization
SME	Small/medium enterprise
STP	Technical Secretariat of the Presidency
U.S.	United States of America
USACE	United States Army Corps of Engineers
USAID	United States Agency for International Development

I. Introduction and Purpose of the Consultancy

Hurricane Georges hit the Dominican Republic (DR) in September 1998 and caused considerable damage. As part of the U.S. government response, USAID/Dominican Republic allocated \$1.7 million to fund a disaster vulnerability reduction component as part of its Hurricane Georges reconstruction program. The Federal Emergency Management Agency (FEMA) received \$500,000 of additional funding to contribute to the Mission's Reconstruction Project Special Objective. That Special Objective was to "strengthen the capacity and readiness of national and indigenous partner nongovernmental and community-based organizations to help the population prepare for and cope with future disasters." USAID/Dominican Republic planned to reach this objective by supporting the initiatives of "nongovernmental organizations (NGOs), community-based organizations, multilateral and bilateral agencies, and the Government of the Dominican Republic (GODR)" during the two-year period of October 1999 to November 2001.

In March 2002, USAID/Dominican Republic requested International Resources Group (IRG) to undertake a qualitative evaluation of the four disaster mitigation approaches applied in the DR. In April 2002, IRG hired Dr. Elizabeth Adelski to perform the evaluation within a fifteen-day period, as determined by USAID.

USAID prioritized its support primarily to NGOs to work in the vulnerable communities that were severely-affected by Hurricane Georges. The NGOs worked to develop community capacity for disaster preparedness and mitigation through education and disaster-mitigation construction. The Dominican Association for Disaster Mitigation (ADMD), which is supported by USAID's Office of U.S. Foreign Disaster Assistance, had a major role in this arena as it worked with both the USAID Mission and FEMA projects. The Inter-American Development Bank (IDB) also contributed to educating the public about disaster awareness and preparation through its \$4.4 million loan to the GODR. USAID and the IDB funded four approaches to community-based disaster preparedness and mitigation (CBDPM) in urban and rural communities:

1. USAID contracted with IRG, whose local subcontractors, ADMD and the Dominican Institute for Integrated Development (IDDI), worked in three low-income, urban neighborhoods in Santo Domingo: La Zurza, Capotillo, and Simon Bolivar. Together these neighborhoods have a total of approximately 100,000 people and border the banks of the Ozana River, which makes them vulnerable to flooding;
2. FEMA and its local subcontractor ADMD worked in Haina, which was severely affected by the hurricane. Haina is a major port of entry for fuel and food, and has an industrial zone where many of the Dominican Republic's key industries and services are located, including a large oil refinery and the state's major electric plant. Approximately 300,000 people live in the area. FEMA and ADMD implemented "Project Impact" in Haina. Project Impact is designed to work through public/private community partnerships in order to identify potential hazards and to seek funding to mitigate them. Its objective is to prevent disasters from disrupting the communities' economic livelihoods. A variation of FEMA's American

model of the project was adapted to conditions in the DR and implemented in Haina's industrial zone, as well as some of its communities;

3. FEMA and ADMD also implemented Project Impact in some of the rural communities in the southwest, namely in the Tamayo - Vincente Nobles - Yaquimeyes areas. The target areas were medium-sized agricultural communities vulnerable to flooding due to their location on the banks of the Yaqui del Sur River. The population of this target area was estimated to be 60,000 people; and
4. The IDB's \$4.4 million loan funded a Citizen Education Plan for Disaster Prevention, Mitigation and Response. Its objective was to educate at least 50,000 people and train a sufficient number of trainers to continue the education plan in the long term. The project set up its support office in La Vega, north of Santo Domingo.

The purpose of this consultancy was to conduct a short, qualitative evaluation of these four disaster mitigation approaches. This purpose included three specific objectives:

1. To determine the critical factors that contributed to a successful community disaster-mitigation project;
2. To identify the projects' best practices, lessons learned, and critical sustainability issues; and
3. To outline critical successes of the community-based project strategy based on the information collected.

It is important to point out that this consultancy faced serious time constraints that curtailed the amount of information collected for the evaluation. The number of workdays in the DR was reduced from 12 to six, and the consultancy's timeframe was set during and after Easter Holy Week, when many people were not available for interviews. The consultant interviewed IDB staff about their education project, but due to lack of access to a key person, was unable to arrange interviews with the beneficiaries in the La Vega area. The information on the IDB project therefore is from the national-level staff only.

II. Methodology

A set of questions was formulated based on the information in the scope of work, and were used to guide all the interviews. Five separate focus groups were conducted with participants who represented seven different communities and three of the projects. The focus groups in the rural and urban communities consisted of members of the emergency committees that were constituted to work with the projects and non-committee community members. The groups included men, women, and youths. Focus groups were held with the following communities:

- FEMA/ADMD's project in the rural southwest: the rural community of Yaquimeyes; this group also included a representative from the community of Pescaderia;
- The USAID-funded IRG urban project: two separate focus groups were held in the urban neighborhoods of La Zurza and Capotillo, including representation from Simon Bolivar;
- FEMA/ADMD's "Project Impact" in Haina: five members of the Association of Industries and Factories of Haina, including the current president and vice-president, and the past president;
- FEMA/ADMD's "Project Impact" in Haina: the urban neighborhood of Bella Vista in Haina; and
- Two firemen and a project technician who worked with FEMA/ADMD's project in the southwest area of Banahoro.

Individual interviews were conducted with the following people:

- ADMD's and IDDI's project coordinators and several field staff;
- ADMD's and IDDI's directors;
- Mr. Eddy R. Matos Molina, the Director of Santo Domingo's Municipal Office for Emergency Management;
- Dr. Radhames Lora Salcedo, the Director of Civil Defense;
- Mr. Sergio Mora C., of the IDB's environment and disaster-prevention unit;
- Mr. Jose Alarcon Mella, of the IDB's Technical Secretariat of the Presidency;
- Mr. Rafael Alvarez Crespo, President of the Association of Industries and Factories of Haina, and several of his colleagues; and
- Mr. Glenn Wasek, Director of JSI's PROLOG project.

