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# Water, Sanitation, and Hygiene Sector Status and Trends Assessment in Haiti



**DECEMBER 2014**

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# WATER, SANITATION, AND HYGIENE SECTOR STATUS AND TRENDS IN HAITI

## Final Report

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## ACRONYMS

ACF	Action Against Hunger / Action Contre la Faim
AECID	Spanish Cooperation / Agencia Española de Cooperación Internacional al Desarrollo
BCC	Behavior Change Communication
CAEPA	Water Supply and Sanitation Committee / Comité d'Accès à l'Eau Potable et à l'Assainissement
CAMEP	Metropolitan Public Water Utility / Centrale Autonome Métropolitaine d'Eau Potable
CDC	United States Centers for Disease Control and Prevention
CHW	Community Health Worker
CIDA	Canadian International Development Agency
CPE	Water Point Committee / Comité de Point d'Eau
DHS	Demographic Health Survey
DINEPA	National Water Directorate / Direction Nationale de l'Eau et de l'Assainissement
DPSPE	Direction de Promotion de la Santé et de la Protection de l'Environnement
EMIRA	Rapid Response Team / Equipe Mobile d'Intervention Rapide
GoH	Government of Haiti
IDB	Inter-American Development Bank
IDP	Internally Displaced Persons
IEC	Information, Education, and Communication
JICA	Japanese International Cooperation Agency
MARNDR	Ministry of Agriculture, Agriculture and Natural Resources and Rural Development / Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural
MEF	Ministry of Economy and Finances / Ministère de L'Économie et des Finances
MENFP	Ministry of National Education and Vocational Training / Ministère de l'Éducation Nationale et de la Formation Professionnelle
MICT	Ministry of Interior and Territorial Collectivities / Ministère de L'Intérieur et des Collectivités Territoriales
MSPP	Ministry of Public Health and Population / Ministère de Santé Publique et de la Population
MTPTC	Ministry of Public Work, Transportation and Communications / Ministère des Travaux Publics, Transports et Communications
NGO	Nongovernmental Organization
OIEE	Office of Infrastructure, Energy and Engineering
OREPA	Regional Water and Sanitation Office / Office Régional d'Eau Potable et d'Assainissement
PAHO / WHO	Pan American Health Organization / World Health Organization
PEPA	Water Platform / Plateforme Eau Potable
PSI	Population Services International
SIP	Performance Monitoring System / Système Informatique de Performance
SMCRS	Metropolitan Service for Collection of Solid Waste / Service Métropolitain de Collecte des Résidus Solides
SNEP	National Public Water and Sanitation Service / Service National d'Eau Potable
SOIL	Sustainable Organic Integrated Livelihoods
SSQH	Quality Health Services for Haiti Project / Services de Santé de Qualité pour Haïti
TEPAC	Communal Water and Sanitation Technicians / Techniciens en Eau Potable et en Assainissement pour les Communes
UNDP	United Nations Development Programme

URD	Rural Department Units / Unité Rurale Départementale
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WSP	Water and Sanitation Program (administered by the World Bank)

## EXECUTIVE SUMMARY

This Sector Assessment presents current conditions in Haiti's water, sanitation, and hygiene (WASH) sector with particular focus on rural areas and cholera hot spots and makes recommendations on future USAID programming in the sector.

This sector assessment was conducted in follow up to the launch of USAID's Water and Development Strategy (2013-2018), which identifies Haiti as a Tier 2 priority country for WASH programming. Tier 2 priority countries are generally countries in which relatively small investment levels are likely to generate significant impact in at least one dimension of WASH – such as first-time access to an improved drinking water source, first-time access to an improved sanitation facility, ending open defecation, or new hand washing practices. Six other countries have been targeted for similar sector assessments.

The aim of this WASH Sector Status and Trends Assessment is to examine the WASH sector in Haiti and USAID's role in the sector to strategically inform WASH programming for rural areas and cholera hot spots in Haiti under the Water and Development Strategy. The USAID/Haiti Mission preferred that the analysis focus on rural community WASH provision and cholera hot spot areas with a deeper analysis on sustainability of rural WASH projects funded by other major players in the sector, so as to inform potential future USAID programming in this sector in Haiti.

