ADMD/IRG/USAID Project Case Study

ADMD - IRG: Post Hurricane Georges Recovery and Future Disaster Mitigation for High Risk Communities in the Dominican Republic via Community Prevention, Mitigation and Preparedness Training

August 1, 2000 – September 30, 2001.

Problem Description:

Geographically, the Dominican Republic is located in the habitual path of hurricanes and tropical storms and is therefore subject to recurrent flooding, landslides and severe wind damage including tornado formation. Other serious threats include earthquakes (an average of 1 measuring 8.0 or above on the Richter scale every 100 years, with those of lesser magnitudes occurring more frequently), tsunamis (also averaging one every century), hale, fires, droughts and lightning.

The passage of Hurricane Georges on September 22, 1998 demonstrated the vulnerability of the Dominican Republic to flooding, landslides and isolation of communities. In addition, the lack of information available to the communities and the lack of multi-sectoral coordinating bodies at regional and local levels hindered the preparedness for, and response to, the hurricane. The extent of the damage of this Category 2 hurricane in Santo Domingo illustrates the exposure of communities, infrastructure and businesses to floods and wind damage. Particularly at risk are populations occupying river banks, drainage gullies and flood plains down-stream from dams. The lack of awareness by sectoral representatives of the risks and potential impacts as well as the disorganization of the communities resulted in an inadequate preparation and response to the hurricane which contributed to the loss of life and property attributed to the passage of Hurricane Georges. The communities in these high risk areas must be taught how to protect themselves.

Project Justification:

Seventy high risk communities that were affected by Hurricane Georges in September of 1998 were selected for training based on vulnerability and willingness to participate in long-term preparedness and mitigation efforts. Three pilot areas and two additional project implementation

areas which were selected for this project illustrate the weaknesses described above, as is evidenced by the impact of Hurricane Georges. The first pilot area includes three slums along the Isabela-Ozama River such as La Zurza, Capotillo and Simón Bolívar which are ¨self-built¨ low income communities with an estimated total population of 142,000. The inhabitants have perched their dwellings on unstable slopes or in the flood plane and are threatened by erosion and landslide hazards. Flooding is another serious and constant reality due not only to the fact that each slum is right on the river bank and is also surrounded by a number of drainage gullies. These are often clogged with garbage and decomposing materials and also serve to drain sewage into the river. The slope approaching the river is so steep that the inhabitants must transport everything on foot or with ropes and pulleys. The power lines installed illegally and haphazardly are unable to withstand hurricane force winds or seismic forces and are a latent fire hazard to these communities.

The second pilot area selected is the Haina port region in Santo Domingo where there is a civilian population of approximately 200,000 and an estimated total day-time population of 300,000. The industrial community includes two Free Enterprise Zones; chemical factories; warehouses for fertilizers, chemicals; manufacturers of plastics, paints and pharmaceutical products; various gas companies; the electric company; the petroleum refinery (REFIDOMSA), and the Canadian mining concern, Falconbridge Dominicana. Another important fact is that there is an off-shore fuel intake pipe 2 km.´s off the coast of Palenque which extends into Santo Domingo at the Haina port. This system continues along the Santo Domingo coastline to the San Soucí port at the mouth of the Ozama river. Numerous shipping firms occupy the Haina port and the majority depend on the primary, government owned crane which loads and unloads at least 70% all cargo in the D.R. and which is only anchored to withstand Category 3 strength winds. Also, all fuel must come through the Haina Port. There are, on average, 2,500 containers in the area, which could become airborne during a Category 4 hurricane (as happened during Hurricane David in 1979). In addition, Haina is constantly subjected to flooding due to lack of adequate drainage and some new construction is taking place on unstable slopes as well as on land- fill close to existing drainage gullies. This high risk setting has little emergency prevention, mitigation, preparedness and response capacity (fire department, Civil Defense, Red Cross, Ambulances are very limited). Thus, another major hurricane (like Hurricane David) could render the port inoperable and cause major economic, environmental, contamination and public health problems. The community based activities in the Haina pilot area will complement FEMA´s implementation of Project Impact in this area through the ADMD. This project assisted with the inclusion of a preparedness component in Haina´s disaster prevention/mitigation plan.

The third pilot area lies in the Dominican Republic´s southwest and along the Tamayo/Vicente Noble/Jaquimeyes axis. It is a heavily damaged area of medium size agricultural communities situated on the flood plane of the Yaque del Sur River, the Project´s priority river basin, and remains vulnerable to flooding. The estimated population of this target area is 60,000. Due to the importance of farming in the area and the scarcity of water, the up-stream rice growers demand that the dams be kept at least 85% to 95% full to assure the water they will need in order to plant and attend to their crops. Unfortunately the Sabaneta and Sabana Yegua dams, could not be let out during the passage of Hurricane Georges and the precipitation accompanying the hurricane over the western portion of the Dominican Republic overwhelmed the dams´ capacity and the spill-over point

was reached. Unfortunately, the flood waters found rapid access to the communities via the irrigation system. This issue will have to be studied to assist the community in deciding which solution is most viable to prevent this tragedy from recurring. The communities have witnessed at least three other similar flood events in the last 120 years and know they are at risk. Therefore, since relocation is not a possibility for those in the flood plain, then effective early warning and evacuation capabilities are crucial to prevent such tragic loss in a future event. Also these communities must have an effective security brigade that will stay behind and prevent looting. The women, children and elderly who will be moved to shelters must learn how to group themselves in the shelters to prevent rape and other forms of violence. The community based activities in the Tamayo/Vicente Noble/Jaquimeyes pilot area complemented FEMA´s implementation of Project Impact in this area through the ADMD. This project assisted with the inclusion of a preparedness component in Tamayo´s disaster prevention/mitigation plan.