As noted above, time constraints limited the number of interviews that could be conducted. Unfortunately, the personnel in IDB's Technical Secretariat of the President's unit were not available in time to arrange interviews with their target population in La Vega. The information from the interviews on best practices, lessons learned, recommendations, and sustainability issues is summarized in the tables in Section IV below. The critical factors that contributed to successful projects, as reported by the interviewees, are listed in Section V.B.

III. Description and Evaluation of the Four Approaches

A. The USAID-funded IRG Approach in Three Urban Neighborhoods

1. Description

The USAID-funded IRG project was a two-year community disaster mitigation and preparedness project that contributed to the Mission's vulnerability reduction component of its Hurricane Georges Recovery and Reconstruction effort. IRG operated in collaboration with two local NGO subcontractors, ADMD and IDDI. USAID allocated a total of \$1.2 million for the project: \$650,000 for the two NGO partners, \$210,000 for the mitigation project costs, and \$440,000 for management and implementation. The project's objectives were:

- a) To assist the USAID Mission in devising and implementing a disaster mitigation strategy to reduce disaster vulnerability;
- b) To strengthen the capacity of communities to take action to protect themselves from potential effects of natural disasters through community organization and other technical assistance; and
- c) To strengthen the capacity of two NGO local partners to effectively plan and manage activities to help local populations prepare for and cope with future disasters.

The project worked in three low-income urban neighborhoods in Santo Domingo: La Zurza, Capotillo, and Simon Bolivar. There are approximately 100,000 people in the three neighborhoods. The neighborhoods border a narrow floodplain and are built on steep embankments that border the Isabela and Ozana rivers, which renders them vulnerable to landslides and damage from water and wind. Additional risk factors include poorly constructed housing on steep and unstable slopes, and the lack of basic infrastructure such as electricity, telephones, access to water, and adequate sanitation. The neighborhoods also are socially marginalized: they are essentially squatter settlements where guns, drug trafficking, gangs, and anti-government demonstrations are common. However, they are also politically active and of some interest to the GODR as they are a large voting constituency.

The IRG project used a bottom-up, participatory approach. It supported the organization of a multi-sectoral Disaster Mitigation Committee in each neighborhood, with two representatives from each of the neighborhoods' major organizations (mother's clubs, the local Red Cross, sports clubs, churches). This approach engaged the stakeholders as the committees "became the vehicle and structure through which the project worked." The active participation of local leaders, the fact that information at all stages and levels was shared with the communities, their participation in negotiating the technical solutions to their risks, and the committees' process of prioritizing community needs into feasible solutions that could be implemented within the project's time and funding limits all served to engage the communities in the project.

The communities participated in the technical studies conducted by the U.S. Army Core of Engineers (USACE) and the Department of Housing and Urban Development (HUD) that

identified the geological and hydrological risk factors they faced. USACE conducted a floodplain study of Santo Domingo's urban areas and HUD analyzed the soil conditions and slope stability in the target area. The USACE study was not completed on time to be used by the project. The HUD study produced hazard and risk maps that were the basis for prioritizing which of these risks/hazards the project would work toward eliminating or reducing, and for developing mitigation plans and project profiles. The communities chose to construct evacuation routes with the project as the first step toward reducing their vulnerability. Each community received up to \$70,000 in funds: \$5,000 for equipment for their rescue brigades and the rest to construct mitigation structures in high-risk areas. They had approximately six months to complete the construction.

IRG was also responsible for building its NGO partners' capacity to use the participatory approach to community development. IRG provided support and guidance on this approach but each NGO was responsible for training its own staff.

The project results were:

- Maps of slope stability and flood plain risk for the communities and the GODR;
- The establishment of a Disaster Mitigation Committee in each neighborhood, that continued to work with the GODR, IDB, and JSI after the project ended;
- The development of community disaster mitigation plans. These plans have been used to leverage funding from the GODR and IDB to continue constructing disaster-mitigation works in the communities;
- The development of sub-neighborhood response committees and contingency plans. ADMD worked with neighborhood groups to develop community emergency plans, conducted evacuation-route and security-brigade training for emergency response, and provided first aid training and basic first aid equipment;
- The construction of evacuation routes in all three communities;
- Leveraged funding from the GODR and IDB; and
- The development of a project model for disaster mitigation. The GODR is interested in replicating the project at the municipal and community levels. The communities have a successful model for working to reduce their vulnerability to disasters. IRG has a model for participatory community disaster mitigation that can be adapted to other contexts.

2. Findings

The IRG project was a resounding success, according to the community members and NGO staff who were interviewed. The community members, who were mainly members of the Disaster Mitigation Committees, were extremely positive, enthusiastic, and proud of their accomplishments and extremely motivated, optimistic, and organized about leveraging more funding to continue reducing disaster-vulnerability in their neighborhoods. Based on the entirely positive and enthusiastic evaluation of the project from a total of about 30 community

participants, it is fair to report that in their opinion it was a “Grade A” success. This does not mean that the participants did not point out the problems they ran into (and solved) and the negative “lessons learned” that produced their recommendations in Table 3 in Section IV below. Part of the project’s success obviously was that the community resolved the problems that it encountered, such as an engineer whose personality was not suited to the participatory approach or negotiating free community labor in the face of demands for payment. They learned a lot in the process, as they reported, and now are very motivated to continue the work. They also feel that they can serve as a good model and an inspiration to other urban neighborhoods because, as they said, “we made these positive changes in our communities ourselves and other barrios see that we did it with our own hands.”

The NGO project staff also reported that this approach was a real success. The consultant obtained more information from IDDI’s staff than ADMD’s, as IDDI continues working in the project areas with the follow-on funding from the GODR. IDDI also took the consultant to the focus groups in La Zurza and Capotillo. The director reported that there was “extraordinary enthusiasm” for this project among both staff and participants, and that it probably was the most successful project IDDI has ever implemented.

The specific practices that made IRG’s approach such a success are shown in Table 1 (best practices). The fact that seventy-five percent of the “best practices” reported by the four projects were from the IRG project participants is another clear indication of the project’s success. In the consultant’s opinion, based on comparing information from the interviews with all four projects, IRG’s approach was by far the most successful and is a good model for future projects. Note that this project is the **only one that leveraged funding** from the GODR and the IDB to build the disaster-mitigation structures that could not be completed with IRG’s project funds.