The Assessment Team conducted more than 20 interviews with representatives from governmental institutions, the USAID/Haiti mission, donors, and implementing partners. The team also carried out a field visit to Boucan Carré, a cholera hot spot community in the Central Plateau; and met with representatives from the Boucan Carré community, the Head of the Regional Water and Sanitation Office (OREPA) for the Central region, and the Communal Water and Sanitation Technician (TEPAC).

### ***Background***

Although Haiti has an average annual rainfall of 1460 mm (approximately 58 inches) and a high per capita potential renewable freshwater resources, it is considered among the poorest countries in terms of access to water supply due to the lack of adequate water storage infrastructure for proper management of floods and droughts and development of sustained water supply.

Despite the considerable increase in investments in the WASH sector since 2010, access to water and sanitation in Haiti is still the lowest in the Western Hemisphere. July 2014 UNICEF<sup>1</sup>'s estimates show that in rural areas 49% of the population has access to improved water sources, 20% has access to improved sanitation, and 38% practices open defecation. These low levels of water and sanitation services contributed to the severity and rapid spread of the cholera epidemic that began in Haiti in October 2010.

To face the challenge of weak public institutions in the water and sanitation sector, the Government of Haiti (GoH) enacted a new law in 2009 to re-organize the sector. The new water law created national and regional entities to develop and regulate the sector and control its actors. The following entities are relevant to the water and sanitation services in rural areas:

- The National Water and Sanitation Directorate (DINEPA) under the Ministry of Public Works, Transport and Communication (MTPTC) was created to develop and regulate the water and sanitation

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<sup>1</sup> UNICEF Overview July 2014.

sector at the national level, and to control its various actors. DINEPA hired, trained, and deployed 266 Communal Water and Sanitation Technicians (TEPACs) in 2012 to the 133 communes in the country; two (2) TEPACs are assigned to each commune.

- Four Regional Water and Sanitation Offices (OREPAs) in the West, North, Center, and South regions were established to implement the water and sanitation strategy at the regional level as decentralized entities of DINEPA. The Rural Departmental Units (URDs) are the decentralized structures of OREPAs in the rural areas. Water Supply and Sanitation Committees (CAEPAs) and Water Point Committees (CPEs) are responsible for the provision of water and sanitation in rural areas under the monitoring and supervision of the URDs.

In July 14, 2014, The United Nations' Secretary General, Ban Ki-Moon and the Haitian Prime Minister launched the Total Sanitation Campaign in a ceremony held at the Central Plateau. The campaign, which targets 20 communes at the national level during its first phase and 35 during its second phase, aims to support DINEPA's National Sanitation Plan. UNICEF and its partners started working on this campaign in six priority communes with the financial contribution of USD 14 million from the governments of Canada and Japan.

Prior to the earthquake, more than 3 million Haitians are still engaged in open defecation and poor hygiene practices.<sup>2</sup> According to the most recent demographic health survey,<sup>3</sup> 68% of the population uses acceptable treatment methods to treat their water, while 32% does not treat their water at all. Only 35% of the population (44% in urban areas and 28% in rural areas) washes their hands with water and soap. Haiti therefore has all key risk factors UNICEF cites for cholera transmission. A cholera epidemic was declared in Haiti in October 2010. Between October 2010 and November 2013, the United Nations cites 694,842 reported cases and 8,494 deaths.<sup>4</sup> To respond to the crisis, DINEPA and the Ministry of Health (MSPP) came together to draft a National Plan to Eliminate Cholera.<sup>5</sup> In June 2012, the Regional Coalition for Water and Sanitation to Eliminate Cholera on the Island of Hispaniola<sup>6</sup> was created. The coalition started as a partnership between the Pan American Health Organization/World Health Organization (PAHO/WHO), UNICEF, and the United States Center for Disease Control and Prevention (CDC). In July 2013, the coalition had increased to 21 partners.

UNICEF is currently coordinating the majority of the cholera response implemented by nongovernmental organizations (NGOs). The goal of UNICEF's strategy<sup>7</sup> is to "support MSPP and DINEPA to respond to and prevent cholera alerts over the next two years and to support the 10-year elimination plan by providing sustainable WASH solutions." The Cholera response implementation efforts have been generally successful. Starting in November 2013, rates have dropped off significantly, raising hope of cholera eradication among many stakeholders. However, there is still a widely-shared concern that cholera will reappear during the rainy season.

