

Water, Sanitation and Hygiene in Haiti: Past, Present, and Future

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Abstract. Haiti has the lowest rates of access to improved water and sanitation infrastructure in the western hemisphere. This situation was likely exacerbated by the earthquake in 2010 and also contributed to the rapid spread of the cholera epidemic that started later that same year. This report examines the history of the water, sanitation, and hygiene (WASH) sector in Haiti, considering some factors that have influenced WASH conditions in the country. We then discuss the situation since the earthquake and subsequent cholera epidemic, and the responses to those events. Finally, drawing on Haiti's National Plan of Action for the Elimination of Cholera in Haiti 2013–2022, we suggest some actions that could help bring about long-term WASH improvements for the future. Because the current WASH situation has evolved over decades of limited attention and resources, it will take a long-term, sustained effort to improve the situation.

INTRODUCTION

Haiti is the most underserved country in the western hemisphere in terms of water and sanitation infrastructure by a wide margin; only 69% of the population has access to an improved water source and 17% had access to improved sanitation facilities in 2010.¹ This level of coverage for sanitation is comparable to some countries in sub-Saharan Africa, and is far below the regional average of 80% sanitation coverage for Latin America and Caribbean.¹ In addition, Haiti is the only country of 161 with available sanitation data in which the proportion of the population with access to improved sanitation facilities decreased from 1995 to 2010 for reasons other than a population decrease.¹ Damage to infrastructure from the magnitude 7.0 January 2010 earthquake, which killed an estimated 230,000 persons and injured 300,000, likely contributed to this decrease, but sanitation coverage in Haiti had already decreased before the earthquake from the 1990 level of 26% to 17% in 2008.^{2,3} The overall coverage figures also mask disparities between urban and rural areas in Haiti, especially for access to improved water sources. In 2010, 85% of the urban population had access to an improved water source, but only 51% of the rural population had access to an improved water source. Access to improved sanitation is low even in urban areas at 24%, but is considerably worse in rural areas, where only 10% of the population had access to improved sanitation in 2010.¹

This lack of water and sanitation services contributed to the severity and rapid spread of the ongoing cholera epidemic that began in Haiti in October 2010, and had resulted in 658,563 reported cases of cholera and 8,111 reported deaths as of June 2, 2013.⁴ The primary means of cholera transmission is through consumption of water contaminated with human waste. With low sanitation coverage and inadequate availability and treatment of drinking water, few barriers were in place to stop the rapid spread of cholera, especially in a population that had not previously been exposed to the disease.

The Millennium Development Goals (MDGs) contain an objective to halve by 2015 the proportion of the world's pop-

ulation that was without access to improved water and sanitation facilities in 1990.¹ Reaching this goal for Haiti would require 74% coverage for improved water and 63% for improved sanitation. The MDG for access to improved water sources may be met by 2015 if current progress continues. However, sanitation lags behind and the sanitation MDG for Haiti is unlikely to be met by 2015. In addition, the MDG goals only address access to improved water sources, which does not necessarily ensure that drinking water is free of contamination. Water quality remains an important issue in Haiti in dealing with the ongoing cholera epidemic.

After the earthquake and subsequent start of the cholera epidemic in 2010, many governments, multi-lateral lending institutions, non-governmental organizations (NGOs), and other organizations have committed significant aid to improve health and infrastructure in Haiti, including improving water, sanitation and hygiene (WASH) conditions.^{5,6} In this report, we will examine the history of the WASH sector in Haiti, considering some factors that have influenced WASH conditions, discuss the situation since the earthquake and start of the cholera epidemic in 2010, and suggest some actions that could be considered by these organizations as they work to bring about long-term WASH improvements in Haiti.