Four critical factors in this success were:

1. Jim Graham’s excellent vision for, and management of the bottom-up approach and community ownership of the project, as reported by the participants;
2. IDDI’s established presence and grassroots orientation to community development, in the consultant’s opinion;
3. Essential and very well-done training by ADMD, according to the participants; and
4. The concrete results of the project that the community reached—the risk and hazard maps, the soil survey, the mitigation structures—according to the participants. All of the critical factors for success that are listed in Section V.A. apply to the IRG project.

B. FEMA/ADMD in the Southwest

1. Description

FEMA’s “Project Impact” in the United States is based on the premise that disaster-mitigation solutions should be designed and implemented at the local level, with long-term support from the federal government. In the U.S., FEMA provides funds for community mitigation projects, which are used to leverage private- and public-sector participation and leadership to build more

disaster-resistant communities. FEMA brought this model to the DR in order to adapt it to a new context and to enable local communities to protect themselves from disaster. One modification was to incorporate preparedness into Project Impact in the DR due to the local governments' lack of emergency management capacity.

FEMA worked through ADMD to train staff in Project Impact strategies and to implement their approach in vulnerable rural communities. The advantages of working through ADMD were its knowledge of the DR, and its experience in disaster work. An additional advantage was the opportunity to increase its long-term disaster mitigation capabilities. ADMD received \$250,000 through a cooperative agreement with FEMA, at least \$100,000 of which was used for direct mitigation projects. The Project Impact funds were intended to leverage participation from the private and public sectors and communities.

ADMD, FEMA, and USAID/Dominican Republic identified the communities to participate in Project Impact. Each community completed three major steps during the project:

1. Held a Convening Session, in which potential partners identified local hazards and solutions, pledged support, and created community mitigation committees;
2. Wrote an Action Plan summarizing its hazards and vulnerabilities, and identifying the mitigation actions to be taken with seed funding and community participation; and
3. Implemented projects aimed at decreasing losses from future disasters.

U.S. Project Impact experts working in the DR urged participating communities to “use Project Impact funds to leverage their own programs, equipment and leadership in order to accomplish structural and non-structural projects as well as effective mitigation education to citizens.” The experts told participants that their levels of loss from disasters such as the recent hurricane were unacceptable and should be prevented or minimized, using Project Impact as a tool. Implementing Project Impact and mitigation initiatives would result in decreasing property damage, injuries, and deaths from disasters.

FEMA/ADMD worked in three rural communities in the southwest: Yaquimeyes, Tamayo, and Vincente Nobles. The communities are located on the banks of the Yaqui del Sur River and are vulnerable to flooding. The population of the target area is approximately 60,000. The project organized each community in blocks of 1-3 neighborhoods (*barrios*), depending on the neighborhoods' population. Each block formed an Emergency Committee of five people, and had 8-10 people trained in four areas of emergency response: first aid; search and rescue; fire control; and disaster mitigation and preparedness. The Emergency Committees provided each household in the community with educational materials and posters on how and when to evacuate after various disasters—earthquakes, floods, hurricanes. The communities posted signs identifying evacuation routes, shelters, and disaster-supply warehouses. Flood-markers were placed in the floodplain to show flood-depth levels (safe, time to evacuate, and flooding). FEMA also retrofitted two shelters or warehouses in each community.

2. Findings

Two types of project participants were interviewed about the FEMA/ADMD approach: community members in Yaquimeyes, including one person from Pescaderia, and ADMD staff. The community members' overall evaluation of the FEMA/ADMD approach was that the disaster-preparedness training was good, but only theoretical because they had no materials to implement it. They need radios and medical supplies, as well as a functional EOC for responding to disasters. The private sector did not contribute materially at all to the objective of improving local disaster response, although there are American companies in the region's free trade zone (FTZ). The respondents focused on their need for material assistance to retrofit their houses, for equipment so that they could apply their training, and help poor households that still have not recovered from Hurricane Georges. They also said that a project should "*arrancar con algo que queda en la comunidad*" (start with something concrete that stays in the community), execute something concrete that will inspire people.

The ADMD staff identified the weaknesses in the Project Impact approach. One was that the southwest is a poor region, and it is difficult or impossible for the target communities to raise funds for disaster-mitigation construction. These rural communities generally are poor and need to invest their labor first in supporting their households; they cannot afford to work without payment. The local GODR agencies that work in disaster response—Civil Defense, Red Cross, the fire brigades—are underfunded so they cannot provide funds either, only some training. The private sector in Banahoro is too small to contribute, and the companies in the FTZ talked about contributing funds or materials but never did so as it would not benefit them.

In summary, FEMA's Project Impact approach was not as effective or as popular as IRG's. It did not provide funding to enable the participants to construct disaster-mitigation works or to purchase the equipment necessary to apply their training. The respondents were not enthusiastic about the project. However, they appreciated the training, but they apparently saw the approach as incomplete because it did not help them generate concrete results. Another real constraint on this approach reported by the ADMD staff and the firemen in Banahoro was that this generally poor population has competing claims on its labor force to survive and feed its families, and, therefore, disaster preparedness is necessarily a lower priority. As a result, it is unrealistic to expect people to invest their labor in such a project without some form of compensation. Half wages, food for work, and materials to retrofit their houses were suggested. In addition, relying on private- and public-sector participation in the DR evidently is not a sound approach because the former is unable and/or unwilling to contribute, and the latter is underfunded. According to ADMD staff, the local Civil Defense staff also is "indifferent" to working on vulnerability reduction in the rural communities, partly due to their lack of funds and transportation.

C. FEMA/ADMD in Haina

1. Description

FEMA's "Project Impact" was also implemented in the Haina area of Santo Domingo, and worked with both the Haina Association of Industries and Factories and some neighboring communities. This urban component of Project Impact was based on the participation of several private sector partners through its collaboration with the industrial association. The association

has existed for about 20 years and has 65 members. The association was motivated to participate because many of the DR's critical businesses are located in Haina's port and industrial zone, including the country's major port, both of its electrical power plants, the only oil refinery, and several important chemical companies. The association recognized that an industrial accident or natural disaster would endanger the industrial zone and its neighborhoods, as well as the country.