## ***Funding***

The majority of the activities in Haiti's WASH sector are donor-driven. DINEPA reports that, of the total funding for the sector between 2006 and 2015, only 1% is contributed by the Haitian government.<sup>8</sup> DINEPA's monthly expenditure for salary of its employees equals over 660,000 USD. Only 9% of these funds come from the public treasury and 39% from DINEPA funds; the remaining amount is paid by the

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<sup>2</sup> USAID/Haiti (2010). "Proposed Water, Sanitation and Hygiene Strategy."

<sup>3</sup> EMMUS-V. (2012). "Enquete Mortalité, Morbidité et Utilisation des Services."

<sup>4</sup> United Nations in Haiti. (2013). "Cholera in Haiti: An End in Sight."

<sup>5</sup> MSPP and DINEPA. (2013). "National Plan for the Elimination of Cholera in Haiti 2013-2022."

<sup>6</sup> PAHO. (2014). "Regional Coalition for Water and Sanitation to Eliminate Cholera in Hispaniola."

<sup>7</sup> UNICEF. (2013). "Strategy to Support the National Plan of the Haitian Government to Eliminate Cholera, June 2013-December 2015."

<sup>8</sup> DINEPA. "Présentation et Bilan 2012-2014."



Spanish Cooperation for International Cooperation and Development (AECID), the Inter-American Development Bank (IDB) and other donors.

Major donors of the overall WASH sector include AECID and IDB. Several other bilateral donors provide additional funding. Based on key stakeholder interviews, contributions from major donors include:

- IDB: The current portfolio of projects is valued at USD 200 million (USD 130 million of own funds). All the water and sanitation projects contribute to cholera reduction. Projects include WASH infrastructure in rural areas and in secondary cities and institutional support to DINEPA.
- AECID: USD 100 million is disbursed directly to DINEPA, and an additional USD 70 million is disbursed through the IDB; USD 10 million is earmarked for rural WASH (water points and sanitation).
- UNICEF: USD 16 million is earmarked for cholera prevention including USD 12 million from the Canadian International Development Agency (CIDA) and USD 2.5 million from the Japanese International Cooperation Agency (JICA).
- World Bank: USD 30 million for rural WASH (sanitation and water kiosks).
- Swiss Development Cooperation (SDC): USD 4 million including USD 1.5 million for strengthening URD water quality capacity and USD 2.5 million for a rural WASH implemented by the Swiss NGO Helvetas.
- CDC: USD 50 million for cholera response since October 2010 through fiscal year 2014. This support has included health and WASH activities (including TEPAC training).

## ***Landscape Analysis***

The following seven factors are used for sustainability analysis of both the rural water supply and rural sanitation and hygiene: 1) institutional, 2) management, 3) financial, 4) technical, 5) environmental, 6) social and behavior change, and 7) integration.

The landscape analysis revealed challenges and opportunities. Challenges include:

- Donor-driven funding of the sector.
- Low levels of sustainability of infrastructure.
- Centralized management of the sector.
- Lack of population willingness to pay for water services.
- Lack of population willingness to self-finance household sanitation and purchase water treatment products.

Opportunities include:

- DINEPA, with support of IDB, is moving towards advancing the water sector reform to the decentralization of the WASH sector according the 2009 sector law.
- Donors and partners have shown new momentum to support the Total Sanitation Campaign and the promotion of low-cost WASH technologies services in combination with sustainable financing strategies and private sector participation.
- Use by NGOs and donors of communication and outreach tools to promote willingness to pay for access to safe water; and potential use of legal instruments to enforce willingness to pay for access to safe water.
- DINEPA is interested in exploring incentives for self-finance of household sanitation.
- Increased coordination between health and WASH activities.
- Interest in promoting multiple water use systems.

## ***Key Recommendations***

The following are key recommendations for USAID/Haiti.

### **1. Build local government capacity to promote low-cost WASH technologies and support decentralization of WASH services**

Responsibility for water and sanitation in Haiti is in the process of shifting to regional and local entities, which lack the capacity to engage communities and develop sustainable WASH improvements. It is recommended that USAID/Haiti work with DINEPA to support decentralization of WASH services by building the capacity of regional and local entities to promote low-cost WASH technologies and engage communities in improving WASH services. Improving the competence of local entities in rural areas has the potential to empower both communities and local and municipal governments to more fully engage and expand coverage, as well as increase social and political stability.