WASH IN HAITI: PAST

Protecting the health of the Haitian population through access to safe drinking water and sanitation is a long-standing challenge in Haiti. As far back as 1900, public health specialists reported on the close links between poor water quality and disease in the nation. In March 1900, Behrmann, Salomon and Hudicourt reported on a dysentery outbreak in Nippes (Figure 1), observing that "Poverty, the use of impure water, constipation, overwork, bad alimentation, the total absence of hygiene, and meteorologic conditions" were the causes of "this disease that is making so many victims."⁷

Over the next few decades military intervention and multi-lateral action focused attention on remedying Haiti's water and sanitation challenges. During the United States occupation of Haiti between 1915 and 1934, water supply and sanitation initiatives were among the many infrastructure projects carried out by the U.S. military.⁸ Yet by the late 1940s, the Haitian government, under the leadership of President Dumarsais Estimé, found that the population's low level of access to water and sanitation services continued to be

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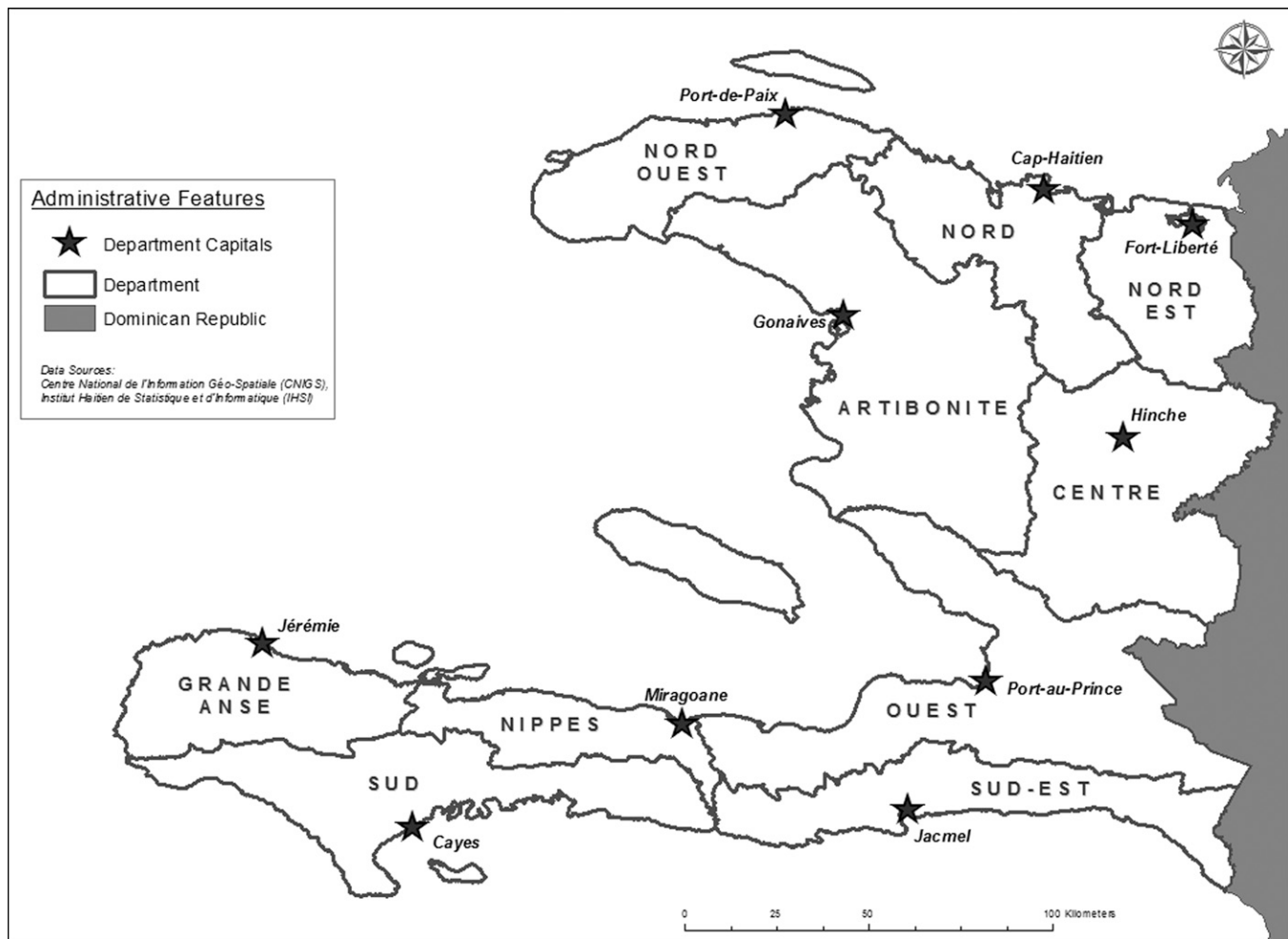