However, the larger industries, which constitute only about 15% of all those in the industrial zone, took the lead in the project because they had the human resources to invest in it. The oil refinery had the most expertise in CBDPM, and therefore took a leading role in the project by providing ongoing training and leadership after it ended. According to the president of the industrial association, 85% of the industries in the zone are small or medium enterprises (SMEs) and half of those did not have the human or financial resources to participate in Project Impact or in the work the association was trying to complete afterwards. The SMEs need to use their resources to meet their production requirements, and therefore cannot invest in the less immediate need for CBDPM. Thus the SMEs are essentially in the same position as the poor rural population in the southwest – they need to invest their resources in taking care of their in-house needs first and do not have a ready surplus to invest in CBDPM. As a result, the big businesses shouldered the work of designing an emergency plan for the industrial zone and building CBDPM structures in the Haina neighborhoods.

There were two major project results: 1) Haina Industrial Association Disaster Plan; and 2) having instituted the Hazards and Effects Management Process (HEMP). The latter is a process in which businesses identify vulnerabilities, learn how to control their causes and effects, and develop and implement them. Five enterprises participated as a pilot-study for this process. As part of the project the association also developed an evacuation route; a hazardous materials transportation route; hosted workshops for training on first aid, search and rescue, and risk management; and developed and circulated the results of a vulnerability assessment for members of the industrial association.

Project Impact's objective at the community level in Haina was to identify the most vulnerable areas and then strengthen their infrastructure and the residents' CBDPM capacity. ADMD provided training and first-aid kits to the neighborhood groups, and FEMA and the industrial association invested in infrastructure to reduce local vulnerability. The latter consisted of reconstructing a school, building a bridge over a canal prone to flooding, and rehabilitating two canals.

2. Findings

This approach was more successful in the industrial zone than in the Haina neighborhoods. Overall the association officers were positive about the utility and impact of the project's training and its vulnerability analysis, which led to HEMP and an emergency plan for the industrial zone. They reported that this is the first time that any CBDPM work has succeeded, due to the businesses' awareness of the need for it, their organization, and FEMA's technical expertise and funding. The latter motivated Haina's municipalities and communities to participate. However, just as their rural counterparts reported, now they have a good emergency plan but they need more training (simulations) to familiarize themselves with it and practice response actions. They also have an EOC, but no funds for equipment such as radios, without which the plan remains

theoretical. The project ended before the CBDPM construction in the neighborhoods was finished and they need an additional \$23,000 to complete it. During the project, the association thus committed itself to work that they could not easily finish but must in order to avoid creating problems with the local residents. The officers said that the GODR does not provide them any funding for CBDPM.

Overall, Project Impact had a positive outcome in the industrial zone. Its training and technical expertise were much appreciated. However, the better-off, urban industrialists evidently face very similar constraints in implementing CBDPM work as their poorer rural counterparts. Both reported that they cannot count on funding from the GODR for CBDPM, that they lack sufficient human and financial resources to invest in it, and that external assistance—training and technical expertise as well as funding--was the catalyst for action. The fact that half of the SMEs in the industrial zone could not invest in CBDPM, and that the rural private sector cannot or does not either, is one weakness in the FEMA approach in the DR. According to the informants, its other major weakness is that the GODR does not customarily provide funding for CBDPM. The FEMA approach of leveraging private- and public-sector funding from its seed funds, therefore, was not effective in the DR.

Due to time constraints for the consultancy, only one focus-group interview was conducted in the Haina neighborhoods, and that information cannot be generalized to the other neighborhoods. The focus group consisted of the fifteen-member emergency committee. The interview was conducted in the Bella Vista neighborhood where Project Impact built a large concrete bridge over a canal. The canal is prone to flooding so the residents are vulnerable to being swept away or drowned, particularly children. The group said that they did not choose the bridge as their CBDPM structure; the Project did. The problem was that, following its approach to leverage public-sector participation, Project Impact got a commitment from the Haina municipality to complete the work. Six months after the bridge was built the municipality still had not graded or paved the dirt road leading to and from the bridge, resulting in a two-foot drop from the bridge to the road. The participants said that nothing ever should be left in the hands of politicians, who “talk and take no action.”

These committee members (youth, men, and women) attended three CBDPM training workshops, and were given a first aid kit and a video. Many other community members also learned about CBDPM. Their neighborhood should have formed emergency-response brigades, but the community member responsible for this task had not followed through. Nor did they write up an emergency plan in collaboration with the project. The Civil Defense volunteers on the committee contacted their central office and requested further training, but they have had no response. ADMD staff advised them to use their own resources to find support to continue their CBDPM work. The group stated that the neighborhood residents need more CBDPM training, practice sessions in emergency response, and help in organizing their political voice so that they have some influence with the municipality.

The Project Impact approach in Bella Vista was not a success. The residents apparently had little contact with the project except in the three training workshops. Local government has not yet honored its commitment to the community and Civil Defense has not responded to their request for training. The project did not engage the community in deciding what disaster-mitigation structure to build or in constructing it. Building community capacity to identify their

vulnerability and how to address it, evidently was not part of the project. In terms of people-level impact, this project was the diametric opposite of the IRG project. As one respondent said, “we are glad to have the bridge, but we still do not know how to organize ourselves to keep improving our neighborhood.”

D. IDB’s Citizen Education Plan for Disaster Prevention, Mitigation, and Response

The information about this approach is from IDB staff in Santo Domingo only. Unfortunately, a key IDB person was not available in time to set up an interview with the project participants in La Vega, so this approach can only be evaluated at a limited institutional level.

The IDB in the DR is working toward incorporating risk management into institutional reform, which means inserting CBDPM into government policy and into state agencies such as Education and Public Works. The overall goal is to promote the appropriate use of space in order to decrease damage from natural disasters, e.g. by eliminating construction on unstable slopes. This would help the DR to avoid getting indebted by repeatedly rebuilding vulnerable structures. The IDB has identified four critical factors in CBDPM: 1) the population’s lack of knowledge of how to respond to disasters; 2) lack of training in natural resource management; 3) lack of building codes/standards; and 4) lack of institutional development.

The IDB’s Prevention, Mitigation, and Response program is in the Technical Secretariat for the President (STP), which the IDB created. A pilot training program to address the first factor above was one component of this program. The training was given to approximately 50,000 people in a sample of urban and rural communities based on an analysis of the DR’s vulnerable areas. The project was oriented toward the provinces rather than the capital with the objective of generating a critical mass of trained people in each province. It consisted of 1-2 day courses, and involved state agencies such as Civil Defense and Public Works, as well as social groups such as churches.