### **2. Develop a strong focus on sanitation (i.e. safe disposal of human excreta) and hygiene behavior change**

Access to water and sanitation in Haiti is still the lowest in the Western Hemisphere. A strong behavioral change and communications program together with support for local supply of material for construction of latrines, and sanitation products can motivate communities to mobilize the resources needed for lasting sanitation improvements. It is proposed that USAID/Haiti activities build on lessons learned from the upcoming UNICEF and the AECID-led sanitation studies. Target areas would be coordinated with the UNICEF's National Sanitation Campaign.

Behavior change is vital for all WASH programs. Emphasis on the importance of the “soft” social interventions such as behavior change and social mobilization will increase the sustainability of WASH infrastructure. Components of a social program could include strengthening of TEPACs, development of information education communications (IEC) and behavior change communication (BCC) materials, community mobilization structures, etc. Integration of WASH activities with health programs focused on cholera and healthy behavior, through community health workers (CHWs) for example, could also be considered.

### **3. Apply proven, low-cost WASH technologies/services in tandem with sustainable financing strategies**

Households and communities can rarely afford the initial capital costs associated with WASH-related infrastructure. This is especially true in the Haitian context given the low willingness to pay of the population. Applying low-cost technologies – for example, ventilated improved pit latrines in rural areas– in combination with sustainable financing strategies and private sector participation could greatly increase coverage and enhance equity in Haiti's WASH sector. Lessons learned from the NGOs Sustainable Organic Integrated Livelihoods (SOIL) and Solidarité in low-cost sanitation technologies are recommended. In some regions of the country, rainwater harvesting could also be an interesting technology to pilot.

### **4. Coordinate with CDC on the nature of continued USG support to the TEPAC structure**

Since the emergence of cholera in October 2010 CDC has contributed to the development of the TEPAC structure throughout Haiti by providing training materials and funding. Based on conversations with CDC officials, funding for CDC's involvement is currently evaluated on an annual basis and is expected to decrease as cholera cases decrease.

TEPACs in general have a substantial amount of responsibilities that include follow-up of CAEPAs and CPEs' activities, inventory and evaluation of rural water infrastructure, technical support for operation and maintenance of water systems, control of water chlorination and water quality monitoring, and promotion of sanitation and hygiene behavioral change. This is beyond their background (typically secondary degree) and capacity. Their responsibilities need to be reviewed and streamlined based on their potential and capabilities to effectively accomplish their tasks.

As CDC is decreasing its funding for the TEPAC structure, it is recommended that USAID/Haiti support the review of the TEPAC mechanism based on the lessons learned from the past two years. Transition of certain responsibilities from CDC to USAID will ensure continuity of the support of the USG to the Haitian rural WASH sector.

#### **5. Support increasing willingness to pay for access to safe water**

The lack of willingness to pay for water services presents a major challenge for the sustainability of water infrastructure and for the successful treatment of water. It is recommended that USAID/Haiti build on lessons learned from the cholera outbreak control programs and from rural water supply systems that are operational to identify barriers and opportunities for willingness to pay. USAID/Haiti could develop communication and outreach tools, and support legal instruments to enforce willingness to pay for access to safe water. Social marketing and BCC/IEC materials need to be specifically designed for each project as the populations' practices and attitudes vary based on the region of the country. In parallel to increasing the willingness to pay of the population, it is recommended that USAID/Haiti work with DINEPA and OREPAs to set appropriate tariff schemes for water services. This topic is of key interest to other donor agencies as well and could provide a key collaboration opportunity since all donors are facing the transition from free services to payment schemes.

#### **6. Build on lessons learned from earthquake and cholera eradication emergency to improve WASH services**

Gather data and information about lessons learned and success stories from the earthquake and cholera emergency programs on coordination between government institutions, behavior change and social mobilization, water supply, sanitation and hygiene, etc. Build on this data and information for programming of future emergency interventions and for transitioning from WASH emergency to WASH development activities.

## INTRODUCTION

This Sector Assessment presents current conditions in Haiti’s water, sanitation, and hygiene (WASH) sector with particular focus on rural areas and cholera hot spots and makes recommendations on future USAID programming in the sector.

