



Haiti is one of the countries with the highest levels of environmental degradation in the world. The lack of a healthy environment has had severe social, economic and health consequences for the Haitian population over the years. In addition, the degradation of watersheds and the high rates of deforestation leave the population particularly vulnerable to flooding.

Insufficient water and sanitation and poor water quality present major public health risks in Haiti. PAHO/WHO estimates that diarrhea accounted for 16% of under-5 deaths in Haiti before the earthquake. 50% of the rural population and 33% of the urban population do not have access to an improved water source. 84% of the rural population and 62% of the urban population do not have improved sanitation facilities. 75% of the demand for energy is satisfied by wood or charcoal. Less than 10% of the solid waste in Port-au-Prince is collected.

The earthquake of January 12, 2010 damaged Haiti's already weak water and sanitation systems and created enormous challenges with thousands of people forced into temporary settlements. After the earthquake, water quality, sanitation and hospital waste management quickly became priorities due to the heavy load of medical activities and surgeries. In addition to leading the Health Cluster, PAHO/WHO also participated in the Water, Sanitation and Hygiene Cluster (WASH) to improve water quality and promote proper health care waste management.

On October 15, 2010, the first cases of suspected cholera were reported in Haiti by the Cuban Medical Brigade working in the community of Mirebalais in the Center Department. On October 22<sup>nd</sup> it was confirmed that it was cholera, when more cases were reported in several communities in the Artibonite River valley. This was the first time epidemic cholera had reached the island in over 100 years.

As of April 15, 2011, 285,239 cases of cholera had been reported, with 4,865 deaths. 1,864 of the reported deaths have occurred in the communities (as opposed to health institutions). The overall mortality rate is 1.7% and the hospital mortality rate is 2.0%. The mortality rate was close to 5% at the onset of the outbreak, when the country was beginning to organize its response. Fortunately, those numbers have gone down as a result of a large-scale and coordinated effort among health partners collaborating in the field.

Despite the considerably high number of deaths, given the historical contextual factors of poverty, lack of clean water and limited health services, among others in Haiti, the coordinated response to the cholera epidemic is saving thousands of lives. PAHO/WHO and partners have worked together to form an integrated and comprehensive approach, from creating alert and response teams in each department for improved surveillance to mobilizing thousands of community health promoters with cholera prevention messages to monitoring water quality and waste disposal in health facilities.

PAHO/WHO and partners are intensifying efforts at improving environmental health in Haiti, not only for the prevention of further cholera outbreaks, but for a healthier and more sustainable future for Haiti.

### Activities carried out:

#### *In the aftermath of the earthquake:*

- PAHO/WHO and WASH Cluster partners have worked with the National Directorate of Water Supply and Sanitation (DINEPA) to reach over 1.72 million Haitians affected by the earthquake. Cluster partners installed 15,309 latrines and a total of 327,300 hygiene kits were delivered and 3,500 hygiene promoters and community mobilizers were trained.
- PAHO/WHO put in place a Health Care Waste collection system for the main 24 hospitals in Port-au-Prince and paid for the construction of a discharge pit within the main dump. The cholera epidemic has brought new challenges to the implementation of the plan, and the issue of transport of infectious waste has led to a reanalysis of the best solutions for Haiti.
- PAHO/WHO supported the Ministry of Public Work and Telecommunication (MTPTC) and DINEPA with chlorination chemicals for the water distributed to temporary camps (each day 4.3 million liters of clean water were being delivered to affected communities and health care institutions by 50 water tankers). In addition PAHO/WHO carried out water quality analysis at the filling stations, jointly with Technischen Hilfswerks (THW), a German NGO and the Health Cluster.
- PAHO/WHO provided laboratory assistance for the Water Society in Port-au-Prince to re-start water quality control activities.
- As part of WASH Cluster activities, United Nations Environmental Program (UNEP), International Organization for Migration (IOM) and PAHO/WHO have been working with the Haitian Government on a joint strategy to develop the liquefied oil gas sector with private companies and to establish new biogas production technologies to improve energy use in households.