FIGURE 1. Republic of Haiti.

a challenge. In 1948, the government invited a United Nations technical mission, the first of its kind for the new international organization, to visit the nation to offer recommendations for improving those services.⁹ Over the next decade, Haiti sought loan assistance from the Inter-American Development Bank (IDB) to enhance water supply provision, and by 1962 loans to Haiti helped account for the fact that more than 25% of the IDB total regional lending portfolio in Latin America and the Caribbean was dedicated to water supply and sanitation projects.¹⁰ In addition, in 1964, the Government of Haiti created the Centrale Autonome Métropolitaine d'Eau Potable (CAMEP), "a semiautonomous public entity responsible for providing water services to the metropolitan area of Port-au-Prince."¹¹

Despite the influx of international technical assistance and support from multilateral lending agencies such as the IDB, Haiti's efforts to improve water supply and sanitation faced other challenges in the political climate of the mid-1970s. During the administration of Jean-Claude (Baby Doc) Duvalier (1971–1986), the regimen's enforcers, the *tontons macoutes*, controlled water access in some areas. As sanitation specialist Simon Fass observed regarding the Duvalierist militia during 1974–1976, "They commandeered standpipes serving densely populated neighborhoods under the pretext of restoring order

to the general chaos that occurred when water flowed through taps. Naturally, they charged users for the crowd control service they provided."¹²

During 1974–1980, the Pan American Health Organization (PAHO), the regional arm of the World Health Organization, provided technical assistance focused on enhancing governance and community planning related to water in the Latin America and Caribbean region, including in Haiti.¹³ In 1977, the Service National d'Eau Potable (SNEP) was created by the Government of Haiti to provide water supplies to all areas outside of metropolitan Port-au-Prince. However, most of SNEP's limited resources were focused on urban zones in secondary cities rather than rural areas, leaving many rural residents without improved sources of water.¹⁴

In 1986, Haiti was among the top three regional recipients of loans from IDB for water supply and sewerage.¹⁵ In the 1980s, the government of Haiti under Duvalier also sought bilateral assistance for WASH programs from the U.S. government. Through the WASH rural water supply project, the US Agency for International Development in 1985 funded the NGO CARE to set up 40 water supply systems in southern Haiti with the goal of serving 160,000 persons with drinking water.¹⁶ However, for CARE and US Agency for International Development, the violence that surrounded the

collapse of the Duvalier regime in the winter of 1986 also led to delays in implementing the rural water project because CARE's offices and warehouses were repeatedly sacked.¹⁶

The political transition to democracy that played out from Duvalier's departure in 1986 through the early 2000s made achieving sustained progress on water supply and sanitation improvements in Haiti a challenge. Political turbulence during these years made retaining professional staff working in water and sanitation agencies difficult, and international donors and lending agencies became cautious about spending resources amid concerns regarding aid effectiveness within a context of political instability.¹⁷ According to a World Bank report, during 1986–2002, “the extraordinary instability of earlier years has continued, with thirteen governments and two periods during which most donor activities, including Bank lending, ceased altogether.”¹⁸ A 1999 report by the United Nations Development Program and Haiti's Ministry for Planning and Foreign Cooperation noted that foreign assistance to Haiti was down considerably in the late 1990s, and indicated that “the institutional vacuum in both executive and legislative branches made it difficult to approve cooperation in the country.”¹⁹

It was not until the mid-2000s that foreign assistance for Haiti began to flow again.¹⁷ With the nation's human immunodeficiency virus prevalence the highest in the Americas, some initiatives included water supply and sanitation among their interventions, underscoring the importance of an improved water supply for a population vulnerable to infectious diseases.²⁰