This sector assessment was conducted in follow up to the launch of USAID’s Water and Development Strategy (2013-2018), which identifies Haiti as a Tier 2 priority country for WASH programming based on the strategic application of limited USAID resources. Tier 2 priority countries are generally countries in which relatively small investment levels are likely to generate significant impact in at least one dimension of WASH – such as first-time access to an improved drinking water source, first-time access to an improved sanitation facility, ending open defecation, or new hand washing practices. The interventions may be concentrated in one sub-region or one subsector of WASH, but are expected to be catalytic in impact.

The Assessment Team conducted more than 20 interviews with representatives from governmental institutions, the United States Agency for International Development (USAID)/Haiti mission, donors, and implementing partners. The team also carried out a field visit to Boucan Carré, a cholera hot spot community in the Central Plateau, and met with representatives from this community and the Head of the Regional Water and Sanitation Office (OREPA) for the Central department and the Communal Water and Sanitation Technician (TEPAC).

This report is presented to USAID as a deliverable for the WASH Sector Status and Trends Assessment for Haiti conducted by Chemonics International.

## SCOPE

The aim of this WASH Sector Status and Trends Assessment is to examine the WASH sector in Haiti and USAID's role in the sector to strategically inform WASH programming for rural areas and cholera hot spots in Haiti under the Water and Development Strategy. This assessment is one of seven assessments conducted in prioritized countries. The principal audiences for the assessment are USAID/Haiti Mission staff, the Water Office, and the Global Water Coordinator in USAID/Washington's Economic Growth, Education, and Environment Bureau. The report will also be shared with other technical staff in Washington, including the Global Health WASH Team and Water Advisors for Regional Bureaus, and with current and future implementers and other WASH stakeholders for each evaluation country.

The original assessment tasks were:

Task 1: A landscape analysis

Evaluation Question 1: What are the current activities in and beneficiaries of the WASH sector? What emphasis, if any, is there on sustainability?

Evaluation Question 2: To what extent does USAID shape the programming in the WASH sector?

Task 2: A program sustainability assessment

Evaluation Question 3: What is the likelihood of sustainability of USAID WASH programs?

Given that there are no discrete standalone USAID-funded WASH projects in Haiti that lend themselves to the application of the Sustainability Index Tool, the Haiti assessment was tailored to not include Task 2. Based on conversations with the USAID/Haiti Mission, it was preferred that Task 1 focus on rural community WASH provision and cholera hot spot areas with a deeper analysis on sustainability of rural WASH projects funded by other major players in the sector, so as to inform sustainability of potential future USAID programming in this sector in Haiti. Chemonics was also requested to review WASH related activities conducted by the USAID Office of Infrastructure, Energy and Engineering (OIEE) in programs related to housing, hospitals, and food security.

The framework for the WASH assessment in Haiti follows the key factors of the WASH Sustainability Index Tool, developed by Aquaconsult for USAID. Based on the Tool, Chemonics International worked with Development Alternatives Incorporated (DAI) and TetraTech to develop a "WASH Sector Status and Trends Framework Assessment Document". The document specifies the following seven key factors that influence the sustainability of WASH interventions: 1) institutional; 2) management; 3) financial; 4) technical; 5) environmental; 6) social; and 7) behavior change.

For the Haiti assessment, one additional factor of analysis is proposed to evaluate integration of WASH in other programs. The "social" and "behavior change" factors were combined into one single factor. Therefore, the factors analyzed in this assessment are the following: 1) institutional, 2) management, 3) financial, 4) technical, 5) environmental, 6) social and behavior change, and 7) integration.

## BACKGROUND

### *Haiti WASH Context*

#### Water Resources

Although Haiti has an average annual rainfall of 1460 mm (approximately 58 inches), and a high per capita potential renewable freshwater resources, it is considered among the poorest countries in terms of access to water supply due to the lack of adequate water storage infrastructure for proper management of floods and droughts and development of sustained water supply. The quality and availability of hydrologic data is low, which constrains the ability to effectively plan and manage Haiti's water resources.

According to USAID/Haiti's proposed 2010 WASH Strategy, sufficient and sustainable access to water resources is key to reducing vulnerabilities to natural disasters/climate variability/change and food insecurity. Investments in water and sanitation infrastructure, in particular for water points and water storage, combined with soft programs to build capacity to manage and sustain this infrastructure and increase sanitation and hygiene awareness, can build resiliency to future natural shocks by protecting human health, animal survival, and local food security.