According to the IDB staff, the project was participatory, and benefited from sufficient and timely resources. The training was cost-effective, and, in comparison to the IDB’s other projects, it was the least expensive and had the most impact. It also was effective in that the population internalized new disaster prevention, mitigation, and response concepts.

However, the IDB program as a whole encountered political obstacles that seriously constrained its viability, including its proposal to integrate CBDPM into the educational curriculum, and its follow-on program. According to the staff, the problem essentially was that the program did not have the support of high-level political decision-makers due to its conflict with the national Civil Defense agency. Lack of political support will constrain the institutionalization of CBDPM, IDB’s objective, and the program’s sustainability. The lesson learned, in terms of USAID’s future community-level projects, is that a bottom-up approach should be complemented by a top-down approach so that national policy and decision-makers support community-level CBDPM.

IV. Best Practices, Lessons Learned, and Recommendations from the Four Approaches

A. Best Practices

Table 1. Best Practices in the Four Approaches

<i>The USAID-funded IRG project in three urban barrios in Santo Domingo</i>
1. Work with NGOs that have long-term, continuing presence in the community: this is a good base to build on and saves time.
2. Provide the theoretical information about vulnerability and disaster mitigation first, through training, and implement the practical application of that training second, by constructing mitigation structures.
3. Support the community’s construction of concrete project outcomes such as disaster mitigation structures, because concrete, useful project results generate community self-confidence, pride, and the will to continue working.
4. The bottom-up approach in the urban communities was excellent: it gave project ownership to the communities and mobilized them.
5. The bottom-up approach allowed communities to make their own decisions about how to use project resources to decrease their vulnerability to disasters.
6. The multi-sectoral committees had representatives from all of the communities’ major social groups, were cohesive, and worked well.
7. There was good communication between the three multi-sectoral committees in the barrios; they shared methods and ideas, and pooled knowledge to get the work done.
8. Project objectives and methods were clearly defined, which helped mobilize people and decreased political infighting.
9. The risk maps were excellent for orienting the work and also as a tool to negotiate with the GODR against the forceful removal of people, as they showed where it was safe to build houses.
10. The clear-cut goal of saving lives catalyzed people and communities into action.
11. Building structures that improved community infrastructure useful for daily life as well as for disaster mitigation.
12. The project and international technicians collected and analyzed data, such as soil types and risk factors, in collaboration with the community and on site rather than by themselves and in their offices.
13. Communities learned to prioritize their needs because the project did not have enough funds to do all the necessary construction.
14. The training and construction of evacuation routes, and the integration of the community in both of those, built people’s confidence in their multi-sectoral committees and in themselves.

15. The project generated pride and confidence in the committees regarding their ability to accomplish useful work in the community.
16. The community, the NGO (IDDI), and USAID worked together in the design, planning, and execution of the project; it was “a marriage of three” that worked very well.
17. Allowing the project to charge IRG overhead provided financial flexibility and strengthened the NGO (IDDI).
18. People participated directly in the construction works that addressed their problems.
19. The project manager was an excellent resource and support for the community; the project was participatory due to his support.
20. Information was open and available to the community
21. The training was not just theoretical: the communities have the tools to implement it.
22. Ordinary people received training and knowledge to respond to an emergency, not just the community leaders.
23. “We learned about disaster mitigation and are well-prepared now: this project decreased our vulnerability. We have education and disaster mitigation construction now.”
24. Having the IRG manager in-country was useful; he was active and well-informed, and made corrections and modifications on time.
<i>FEMA/ADMD in Yaquimeyes and Pescaderia</i>
25. Having communities identify their risks stimulated them to action and made clear to them that they needed ongoing vulnerability reduction planning.
26. People learned how to respond to emergencies and take care of themselves in case of disaster.
<i>FEMA/ADMD in Haina</i>
27. The training and training materials were very good.
28. The combination of the factories’ human resources and FEMA’s technical expertise and funding made the project a success in Haina’s industrial zone.
29. The presence of external funding motivated municipalities and communities to participate in the project.
<i>GODR/IDB/STP</i>
30. The availability of resources in sufficient quantity and on time was a big advantage.
31. The work was participatory at all levels, from decision-makers to communities.
32. The training was cost-effective: it was the component that cost the least and had the most impact, in terms of educating people about disaster prevention, mitigation, and response.

B. Lessons Learned

Table 2. Lessons Learned by the Four Approaches

<i>The USAID-funded IRG project in three urban barrios in Santo Domingo</i>
1. Concrete project results, such as disaster mitigation structures, are one source of sustainability as they give communities the basis for seeking additional funding to continue the work.
2. Contributing to community disaster mitigation projects is one of people’s many survival activities. They have to work to support their families, so they need payment in some form for their labor: food for work, half wages, materials to repair their housing, or other types of payment in kind.
3. Better planning is necessary so that sufficient time and funds are available to finish the work planned during the life of the project.
4. This project created awareness in the GODR that people in poor barrios can coalesce around an issue and address it, using a technically sound method such as the bottom-up approach that is responsive and dynamic.
5. The private sector must benefit from working with the project, otherwise it will not get involved.
6. The project cannot expect the local private sector in a poor urban barrio to contribute to the project. The small and medium enterprises have 2-3 employees and are too small and poor to contribute, and the owners of the large enterprises do not live in the barrio.
7. It gives people confidence and satisfaction to know that they made positive changes in their communities and that they can do it themselves. And other barrios see that they did it with their own hands.
8. It is an ongoing effort to keep the projected oriented to the bottom-up approach and owned by the community.
9. Technicians such as engineers who work with the urban barrios need to have the experience and patience required to work in this context, where improvisation and patience are necessary to address the various problems that arise and to work with unskilled volunteer labor.
<i>FEMA/ADMD in Yaquimeyes and Pescaderia</i>
10. Contributing to community disaster mitigation projects is one of people’s many survival activities. They have to work to support their families, so they need payment in some form for their labor: food for work, half wages, materials to repair their housing, or other types of payment in kind.
11. Women participated equally in the project and are essential to its success, as they generally are at home to participate, whereas the men leave to seek work. This makes women available to assume positions of leadership and on committees.
12. One constraint on community participation is people’s lack of faith in state institutions that do nothing despite their political rhetoric. FEMA’s rural “Project Impact” was different because it produced results that built people’s confidence and drew their participation.
13. Having training without the resources to buy the equipment to implement it makes an emergency plan useless.