Reform of the water and sanitation sector was voted unanimously into law by the Haitian parliament and published in March 2009. The intent of the reform was to generate new focus on the sector and be the first step towards spurring investment and development plans. The reform created a regulatory body, the National Directorate for Potable Water and Sanitation (known by its French acronym DINEPA), and laid out its organizational structure, as well as its funding, evaluation and control mechanisms. As part of the reform, the functions of CAMEP and SNEP were integrated into DINEPA. However, long-term decentralization of water and sanitation services to municipalities was also a key aspect of the reform. The reform also placed responsibility for oversight of sanitation within DINEPA, which had not been in the mandate of CAMEP or SNEP.¹⁴ With significant support from IDB and the Spanish Agency for International Development Cooperation, DINEPA secured close to \$300 million U.S. dollars and developed an action plan for the first three years of operation (2009–2011).²¹ The action plan identified three major challenges: 1) implementation of institutional reform, 2) improvement of operational performance and sustainability of capital works and improvements, and 3) stimulation of investment in infrastructure, especially in urban sanitation. Although funds secured were not sufficient to meet the MDGs, it was anticipated that significant improvements in water and sanitation coverage in Haiti would be made in the first years of DINEPA's operation.

WASH IN HAITI: PRESENT

The January 2010 earthquake, striking just months after the formation of DINEPA, shifted the focus within the WASH sector in Haiti from longer term development to emergency

response. After the January earthquake, more than one million internally displaced persons (IDPs) were residing in numerous IDP settlements in the capital of Port-au-Prince and outlying areas.² Provision of potable water and sanitary facilities proved to be an enormous challenge. DINEPA, international organizations, and local agencies successfully organized a water tankering operation to provide potable water to hundreds of IDP settlements relatively quickly. Provision of latrines and removal of latrine waste proved more complicated. DINEPA and the United National Children's Fund (UNICEF) became co-leads of the WASH cluster in Haiti, an interagency group designed to “address gaps in response and enhance the quality of humanitarian assistance by strengthening partnerships and coordination between U.N. agencies, the Red Cross/Crescent movement, international organizations, and NGOs.”²² These became challenging tasks in themselves because more than 100 NGOs were identified working in the WASH sector in Haiti in 2011 (Lockhart G, unpublished data). In addition, a multitude of small faith-based groups operate in the WASH sector in Haiti, often working on small projects such as constructing wells for individual schools or churches.

In addition to this role of coordinating the WASH sector, DINEPA and the WASH Cluster also faced the challenge of managing emergency response funding for the WASH sector.²¹ Directly after the earthquake, close to \$100 million U.S. dollars was received just for the temporary provision of WASH services to IDPs living in temporary improvised settlements in and around Port-au-Prince.²³ These efforts were apparently successful; although cholera came to Haiti later in 2010 and spread throughout the country, “residents of IDP camps have been largely spared from the outbreak because of safer water supplies and improved sanitation in the camps.”²

The start of the cholera outbreak in October 2010 led to additional funding specifically for cholera response efforts taking place around the country.²⁴ The WASH-related cholera response activities consisted primarily of increased chlorination of municipal water supplies, rehabilitation of distribution networks and water treatment stations, distributions of household water treatment products and soap, and cholera prevention and hygiene promotion campaigns. The response to the cholera epidemic was coordinated by the Ministry of Public Health and Population (French acronym MSPP) and DINEPA, and has continued into 2013. Including the funds received for WASH in 2011 and the 2012 consolidated appeal process, a total of approximately \$50 million U.S. dollars was spent on immediate cholera response measures.²³ This total only represents the response activities of large organizations, and excludes those of the unknown number of small NGOs and faith-based groups, which have started or increased activities in the WASH sector since the emergencies of 2010.

Many of these efforts by various organizations were response oriented, dealing with the immediate consequences of the earthquake and cholera epidemic, and did not focus on longer term development of WASH infrastructure and programs.²⁵ These shorter-term projects have finished or are currently winding down, and many organizations have scaled back their WASH activities in Haiti. As documented in the “National Plan of Action for the Elimination of Cholera in Haiti 2013–2022” (hereafter referred to as the National Plan), many needs remain in the WASH sector, however. DINEPA has restarted some of the sector reform activities begun

in 2009.²⁴ Clearly, the new reality created as a result of multiple national emergencies has meant not only that DINEPA has had to change priorities, but also that the task of coordination and regulation has grown more complex. Nonetheless, DINEPA has created an updated Five Year Plan (2011–2015) that includes objectives for progressively improving WASH services in Port-au-Prince and secondary cities and towns. Improving access to WASH infrastructure in rural areas and generally increasing access to chlorinated water were also identified as objectives. The updated five year plan also includes strategies to strengthen governance and regulation and emergency response, launch national campaigns to promote sanitation and hygiene, and build capacity in the WASH sector.²⁶

