# Global ORRESPONDENT

# Haiti Earthquake: Perspectives From the Ground and Lessons From Afar

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isaster response defies easy assessment. Nevertheless, it is valuable to analyze the response to the earth-quake that struck Haiti on January 12, 2010. Understanding what happened can help guide work in Haiti, as well as the work in future events. This brief overview examines the emergency response in Haiti, summarizes applicable lessons from a past disaster, and considers what may lie ahead.

# PORT-AU-PRINCE BEFORE THE EARTHQUAKE

Haiti has undergone decades of poverty, political instability, environmental exploitation, and inadequate development, leaving it vulnerable to the impact of an event such as the 2010 earthquake. Hurricanes have repeatedly devastated Haiti. In 2008, 4 storms hit the country, killing thousands of people; destroying 70% of the crops; and leaving 800,000 people homeless, injured, hungry, and other effects. Years of deforestation have increased the risk of landslides and flooding.

In an international ranking of quality of life based on poverty, civil rights, nutrition, and other markers, Haiti was ranked between Afghanistan and Sudan in the category of "extreme human suffering." Haiti placed 149th of 182 countries on the 2009 Human Development Index, a ranking based on economics, life expectancy, and education produced annually by the United Nations (UN) Development Program's Human Development Reports.<sup>2</sup>

Much has improved in Haiti during the past decade. The ongoing presence of UN agencies, including the UN Stabilization Mission in Haiti, had improved security and some services in Port-au-Prince. Despite this, food shortages were common and potable water was rare. Before the earthquake struck, an estimated 2 million people lived as squatters.

# INTERNATIONAL MOBILIZATION

The limited emergency response systems (cellular communications, police, fire, and UN services) were largely destroyed by the earthquake. Many government institutions, commercial infrastructure, hospitals, and roads were severely damaged. The leadership of most systems, including the UN, was disrupted resulting from deaths and injuries.

The international response was swift. By mid-March, more than US\$1 billion in aid had been distributed in Haiti. Activation of military teams from the United States, the Dominican Republic, and other nations resulted in rapid

logistical and infrastructure improvement. National and international nongovernmental organizations and civic organizations provided shelter, public health interventions, education, and gender-based violence prevention.

The UN cluster system, activated to respond to disasters, offers broad assessment and delivery mechanisms. The 12 UN clusters that are active in Haiti are Camp Coordination and Camp Management (lead agency: the International Organization for Migration), Education (UN International Children's Emergency Fund [UNICEF]), Emergency Shelter and Non-Food Items (International Federation of the Red Cross and Red Crescent), Food (World Food Programme [WFP]), Logistics (WFP), Nutrition (UNICEF), Protection (Office of the High Commissioner for Human Rights with UNICEF for Child Protection and the UN Population Fund for gender-based violence), Water, Sanitation, and Hygiene (WASH; UNICEF), Agriculture (Food and Agriculture Organization), Early Recovery (UN Development Program), Emergency Telecommunications (WFP), and Health (World Health Organization/Pan American Health Organization).

# **RESPONSE AND THE ROAD AHEAD**

Since the January earthquake, the response has shifted from postdisaster recovery to relief provision and reconstruction. Ongoing priorities include maintaining security; monitoring water, sanitation, and hygiene; providing food and health care; improving maps; providing protection from severe weather; and addressing the psychosocial needs of the community.

# Security

Although the overall situation has been calm, the government intends to continue vigilance and prepare a coordinated response to any security concern. Security policy statements from the United States and the UN indicate a military and monitoring presence for months to years ahead. To ensure the safety of responders, the Joint Operations and Tasking Centre of the UN provides military and police assistance. The border with the Dominican Republic, although initially porous, returned to more standard security within 1 month.

#### WASH

WASH are an ongoing need. Although many people in affected areas have access to water via unplanned small

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wells, these wells are susceptible to contamination. In the short term, the priority is still building enough latrines and improving access to water for the displaced population. Redevelopment of permanent infrastructure may offer the opportunity to address the long-standing inadequacies in water and sanitation with a more systemic approach.

#### Food

Food distributions have numbered greater than 4 million, and as of mid-March an estimated 1.3 million people were receiving daily emergency water distributions of 5 L per person. Plans for longer-term food distribution are in place following a March distribution of 1 month's food supplies to 1.9 million people.

#### Health

The primary injuries and illnesses that resulted from the earthquake (fractures, crush injuries, wounds) have been largely resolved. A second phase of surgeries will be required as failures in primary management are identified and people with previously untreated injuries present to hospitals and clinics. In addition, infectious diseases such as diarrhea and respiratory infections resulting from cramped living conditions, inadequate nutrition, and exposure to the elements may increase. Efforts to vaccinate vulnerable populations against measles have begun, but coverage was low before the earthquake (58% in 2008)<sup>3</sup> and will require long-term efforts to reach adequate levels.

