

**The New York Times**®  
Reprints

This copy is for your personal, noncommercial use only. You can order presentation-ready copies for distribution to your colleagues, clients or customers here or use the "Reprints" tool that appears next to any article. Visit [www.nytreprints.com](http://www.nytreprints.com) for samples and additional information. Order a reprint of this article now.

PRINTER-FRIENDLY FORMAT  
SPONSORED BY



July 7, 2010

## Haiti's Eternal Weight

By REGINALD DESROCHES, OZLEM ERGUN and JULIE SWANN

Atlanta

IT has been six months since the earthquake in Haiti left more than 300,000 people dead and destroyed 280,000 homes and businesses. Haiti still faces a long road to recovery, but one of the biggest things literally standing in its way is earthquake debris.

The quake left an astonishing amount of debris, including concrete and rebar from collapsed buildings, destroyed belongings and human remains. Twenty million to 25 million cubic yards of debris fill the streets, yards, sidewalks and canals of Port-au-Prince — enough to fill five Louisiana Superdomes.

According to our research and conversations with aid groups in Haiti, less than 5 percent of this has been removed since January, and even less has been properly disposed of. A draft of the United States Army Corps of Engineers' debris management plan says it would take a dump truck with a 20-cubic-yard bed 1,000 days to clear the debris, if it carried 1,000 loads a day — or about three years. But the current rate of removal is much lower. Based on our calculations, partially from the United States Agency for International Development's reports on debris removal programs, we estimate that it could take 20 years or more.

Today, debris is one of the most significant issues keeping Haitians from rebuilding Port-au-Prince and resuming normal lives. Much of the stuff has been left in place or simply moved to the center or the sides of roads. Some streets with especially large piles of refuse are impassable. As a result, it can take hours to travel just a few miles. Meanwhile, schools, hospitals, businesses and homes remain blocked.

The debris is also an environmental and health hazard. The daily downpours of the rainy season leach toxic chemicals and carcinogens into the storm water system — and ultimately into the drinking water. Debris has been dumped into the sea, turning the blue water brown.

Initial cleanup efforts were promising. Immediately after the earthquake, the Haitian government's road construction operation began clearing debris. Within a week, the United States Army Corps of Engineers deployed teams to identify sites for sorting and processing debris and drafted a debris management plan, while the Navy hired Haitian and foreign contractors to open major roads with heavy machinery.

But since then, efforts have lagged. At present, there is no significant, coordinated financing by international aid groups for debris removal using machinery, though some estimates predict the next year and a half of debris management could cost around \$300 million. Instead, almost all of the operations in Port-au-Prince are in the form of cash-for-work programs like the ones sponsored by Usaid and the European Union, which have Haitians, at best, breaking concrete and loading trucks by hand and, at worst, just moving bricks from one side of a road to the other. Many workers lack masks or gloves. While this inefficient process may put money into the hands of Haitians, it only further slows rebuilding.

Instead, the United Nations, the World Bank and agencies like Usaid, in conjunction with the Haitian government, should create a task force focused on debris removal to coordinate the cleanup efforts of the hodgepodge of aid groups in the country. The task force should identify critical facilities, like hospitals and schools, and the roads that approach them, to clear first. It should lay down environmental regulations for debris disposal and landfill management, and regulate the use of cash-for-work programs. There's no reason these can't continue, but more of the money should be allocated to bringing in heavy equipment and expertise. This kind of task force would serve as a model for future disasters.

Debris isn't sexy. Images of blocked-off streets don't inspire people to help in the way pictures of hungry or needy people do. However, if Haiti is going to recover, it needs more than food aid and health clinics; it needs functioning, accessible infrastructure.

*Reginald DesRoches is a professor of civil and environmental engineering at the Georgia Institute of Technology, where Ozlem Ergun and Julie Swann are associate professors of industrial and systems engineering and co-directors of the Center for Health and Humanitarian Logistics.*

- -