14. In large communities like Vincente Nobles, which has 13 barrios, each barrio needs a trained team so that there are enough trained people in the community.
15. One trainer can work in five rural communities and each one should have a motorcycle.
16. The southwest is a poor region and people cannot be expected to generate money for a project; they can give time and labor and some materials.
17. The international companies (American and Korean) in the free trade zone in the southwest said that they will contribute to the community projects but did nothing.
18. GODR agencies such as Civil Defense, the Red Cross, and fire-fighters lack the funds to do anything except train rural communities in disaster response. They do not have the funds to construct disaster mitigation structures.
19. Project participants need to work to support their families, so they need to be paid for their labor. They could be paid half wages, so their labor is a contribution to the community, or receive a benefit such as assistance to retrofit their homes.
20. The urban barrios have more resources than rural communities and also have established political contacts to support work toward change in their communities. They have access to the state agency that assists poor urban barrios, "PROCOMUNIDAD." Rural communities have fewer if any political contacts and no access to PROCOMUNIDAD.
21. Civil defense personnel in rural areas were not interested in participating in the project training until they saw that it was sufficiently high-level to increase their knowledge.
22. Rural project technicians can work effectively in 4-5 communities (not the 6-8 they had with the project).
23. Knowledge is the basis of change, so keep educating people about disaster prevention and preparedness.
<i>FEMA/ADMD in Haina</i>
24. The time and funds for the project were insufficient to finish the work that was planned.
25. More time is necessary to complete a project here due to lack of resources and GODR inefficiency.
26. The majority of the SMEs in the industrial zone do not have the resources to participate in a disaster preparedness project or the awareness to make an individual emergency plan. They need to be integrated into the process of disaster prevention planning through training, in order to increase their awareness.
27. Having training without the resources to buy the equipment to implement it makes an emergency plan useless.
28. Santo Domingo has a perfect emergency plan on paper but it does not exist materially: the teams are weak and exist only on paper.
29. Never leave construction work in the hands of the local politicians, who promise to finish them and never do.
30. The industrial zone's work with FEMA gave neighboring communities the basis for pressuring their local authorities to invest in disaster prevention and preparedness in the communities.

GODR/IDB/STP

31. The highest levels of political decision-makers must support a project in order to make it sustainable and politically viable. Without this support a project will not get far in terms of being institutionalized.

32. The bottom-up, grassroots approach must be complemented by a top-down approach, i.e. political support from high levels, for a project to be viable.

33. The IDB project is in the same position as it was two years ago: blocked by opposition at high political levels due to Civil Defense's links with the country's president.

34. Civil Defense has operational responsibility for disaster prevention, mitigation, and response, but only has the expertise to do the latter.

35. Ninety percent of the GODR institutions have neither the human resources nor the will to participate in the IDB project, including Civil Defense.

36. The national institutions' competition for power and resources and their lack of participation should be addressed with a project-specific institutional agreement.

37. The IDB needs institutional cooperation in order to insert disaster prevention, mitigation, and response into the Dominican Republic's development programs, and otherwise cannot continue funding.

C. Recommendations

Table 3. Recommendations from the Four Approaches

<i>The USAID-funded IRG project in three urban barrios in Santo Domingo</i>
1. Communities and NGOs should have a written agreement on institutional boundaries before the project begins.
2. The project should require the correct use and storage of the equipment given to the communities (computers, generators, refrigerators, inverters) for at least one year after the project in order to ensure that it will be used for its intended purpose and not stolen.
3. The project should employ a community person who is on site in each community to supervise, coordinate, keep people motivated, and negotiate with authorities. Otherwise the project coordinators are overloaded and running from site to site.
4. The project should have a regional office, e.g. in the southwest, rather than concentrating its resources in the capital, which requires staff to go to Santo Domingo to do their administrative work. The regional office should have internet communication with headquarters.
5. Project coordinators need assistants so that they can work effectively and have time to supervise.
6. The rural communities' emergency committees and brigades should work with Civil Defense but retain their independence, or they will come under its central control which will limit their ability to function. The justification is that this will ensure that the communities have "a voice, a presence," and are not absorbed by Civil Defense. Education and emergency preparedness materials should be controlled by community members so that they can take care of themselves rather than relying on an indifferent and underfunded bureaucracy such as Civil Defense.
7. Projects should be more decentralized, so that the community participates equally with the NGO and funding agency every step of the project, including administration and budgeting.
8. The project should give priority in hiring to qualified community members. Otherwise the NGO prioritizes its people so that its staff and technicians make the money that the community members could make.
9. There should be a review of the training themes and simulations using the mitigation construction works at the end of the project in order to practice disaster-response.
10. People from the level of rural communities to the national Civil Defense office should know how to manage the supplies that arrive after a disaster, using a computer tracking system (JSI).
11. Rural communities should have 2-3 more years of follow-on project support to keep people motivated and prepared.
12. The PROLOG project will require external resources to sustain it; the GODR has neither the tradition nor the resources to maintain an expensive package like that.

<i>FEMA/ADMD in Yaquimeyes and Pescaderia</i>
13. The project should begin by doing something concrete that will remain in the community, such as an Emergency Operations Center or building a shelter. This will serve as a model for other communities. Material products are as important as abstractions like training.
14. The rural communities in the southwest should have two more years of training and need to learn their emergency plans better by doing simulations.
15. Training on disaster mitigation and preparedness should continue in order to educate more people.
16. The highest-risk communities should be prioritized for long-term follow-up.
17. The rural communities should have equipment (medical supplies, radios) in order to use the training they received; otherwise they have only theoretical knowledge of how to respond to an emergency.
<i>FEMA/ADMD in Haina</i>
18. A project should only commit to what it has the capacity to finish.
19. "Refresher courses" should be given in the urban barrios 3-4 times per year in order to keep people aware and current; right before hurricane season is one appropriate time.
20. The city of Santo Domingo should create a computerized registry of people and their addresses who have had disaster preparedness training so that they can be located for additional training and in case of an emergency.
21. People should contribute labor and other local resources they have to disaster preparedness and mitigation; they need to get away from the tradition here of strong paternalism and gifts.
<i>GODR/IDB/STP</i>
22. The problem of the GODR institutions' lack of participation and competition should be addressed with a written agreement.
23. The project should support information-sharing among GODR institutions and with donors in order to eliminate the duplication of effort for profit.
24. A bottom-up approach should be complemented by political support from the highest level or the project will die.
<i>PROLOG Project, John Snow International</i>
25. More training of trainers is needed in order to educate more people about disaster mitigation and preparedness (JSI)
26. The GODR should implement the computer inventory control system of emergency supplies at the national level and not leave it only in the two model sites where it has been set up (JSI).