# **Mapping**

Initial search-and-rescue operations were massive but, as with other parts of the response, were hindered by the enormity of the task and the difficulty of movement. Novel approaches to coping with the disaster were numerous. One such operation was Ushahidi Haiti, an open-source text messaging and mapping program. Ushahidi Haiti connected free text messages from earthquake survivors to search-and-rescue and response operations via volunteer translators and mappers located around the world. The service allowed not only real-time information to responders but also large-scale mapping of the disaster and enhanced coordination of military, nongovernmental organizations, and government response. On-the-ground reports contributed to more complete information, including names of roads in informal neighborhoods.

#### Weather

The seasonal rains that begin in May and the storms of the hurricane season that begins in June are likely to considerably change the relief efforts. Flooding in parts of Port-au-Prince on February 27 killed 17 people and required the evacuation of 4000 people. The water level of Lake Azueli, which lies adjacent to the main road (and major supply line) between Santo Domingo and Port-au-Prince, has risen since the earthquake and has the potential to flood, further jeopar-dizing relief efforts. Planning includes efforts to move dis-

placed populations out of flood-prone areas, rapidly rebuild temporary housing, and anticipate further population movements and disruptions.

# **Social Disruption**

Tears in the social fabric, family and community connections, social welfare organizations, and safety nets have left a void that must be met to ensure the stability of and improvement in Haiti. Community-based organizations have expanded their missions to aid in relief and recovery. Some organizations, such as educational and social service groups, are assisting with food distribution, procuring medicine for local clinics, and helping with housing needs.

The medical response to the earthquake has often involved moving patients in groups to facilities outside Port-au-Prince, and many new and enduring relationships of mutual support have developed within these groups.

#### LESSONS FROM BANDA ACEH

The result of one of the most powerful earthquakes on record, the December 26, 2004 Indian Ocean Tsunami killed nearly 200,000 people worldwide and left more than a third of Banda Aceh's 320,000 inhabitants dead or missing."<sup>5</sup> One of the most severely devastated areas was the coastal city of Banda Aceh, Indonesia, near the epicenter of the earthquake. In Banda Aceh, as in Haiti, many saw the opportunity to use relief and reconstruction to establish a stronger society, with improved governance, infrastructure, and services. The phrase "build back better" gained currency. If Haiti is to emerge from this crisis "better," what must be done? Five years later, the progress made in Indonesia's Aceh province offers an example.

The response to the 2004 tsunami brought the possibility of new investment in infrastructure and social services. This motivated the leaders of the separatist movement and the Indonesian government to renew stalled negotiations and resolve their dispute. A peace agreement took effect 8 months after the tsunami, allowing greater autonomy and local governance. Peace has been maintained and violence has been reduced markedly. Some analysts believe that new standards of social trust and governance were adopted from the response efforts and contributed to a cultural shift. New infrastructure has been built, including industry, roads, bridges, schools, and homes, and farmers and fishermen are back at work. Many challenges remain, however, including a slowing economy as programmatic funds from the tsunami end, difficulty reintegrating militants into society, and transforming the culture of corruption and lack of capacity in governance and civil society.

Although other situations like Banda Aceh offer a glimpse into Haiti's possible future, Haiti's situation will not improve without significant diplomatic and technical intervention. Despite steady improvement in the situation, threats from

epidemic disease, social disruption, political insecurity, severe weather, and further population movements could threaten Haiti's progress. Short-sighted funding arrangements, which offer a limited and superficial approach, will not transform Haiti's ability to function in the world economy. Haiti's recovery may also be undermined by the long-standing concentration of power among the elites and disregard for accountability to and participation of the poor. The international community has a history of only limited success in Haiti, allowing it to remain the poorest country in the Western hemisphere. The influx of international support must be sustained and visionary for Haiti to truly "build back better."

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#### REFERENCES

- 1. Philippine Legislators' Committee on Population and Development Foundation. Human suffering. *People Count.* 1992;2:1-4.
- Human Development Report 2009. Haiti. The Human Development Index— Going Beyond Income. http://hdrstats.undp.org/en/countries/country\_fact \_sheets/cty\_fs\_HTI.html. Accessed March 24, 2010.
- Centers for Disease Control and Prevention. Measles: Haiti pre-decision brief for public health action. http://emergency.cdc.gov/disasters/earthquakes/haiti/measles\_pre-decision\_brief.asp. Accessed March 24, 2010.
- Haiti: the 2010 earthquake in Haiti. http://haiti.ushahidi.com. Accessed March 24, 2010.
- US Geological Service. The 26 December 2004 Indian Ocean Tsunami: Initial Findings from Sumatra. Based on Survey Conducted January 20-29, 2005, Sumatra International Tsunami Survey Team.