A number of projects are currently underway to meet these goals; some examples follow but these do not represent a comprehensive list of DINEPA's activities under the sector reform initiative. To improve operations and build capacity within DINEPA, international operators have been contracted to assist with managing some urban water systems.²⁷ Rural Departmental Units have also been established to manage WASH services and infrastructure in each of Haiti's 10 Departments (Figure 1).²⁶ Recognizing that piped water services will not reach many Haitian communities in the near future, DINEPA is developing a national strategy to promote household water treatment and storage. In addition, DINEPA created the Potable Water and Sanitation Technicians for the Communes (known by their French acronym TEPACs) program, through which 264 technicians have been trained and deployed to all rural communes outside of the Port-au-Prince metropolitan area.²⁴ The TEPACs are working with local water committees to monitor water quality and promote appropriate hygiene behaviors.

The IDB and the Spanish Agency for International Development Cooperation remain the major providers of funding and technical assistance for DINEPA, with the World Bank, the Swiss government, the U.S. Centers for Disease Control and Prevention (CDC), and other organizations also providing assistance.²⁴ In addition to the work being done by DINEPA, numerous other organizations also continue to be involved in the WASH sector in Haiti. These organizations include large international NGOs such as CARE, Catholic Relief Services, and World Vision, as well as local NGOs and international organizations such as UNICEF and PAHO, to name just a few.

WASH IN HAITI: FUTURE

The National Plan was officially launched by MSPP on February 27, 2013.²⁴ This plan, developed by MSPP and DINEPA with input from various partners, includes activities in four major areas aimed at eliminating endemic cholera in Haiti within 10 years. The four areas are water and sanitation, health care services and management, epidemiology and surveillance, and health and hygiene promotion.

As noted in the National Plan,²⁴ meeting those needs will require several components, including investing in WASH programs such as water and sanitation infrastructure and hygiene education, with a special emphasis on sanitation; coordinating the WASH Sector; and building or augmenting capacity within Haitian government institutions at all levels to manage WASH investments and also to

operate and maintain WASH infrastructure and sustain hygiene improvement efforts.

Investing in WASH programs. There has been significant investment in WASH programs in Haiti since the earthquake and start of the cholera epidemic in 2010, as discussed above. As noted in the National Plan, ongoing investment by organizations already working in Haiti, as well as new investment by additional partners, will assist in meeting the goal to control cholera in Haiti by improving the country's water and sanitation conditions.²⁴

To catalyze that additional investment, a "Call to Action" was launched in January 2012 by the governments of Haiti and the Dominican Republic along with PAHO, CDC, and UNICEF. This initiative appealed for a sustained, long-term effort to eliminate cholera from the Island of Hispaniola.²⁸ That initial "Call to Action" led to the development of national plans to eliminate cholera in Haiti and the Dominican Republic, as well as an International Coalition to Eliminate Cholera in Hispaniola.

The National Plan for Haiti identifies \$2.2 billion U.S. dollars in needs within these four areas, but most (\$1.6 billion U.S. dollars) of the investment identified to carry out these activities is focused on the WASH sector, reflecting the massive needs in that area. The plan also calls for increased national investment from the Government of Haiti in the areas above, and strengthening of capacity within national institutions (this latter point is further discussed below). As part of Haiti's National Plan, the U.N. Secretary General has also appointed a Special Advisor to assist in securing investment to implement the plan.

The National Plan for Haiti also encompasses a short term plan for 2013–2015,²⁹ which is more operational in nature, and identifies \$444 million U.S. dollars in specific needs for investment during 2013–2015 in the four areas identified above. Of that \$444 million U.S. dollars, approximately \$215 million U.S. dollars is designated for water and sanitation activities, including institutional strengthening of DINEPA.

