



Demining Efforts in Central America Get Caught in the Hurricane Mitch Jet Stream

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In October–November 1998, Hurricane Mitch wreaked havoc upon the Caribbean and parts of Central America. The damage the storm produced was unprecedented in the affected areas. In Honduras, Guatemala, Nicaragua, El Salvador and Costa Rica, UNICEF compiled these estimates on the human toll: 8,421 killed, 7,671 missing, 10,190 wounded, 1,537,687 evacuated and left homeless and 1,654,000 more affected in some direct way. Furthermore, Hurricane Mitch caused six billion dollars worth of damage to the infrastructure of these countries.

Impact on Demining Operations

Another effect of Hurricane Mitch was felt by the Demining Assistance Program in Central America (PADCA) of the Organization of American States (OAS) in Guatemala, Nicaragua, Honduras and Costa Rica. Operations in these countries were halted for about a month while national and international resources and efforts were directed towards immediate relief issues. In Costa Rica and Guatemala, the damage caused by Hurricane Mitch was neither severe nor long-term. Although the planned initiation of demining operations in Guatemala was delayed temporarily by the passage of Mitch, they began shortly thereafter on December 7, 1998. Costa Rica's operations were paralyzed, but it appears that Hurricane Mitch's effects were more logistic than practical. Unfortunately, this was not the case in Honduras and Nicaragua where the damage was more severe.

In Honduras and Nicaragua, demining operations were halted due to the immediate need to divert demining support equipment, such as helicopters and troops, for immediate relief efforts. Hurricane Mitch caused widespread damage to the infrastructure of these two countries—many bridges and roads were completely destroyed. In addition, heavy rains caused by the storm dis-

placed landmines in both countries from their original locations.

In Honduras, essential demining and support equipment was lost due to the flooding of the Coco River located near the Honduran support base. However, Honduras suffered no long-term consequences. The essential equipment lost in this country was quickly replaced and the troops reinitiated operations.

Nicaragua suffered the most damage, as Hurricane Mitch ravaged through the Honduran border and proceeded to the center of the country. Although Nicaragua suffered no equipment loss, its problem with displaced mines was greater. Days after the

A child walks in a flooded street in La Ceiba, on the north central coast of Honduras, as Hurricane Mitch, the most powerful hurricane in a decade to hit Central America, moved in.

Photo c/o AP/Victor R. Caivano



storm, five civilian mine incidents were blamed on mine displacement. Consequently, the destruction of Hurricane Mitch and the debris left on the ground caused a reevaluation of the program and extended the time required for completing the mine-clearing initiative.

Nicaragua's Request

Because of the surplus of displaced mines and general damage to the infrastructure around the country, the Nicaraguan government requested OAS assistance. They asked that the OAS suspend its plans to initiate demining operations along the Honduran border in order to focus on immediate reconstruction needs. In order to eliminate the new hazard of mines from previously mine-free areas and permit relief and reconstruction efforts to go forward, demining activities would be carried out in coordination with reconstruction support provided by donor countries. The Nicaraguan government specifically requested the development of an emergency demining plan to address the mine problem around numerous bridges, roads and fords. It also requested that the OAS reassess the demining program and determine both resource requirements and new time frames for the completion of the overall mine clearance program.

The OAS Responds

In order to tackle these issues and respond to the damages in Nicaragua, the OAS requested an increase in donor support. In support of the OAS and U.S. Southern Command, the U.S. Army Corps of Engineers Waterways Experiment Station conducted a hydrological study in order to determine the general effects of erosion on the mine situation. This study identified four different types of landscapes on the border area—rugged highlands, rolling highlands, narrow valleys and broad valleys—in order to assess the effects of natural and storm accelerated hydrological and geological processes on the distribution of landmines along the border.

The study pointed out that in rugged highlands (much of the border area) where landslides occurred, the mines were most likely transported to local stream channels and possibly carried downstream. Also, in narrow stream valleys and broad stream valleys, substantial erosion occurred. Mine field maps brought to light the fact that many of the mines in this area may have been excavated, transported and redeposited downstream during floods produced by Hurricane Mitch, particularly in the vicinity of bridges and low water crossings.