In addition to the three pilot areas, the ADMD worked in targeted communities in the southwest and southeast currently participating in the USAID sponsored housing and water and sanitation projects in areas heavily affected by the passage of Hurricane Georges.

Results:

Regarding the Community Disaster Preparedness Workshops, a total of 75 were given during the project to a total of 82 communities (twelve more than the 70 stated in the contract). An additional five workshops were given to communities in the Barahona Province participating in the FEMA/ADMD Project Impact activities. A total of 1,938 people - of which1,196 were women, 552 were men and over 190 were not classified by gender - participated nationwide. The primary products of this round of training at the community level was the gathering of basic information about each community; the community's identification of local hazards, risks and vulnerabilities; and the formation of a Community Emergency Committee and the development of a Community Emergency Plan.

The second main topic developed during the course of the project centered around the Evacuation Routes and Security Brigades Course which was developed by the ADMD staff in January and given February 10 and 11 to a total of 35 community leaders selected by the CEC's so that they could assist ADMD facilitators in implementing the training in their respective communities. From February through June, a total of 55 Evacuation Routes and Security Brigades workshops were given in which a total of 69 communities participated (however, we know more communities participated and that their representatives did not state what communities they were from on the attendance list). In all, 1,203 community leaders participated, of which 629 were women, 447 were men, and 127 did not specify gender in the four facilitator training workshops given during the project.

In June and July of 2001 the ADMD requested and obtained permission from IRG, after obtaining a no-cost extension through the end of August for the project, to redesignate available project funds from categories such as transportation and per diem to the materials category in order to purchase and minimally provide identification for 70 CEC's and basic equipment for

their brigade members such as the following:

- A first aid kit with supplies for 50 people;
- A wooden trauma stretcher;
- One blanket (to cover the victim on the stretcher);
- 12 vests for the response brigade members;
- One Pick-hoe;
- One Shovel;
- One Axe;
- 150 feet of nylon cord;
- One video tape (for the communities that have electricity) with educational material regarding hurricanes, earthquakes, fire prevention and first aid.
- One binder with printed educational and reference information on disaster prevention and mitigation;
- One certificate notifying the formation of the Community Emergency Committee and its participation in the Community Education Program sponsored by the IRG/USAID/ADMD project.
- Membership badges for the Committee members
- One copy of the emergency plan and the community registration form of that community

The CEC's signed a donation release form which detailed the items received, their responsibility for its care and appropriate use. To accompany and assure optimal use of the donation the ADMD gave a total of 2 training courses in First Aid to a total of 53 people, of which 31 were women and 22 were men, which represented 68 of the 70 communities that were invited to attend.

During project implementation a number of visits, meetings and activities were scheduled and carried out by the ADMD project facilitators. A total of 819 meetings were held to coordinate, plan and follow up on CEC activities in the communities. In addition, a total of 17 presentations on hurricanes and earthquakes were given; 4 communities pruned back tree limbs away from power lines; 5 communities cleaned streets and streams/ditches; and several CEĆs waged orientational campaigns. Although there are no precise data regarding the number of participants in these activities, we know it is well over 500. However, we have been able to confirm that 470, of which 209 were women and 269 were men, did take part.

All of the CEĆs were encouraged to hold meetings with the Provincial Directors of Civil Defense, Red Cross, Fire Department and related authorities of Barahona, Azua, San Juan de la Maguana, San Pedro de Macorís, and Haina - to introduce their CEC representatives, explain the work done, the information available regarding their communities and garner the authoritieś integration and support of their work. More specifically, the meetings were focused on establishing working relationships to facilitate pre and post-disaster preparations and response. The authorities were present for similar activities in the Santo Domingo, Tamayo and Boca de Yuma project areas.

As part of the agreement, ADMD promoted the program through donated media time. A total of 11 television programs for a total of 387 minutes and 13 radio programs for a total of 740 minutes and a half page article in the Listín Diario, as well as a one page article in the El Caribe newspaper were donated to describe and promote the ADMD/IRG project. In addition, the ADMD was included in an earthquake awareness campaign sponsored by the Compañía Nacional de Seguros, motivated by the Salvadoran earthquakes. These donations were worth approximately US$281,143 (almost twice the US$**145,465 project budget)**, which was not previously budgeted in the estimate of community counterpart contributions but was a welcome additional support to the ADMD/IRG/USAID Project activities in the Dominican Republic.

In conclusion, the ADMD was able to meet and surpass all project/contract related targets. The ADMD wishes to thank the IRG staff for their experience, assistance and cooperation to assure the successful implementation of the project. In addition, the ADMD is proud to announce that OFDA has approved and initiated a 12-month follow on project for 16 of the 82 communities, in two of the provinces involved in the US$72,000 USAID/OFDA/IRG/ADMD project which entails the design and implementation of an exercise to put the CEC emergency plans into practice and to implement mitigative measures for housing, retrofitting at least 2 community structures as examples of the techniques so that they may withstand hurricane force winds and serve as shelters in the event of a disaster. The ADMD also would like to impress on the donor community and governments world wide, the importance of long-term continued technical assistance for the communities regarding disaster mitigation and preparedness to guarantee that the communities will dedicate some of their time and attention to these matters consistently, thus greatly reducing the damages and losses possible instead of continuing to suffer ever increasing losses and improvising a hasty and ill-structured response to each subsecuent emergency or disaster.