D. Sustainability Issues

Table 4. Sustainability Issues Reported by the Four Approaches

<i>The USAID-funded IRG project in three urban barrios in Santo Domingo</i>
1. The GODR and its agencies such as Civil Defense, the Red Cross, Public Works, and fire-fighters do not have the financial resources to continue or support disaster prevention/mitigation work. Note that this was reported by <u>all four projects</u> .
<i>FEMA/ADMD in Yaquimeyes and Pescaderia</i>
2. Civil Defense in Barahona (the southwest) will give weekly training to community volunteers picked by their communities.
3. There was minimal, if any, private sector participation in the southwest. World Vision said that it would try to provide tools and a Mexican company said that it would pick up garbage, but the international companies (American and Korean) in the free trade zone made no commitment.
4. Rural communities cannot keep themselves educated and motivated without support. The Dominican Agrarian Institute and Public Health should work with rural communities to provide ongoing support. How to provide this support essentially is a political question of how to work with rural and/or poor communities.
5. A project cannot expect poor people, such as those in the southwest, to contribute money to disaster mitigation/preparedness. It is only one of their many survival needs. Their immediate need is to feed their families.
6. “Why bring in US agencies such as FEMA and HUD, or other foreigners, if local expertise exists in the GODR agencies and NGOs? The Dominicans should manage their own affairs; foreigners do not understand our reality and their assistance is superficial.”
7. An additional 2-3 years of training and project support is necessary for sustainability. Technicians’ visits to rural communities could be twice per week for one year and then once per quarter.
<i>FEMA/ADMD in Haina</i>
8. The results of FEMA’s project in Haina’s industrial zone were a catalyst for the surrounding communities, who pressured their municipalities to do something about disaster preparedness for them also.
9. The Haina refinery, that has the most expertise in disaster prevention/mitigation in the industrial zone, is committed to providing training for other factories and to supporting the zone’s emergency committee.
10. “We are glad to have a bridge over the canal, but the politicians responsible for completing it take no action to do so, and the project personnel gave us three workshops, told us that we had to find our own resources to decrease our vulnerability to disasters, and left. We are poor and do not have the resources, a community organization, or a political voice to continue this work. We need help.”

V. A Model Community-Based Project

A. Critical Success Factors

The people interviewed for this evaluation cited the following factors as critical for a successful CBDPM project:

1. Project objectives and methods were clearly defined;
2. The bottom-up approach in the urban barrios, that was strongly supported by the IRG project manager, gave the community ownership of the project and mobilized people to participate;
3. It requires a continuous effort to keep the project oriented to the bottom-up approach and owned by the community, which the project manager did;
4. The community, the NGO, and USAID worked well together in the design, planning and execution of the project;
5. Women's participation in all aspects of the project, including leadership positions;
6. Not relying on municipal authorities or indifferent and under-funded bureaucracies such as Civil Defense to fund or promote the project;
7. The training workshops, communities' doing their own risk analyses, and communities participating in risk analyses such as the soil survey showed people clearly how they were vulnerable. The clear-cut project goal of saving lives catalyzed people into action and made clear to them that they needed vulnerability reduction planning;
8. The training and training materials were very good; ordinary people learned about disaster mitigation and are better able to respond now (i.e. non-committee members);
9. The combination of local human resources and external technical expertise and funding. The international technical assistance worked well with people and the project;
10. The communities' construction of disaster-mitigation structures, i.e. concrete and useful project results, mobilized people's participation and made them proud and enthusiastic about the project;
11. Concrete project results ("*ejemplos vivos*," i.e. disaster mitigation structures) are a source of sustainability as they give communities the basis for seeking additional funding to continue the work when the project ends; and
12. It gives people confidence and satisfaction to know that they made positive changes in their communities and that they can do it themselves. Furthermore, other barrios see that they did it with their own hands.

B. Outline for a Model Project

A model project based on the “best practices” and the lessons learned from the four approaches would have these characteristics:

1. Work through an NGO that has a long-term, continuing presence in the community. Ideally the NGO would continue working in the community after the project ends even if it was in a different sector;
2. Take a bottom-up approach in order to give the community ownership of the project, which mobilizes local participation. This includes decentralizing the project to the extent feasible so that the community has a role equal to the NGO and funding agency in the design, planning, and execution of the project. Information and decision-making on budgets, hiring, timelines, and administrative practices would be transparent and shared among the project’s three partners (community, NGO, funding agency);
3. Employ a project manager who has experience with and actively supports and promotes the bottom-up approach to community development;
4. Employ project technicians (e.g. engineers) who have the experience and personalities to work with grassroots development in poor urban or rural communities, where improvisation and patience are necessary to address the problems that arise;
5. Well-defined project objectives and methods are necessary to mobilize people and offset political infighting;
6. Allow the community to make its own decisions about how to use project resources to decrease their vulnerability, based on technical advice from the project. This builds negotiating skills and self-confidence in the community. It also makes them set priorities;
7. Provide the technical expertise for CBDPM that is not readily available from GODR institutions. FEMA’s expertise was much appreciated by Haina’s industrial association;
8. Building structures that serve the dual purpose of improving the infrastructure used in everyday daily life (stairs, walkways, drainage) as well as for CBDPM are doubly useful and much appreciated by the community;
9. Foster good communication between the community and its committee, and between the different barrios’ committees in urban settings;
10. Provide CBDPM training for “ordinary people,” not just for community leaders, so that more people participate in the project and learn how to respond to an emergency. In large communities such as Vincente Nobles, which has 13 barrios, training should be given to a cadre of community members in each barrio. The SMEs in Haina’s industrial zone need to be motivated to participate in CBDPM training;