The study concludes that a total of 45 mine fields, both immediately adjacent to the border and as far away as four kilometers, have experienced landslides eroding the mines and transporting them to the bottom of the slope into local channels and downstream. These areas, the study concludes, should be approached cautiously, as they may contain redeposited mines, especially in areas of debris accumulation in and near the channels. Furthermore, it points out that the distribution of these processes is readily apparent from aerial reconnaissance and should be readily identifiable to trained observers on the ground during site visits.

OAS Emergency Demining Plan

In order to assist Nicaragua, OAS implemented an emergency plan. The sites that required reconstruction and the areas where the presence of mines had been confirmed were prioritized. The plan focused on some 70 bridges and fords in northern and central Nicaragua. Visits were made to each site in order to assess the damage to the bridges, identify bridges with mine fields in close proximity and to



Erosion can cause devastating effects to landmine surveys.
Photo c/o IADB

Demining under a bridge in Los Muelles de los Buyes, Nicaragua.

Photo c/o Inter-American Defense Board (IADB)



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question the population about the possible existence of mines and the occurrence of recent mine accidents. In addition, all records of previous demining operations were reviewed to determine if the suspected areas had been cleared in the past.

The result of the study points out that the storm and its associated flooding had caused wide-ranging damage to many of the bridges. Some of the inhabitants of the communities near these sites were contacted and reported that, in some cases, the area had never been mined, in others that accidents to animals had occurred following Hurricane Mitch, and in still others, they knew the exact date when the landmines were buried and whether the area had been demined. Based on the information from this survey, OAS and Nicaraguan demining authorities were able to make a risk assessment at each site and determine the priority and most appropriate means for emergency clearance operations.

Upon conclusion of this initial assessment, Nicaraguan troops, with the assistance of international military supervisors provided by the Inter-American Defense Board (IADB), worked through the Christmas holiday to ensure that these operations went forward. In addition to these efforts, 12 mine detection dogs already in training when Mitch struck were quickly deployed and integrated into the demining programs of Costa Rica, Nicaragua and Honduras. These dogs were particularly valuable in emergency demining operations in Nicaragua, as their use advanced the pace of operations by identifying mined areas for manual demining efforts and by quickly confirming the clearance of low-risk areas.

Expansion of Program

In order to meet the long-term challenges presented by Mitch, OAS expanded its assistance program in Nicaragua. The headquarters of the IADB team of international supervisors and military trainers (MARMINCA) was transferred from Dali, Honduras to Managua, Nicaragua. The number of demining units was increased from 15 to 21 platoons and from 375 to 500 troops to carry out simultaneous operations throughout Nicaragua. Eighteen new international supervisors were trained and integrated into the program to oversee demining operations. The Nicaraguan Army, OAS and the IADB also jointly revised long-range planning for the program, projecting a conclusion date of 2004.

Lessons Learned

One of the most important lessons learned, which has reasserted itself throughout the length of OAS demining operations, is the need to retain flexibility within the programming in order to deal with unexpected situations that require quick changes in priorities. The need to replace essential equipment lost to flooding in Honduras and the diversion of resources from demining operations to immediate relief efforts in Nicaragua and Honduras shows the importance of flexibility. With the displacement of mines, long-term goals needed to be re-established to focus on previously mine-free areas where mine accidents occurred. Demining efforts in the aftermath of Hurricane Mitch went hand-in-hand with national reconstruction efforts on bridges and roads.

The importance of an immediate impact assessment by both demining experts and hydrologists/topographical engineers became apparent in re-establishing priorities. With the cooperation of demining experts and hydrologists/topographical engineers, areas affected by displaced mines were identified and marked. This allowed for the identification of priorities and communities at risk due to displaced mines.

Another important lesson learned was the importance of demining assets that can improve the responsiveness of operations based on risk assessment and operational requirements. In order to quickly clear areas and allow reconstruction priorities to proceed, Canine Mine Detection Units were integrated into the program. Their integration demonstrates the value of employing dogs to check low-risk areas and increase the pace of operations. A separate platoon was also created to fill the role of a reactionary force.

This experience has not only been a lesson learned by deminers but also by other people involved in humanitarian affairs. Hurricane Mitch forced a lot of people and organizations to mobilize in disasters and, in particular, demining efforts. It has strengthened cooperation between many agencies and demonstrated an event in which none of the population was left untouched. The lessons learned from Hurricane Mitch will allow for a quicker response time to avoid any unnecessary delays to demining operations. In so doing, we are now better prepared if something similar should occur in the future. ■

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