### Activities carried out: (continued)

- Water quality improvements were made in health institutions along the border, including complete replacement of tubing in some institutions, installing sinks and semi-permanent latrines in temporary settlements and temporary health institutions, the establishment of a chlorine distribution route to 29 hospitals along the border from a chlorine generator provided by PAHO/WHO, and the implementation of a water quality surveillance system.

### Regular Technical Cooperation Program:

- Water quality: PAHO/WHO is working with DINEPA, the Ministry of Health (MSPP as per its acronym in French) and the Direction for Health Promotion and Environmental Protection (DPSPE) on water quality guidelines including a water safety plan. PAHO/WHO is also conducting water quality analysis at Hospitals in Port-au-Prince.
- Sanitation: PAHO/WHO is collaborating with DINEPA and UNICEF on sanitation issues including the safe disposal of excreta, the construction of excreta disposal lagoons, and the development and implementation of excreta management protocols, including the disinfection of removal trucks.
- Health Care Waste (HCW):
  - PAHO/WHO is collaborating with the MSPP/DPSPE, MSPP/Direction of Pharmacy and Medicines (DPM,) MSPP/Direction of Health Services Organization (DOSS), UNICEF, and UNFPA in the triage, collection and safe disposal of HCW. PAHO/WHO sits on the National Committee for the Security of Injections and Management of Waste (CNSI), and is supporting the MSPP in the implementation of the National Policy on the Security of Injections and Waste Management (SIGD).
  - PAHO/WHO has provided public health institutions and NGOs with over 20,000 plastic bags for safe disposal of medical waste and over 1,000 sharps containers for disposal of needles and sharp items.
- Workers' health:
  - Training of healthcare workers on occupational health and infection control principles.
  - Provision of personal protective equipment (gowns, gloves, surgical masks) to healthcare workers.
- Social mobilization, communication and health promotion: PAHO/WHO is supporting the MSPP in the updating of the Health Promotion Strategic Plan. In addition, core documents and information material for the prevention of cholera were developed.
- Vector borne diseases: PAHO/WHO distributed 20,000 mosquito nets in 2010 to health clinics in the earthquake affected areas to be used in clinics and also for patients upon discharge, with emphasis on pregnant women and women with children under 5.
- Resources: PAHO/WHO has mobilized over US\$1.7 million for environmental health activities in Haiti, with another estimated US\$ 200,000 pending. Resources are being contributed from the following partners: Spanish Agency of International Development Cooperation, Canadian International Development Agency, European Commission's Humanitarian Aid Department, UK Department for International Development, United Nations Central Emergency Response Fund, U.S. Agency for International Development and its Office of Foreign Disaster Assistance, as well as the governments of Monaco, Japan and Finland.

### Challenges and next steps:

- Water quality: PAHO/WHO will continue to assist in water quality standard setting and in the identification of long term solutions for laboratory analysis. Additional funding is necessary to carry out activities in this field.
- PAHO/WHO will also support the improvement in water quality of water networks in different regions in order to have more long term solutions to the delivery of potable water.
- Health Care Waste: development and approval of a National Plan for HCW and implementation of a national plan for injection security and management of HCW with adjustments for non-incinerable products. PAHO/WHO will assist DINEPA and MSPP in finding medium and long term solutions to the HCW management problems. In addition PAHO/WHO will support the UNFPA project on Reproductive Health in setting up appropriate health care waste management systems in the departments identified.
- Sanitation: definition of a final discharge site (Truitier, Titanyen or other and 9 departmental sites). Implement excreta management in health institutions.
- Vector Control: PAHO/WHO is assisting the National Malaria Control Program in Hygiene Promotion activities related to vector control.
- Mobilize resources to continue environmental health related activities in 2011.