11. Program time and funds so that the project work is finished during the life of the project. The experience with the previous four projects that reportedly had “too much to do in too little time” provides one basis for better programming;
12. Collaborate with the appropriate GODR institutions (Civil Defense, Red Cross, Public Works) at the local and regional levels from the beginning of the project in order to engage them in the project, build their capacity through training, and promote the project’s sustainability by having them remain as the community’s partners when the project ends. Competition with these institutions, including building parallel systems to compensate for their lack of capacity or leaving them out of the project, is not politically viable;
13. Implement JSI’s computer inventory control system of emergency supplies at the regional- and local-levels where the project operates;
14. Include a “top-down” component or a complementary project that works with the national-level, political decision-makers whose support, including policy design, will support the planned community-level changes. This component also could include capacity-building for the GODR institutions that ultimately are responsible for CBDPM in their country (such as Civil Defense, Red Cross, Public Health, Public Works);
15. Recognize that the GODR and its institutions, particularly at the local level, generally do not have sufficient financial resources to participate in and sustain CBDPM work. The project, therefore, will need a budget to support their participation;
16. Recognize that the GODR and its institutions may lack the technical expertise to design, plan, and execute community-level CBDPM projects. The top-down project component therefore may need to include technical capacity-building;
17. Recognize that the poor are the most vulnerable to disasters and have the least resources to invest in prevention and mitigation. In general they are vulnerable due to their lack of resources and inadequate housing. Their time and money are necessarily invested in the immediate need of supporting their households, before they can afford to invest in longer-term needs such as CBDPM. Some form of compensation for investing their labor in CBDPM—half wages, food for work, materials and training to retrofit their homes—is necessary to enable the poor to participate fully in a project. Project technicians and coordinators (and participants) reported that this is particularly true in the southwest, that is a poor region;
18. Take into account the differences between working with the urban poor in Santo Domingo and the rural poor. The former are more likely to have functional community organizations (women’s groups, sanitation groups); political savvy and a political voice; access to “PROCOMUNIDAD,” a state agency that works with poor urban barrios; and greater access to active NGOs and services than rural communities. Poor rural communities generally have less access to services and a less effective political voice. These differences require that the project is designed to have an “urban model” and a “rural model;”
19. Geographical location is another important factor in the urban communities’ favor: they are easier for projects to reach than the more distant and often isolated rural communities.

Project personnel reported that the last communities to be considered for the projects and the first to be dropped by technicians are the rural communities that are difficult to reach due to distance and poor roads. This bias can be addressed by: a) establishing regional project offices with internet communication to headquarters, so that project personnel are required to make minimal trips to the capital; b) decreasing technicians' workload to 4-5 communities; c) providing a motorcycle for each technician; and d) providing a pickup truck for the regional office;

20. Women are key actors in CBDPM projects and reportedly participated equally in all project activities, including holding management and decision-making positions on community committees. In the southwest their participation was said to be a key factor in the project's success, because the men are primarily occupied in working to support their families and often emigrate. This leaves the women on-site and with the time to manage/participate in the project;
21. Have sufficient numbers and levels of staff for the project's workload. The project coordinators need assistants, to whom they can delegate non-supervisory work. One trainer can work in a maximum of 4-5 rural communities and each trainer needs his/her own motorcycle. The project also should employ one staff member, or a community member, in each community as the local project representative. This person would be the first liaison between the community and the project and would be responsible for supervising the project on-site;
22. Engage community members in the collection and analysis of data in their neighborhoods (soil surveys, risk assessments, community maps) that will be used to assess their vulnerability and plan how to reduce it;
23. Provide the theoretical information about vulnerability and CBDPM first, through training, and then support the community's practical application of what it learned. Teaching people about their vulnerability and having them participate in mapping their risks catalyzes them into action. This includes the enterprises in Haina's industrial zone, particularly the SMEs whose lack of awareness of vulnerability and CBDPM contributes to their lack of planning.

The "practical application" of community training includes building concrete products such as evacuation routes, shelters, water-control structures, an EOC, or buying equipment (radios, ambulance, medical supplies). Concrete project results were reported to be a source of great pride and motivation to the urban communities that built them, and a desirable project outcome in the rural communities that did not. Another option is to help a community organize to purchase the equipment it needs for emergency-response. Otherwise, as people from the rural communities to the Haina industrial association reported, their response exists only on paper;

24. Employ community labor as much as possible, including women and skilled labor;
25. Do not count on contributions in cash or kind from the local private sector, particularly in poor communities. The private sector in these communities generally cannot afford to participate and therefore is not interested unless it also benefits from the project. This is also

true of the SMEs in Haina's industrial zone, who have very limited if any human resources or funds to invest in CBDPM. Even the American and Korean companies in the free trade zone in the southwest did not contribute materially to the project;

26. Review the training topics and organize several emergency-response simulations in each community before the project ends, so that people know their emergency plan from practice;
27. One year of limited project follow-on support will contribute to sustainability by helping communities to stay motivated and organized. It also can help them seek additional funding from other sources for continuing their CBDPM construction works or for buying equipment;
28. Engage GODR agencies such as Civil Defense and Public Works to continue providing training and technical support to the communities when the project ends, in order to promote sustainability;
29. Make a written agreement between the community committees and the project that makes the former responsible for the proper storage and use of any equipment (computers, generators, medical supplies) donated by the project for at least one year;
30. Set up "community to community" and "committee to committee" visits that allow the project participants to show non-project communities how they have organized and what they have learned and built for CBDPM. The committees in the urban barrios of Santo Domingo felt that their CBDPM structures and the fact that the communities themselves built them would be an excellent model for other barrios;
31. Work with Civil Defense to train a cadre of community members as trainers, so that "ordinary" local people can be employed to continue educating the public about CBDPM. The community members in the urban barrios are interested in working as trainers and, as two ADMD project coordinators said, community people generally are more concerned about their neighbors than the underpaid Civil Defense staff. However, every effort should be made to train and work with Civil Defense; and
32. Do not count on local authorities to have the funds or interest to contribute to the project without a written agreement and project support. Neither rural nor urban communities have confidence in these authorities; the consensus is that their political rhetoric does not produce concrete results. The municipality of Haina still has not completed the bridge that the FEMA project built in the Bella Vista barrio.

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