Coordinating the WASH sector. The projects and programs implemented by the various actors in the WASH sector in Haiti have not always been coordinated with Haitian government entities, such as DINEPA and MSPP or local municipalities. In the aftermath of the earthquake and start of the cholera epidemic in 2010, the WASH Cluster in Haiti drew together many of the major actors in the sector during the emergency phase. Since that time, some activities of the Cluster have been integrated into DINEPA's emergency response unit, but these activities are primarily focused on response. The National Plan also notes that broader coordination of activities beyond emergency response in the WASH sector would be beneficial.²⁴

Haitian government agencies also have limited resources (including staff), constraining their ability to provide effective coordination to the sector. Nonetheless, DINEPA is moving towards coordinating the WASH sector. For example, draft standards for the production and distribution of household water treatment and storage products and draft guidelines for their use have been created. The presence of the TEPACs in all rural communes will also be a key asset for coordinating WASH activities among various partners at the local level. In addition, so far 23 NGOs have registered with DINEPA and signed an agreement to work within the framework outlined in DINEPA's national strategy for the WASH sector.

Eventually, DINEPA's vision is to move beyond a coordinating role to also regulate the sector, as outlined in their five year plan for 2011–2015.²⁶

Building capacity. The National Plan notes that all efforts in investment and coordination described above will require building or augmenting capacity within Haitian government institutions that deal with WASH issues, from the national to the local level, including increasing capacity to manage financing for WASH interventions.²⁴ These institutions have been constrained by limited financial and human resources, a situation exacerbated by the loss of staff in the 2010 earthquake, especially at MSPP. This limitation has hindered the institutional ability within the government to manage initial investments and sustain WASH facilities and programs.²⁴ Nonetheless, these government institutions are the ones who will be charged with overseeing the long term functioning of WASH infrastructure and hygiene education. Therefore, it would be beneficial to integrate the building and strengthening of existing capacity into all efforts within the WASH sector. As the Haitian government moves forward with its decentralization plans, capacity building could also target regional and local entities such as municipalities.²⁴

Prior experience has shown that without such capacity building efforts, the benefits from investments in water and sanitation infrastructure and hygiene education will not be sustained.^{30,31} The investments required in human capacity building are relatively small, especially when compared with the magnitude of those required in infrastructure projects.

CONCLUSIONS

In Haiti, there is a history of underinvestment in the WASH sector, and low levels of water and sanitation coverage compared with its regional neighbors.²⁴ The twin disasters of a massive earthquake and the start of a cholera epidemic in 2010 brought increased attention and funding to the sector, although much of it was focused on short term response activities. These crises also brought increased attention to planning for efforts to improve the WASH sector over the longer term, resulting in a National Plan to eliminate cholera from Haiti within the next 10 years. The challenge for the future will be to fully implement that National Plan, especially the sections focused on improving sanitation conditions, and encouraging the development of sufficient institutional capacity to manage and sustain WASH improvements.

The cost of improving WASH conditions and eliminating cholera in Haiti will be significant. The 10 year plan to accomplish these goals provides an estimate of \$2.2 billion U.S. dollars, with more than 70% of that investment going to the WASH sector.²⁴ However, the potential dividend from these investments is apparent. Experience from Latin America in responding to the cholera outbreak in that region in the 1990s suggests that WASH improvements contributed to the elimination of cholera, as well as reductions in other waterborne diseases. In Mexico, for example, WASH investments in the 1990s led to an increase from 55% to more than 90% of municipalities providing potable water, and mortality from diarrheal diseases during the same period decreased significantly among children less than five years of age.^{32,33} Investing in WASH also results in economic benefits. For every \$1 U.S. dollar invested, an estimated \$5–46 U.S. dollars

in economic benefits results, depending on the particular WASH intervention.³⁴ Haiti's National Plan to eliminate cholera provides an outline of how such health and economic benefits might be achieved: investment, coordination, and capacity building.

Received April 23, 2013. Accepted for publication July 30, 2013.

Acknowledgments: We thank Fabienne Bertrand and her staff at DINEPA, Corrine Cathala (IDB), and Kate Dickson (PAHO) for providing valuable information and for their collaboration on WASH programs in Haiti; the CDC Haiti Office and Health Systems Reconstruction Office for their support, especially Amber Dismer for providing the map; all WASH actors in Haiti who have provided information on their projects and programs through various sources such as the WASH Cluster; and United Nations Office for Coordination of Humanitarian Affairs, and their own web sites for assistance.

Disclaimer: The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention. CSIS does not take specific policy positions; accordingly, all views expressed herein should be understood to be solely those of the author(s).

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