#### WASH Access Overview

According to the 2010 USAID/Haiti WASH strategy, coverage of access to safe drinking water and sanitation was low before the earthquake, which resulted in the loss of over 200,000 lives. The WHO/UNICEF 2008 report, using the Joint Monitoring Program definitions, estimated access to improved water source at 70% in urban areas and 51% in rural areas. Improved sanitation coverage is 24% for urban areas and 12% for rural areas. Counting shared facilities, the sanitation coverage goes up to 53% for urban areas and 18% for rural areas. July 2014 UNICEF<sup>9</sup> estimates show that in rural areas 49% have access to improved water sources, 20% have access to improved sanitation, and 38% practice open defecation. These low water and sanitation services contributed to the severity and rapid spread of the cholera epidemic that began in Haiti in October 2010, and has resulted in 658,563 reported affected cases and 8,111 reported deaths as of June 2, 2013.

Hygiene behavior change falls under the Ministry of Health's Communication Unit (DPSPE). This unit has incorporated the materials compiled by the WASH Cluster to develop a set of standard hygiene behavior change messages and materials.

#### *Institutional/Legal Framework*

To face the challenge of weak public institutions in the water and sanitation sector, the Government of Haiti (GoH) enacted a new law in 2009 to re-organize the sector. The new water law created national and regional entities to develop and regulate the sector and control its actors. The following entities are the key actors in the provision of water and sanitation services in rural areas:

- **The National Water and Sanitation Directorate (DINEPA):** Housed under the Ministry of Public Works, Transport and Communication (MTPTC), DINEPA was created to develop and regulate the water and sanitation sector at the national level, and to control its various actors. The responsibilities of DINEPA include: 1) the preparation of the sector strategy and policy in coordination with the relevant Ministries and institutions, 2) the establishment of water tariff, 3) the establishment of water quality

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<sup>9</sup> UNICEF Overview July 2014.

standards for water supply and sanitation, approval of water services contracts, and 4) the preparation and monitoring of key performance indicators in the sector.

- **Regional Water and Sanitation Offices:** Under the 2009 law, the two former public utilities, the National Public Water and Sanitation Service (SNEP)<sup>10</sup> and the Metropolitan Public Water Utility (CAMEP)<sup>11</sup> were dissolved<sup>12</sup>. Four OREPAs (West, North, Center, and South) were established to implement the water and sanitation strategy at the regional level and serve as decentralized entities of DINEPA. The OREPAs have ownership of the water and sanitation infrastructures and are responsible for the implementation of sector policy, monitoring of the resources, and supervision of the water and sanitation operators in their territorial divisions.

The Rural Departmental Units (URDs) are the decentralized structures of OREPAs for rural areas. The role of the URDs is to ensure compliance with the quality of water and sanitation services in rural areas at the departmental level on behalf of the OREPAs. Water Supply and Sanitation Committees (CAEPAs) and Water Point Committees (CPEs) are in charge of providing water and sanitation in rural areas under the monitoring and supervision of the URDs. There are around 650 CAEPAs in rural areas. The CAEPAs are responsible for the management and the functioning of water systems for a population of less than 10,000 people. The infrastructure can have one or more water sources and must have at least two distribution points. CPEs are responsible for water supply for a population living in a radius of 500 meters around a single water distribution point. If the system has a private operator, the operator is supervised by the CAEPA.

To respond to the critical WASH needs in rural areas and to improve access to water services, DINEPA hired, trained, and deployed 266 Communal Water and Sanitation Technicians in 2012 to the 133 communes in the country, with 2 TEPAC members assigned to each commune. The TEPAC structure has been funded by the World Bank, UNICEF, the Inter American Development Bank (IDB) and the United States Centers for Disease Control and Prevention (CDC).<sup>13</sup> TEPACs typically have a secondary education and are responsible for the inventory and the follow-up of rural WASH systems. In conjunction with DINEPA, CDC developed a set of training modules for the TEPACs.<sup>14</sup> DINEPA plans to hold yearly refresher courses for these technicians to go over the material and introduce any new theme.

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<sup>10</sup> SNEP was in charge of water supply and sanitation all over the country, except Port-au-Prince.

<sup>11</sup> CAMEP was in charge of water supply and sanitation in Port-au-Prince metropolitan area.

<sup>12</sup> Following the ratification of the 2009 water law, DINEPA changed the names of the former SNEP and CAMEP offices to Technical Operation Centers (CTEs).

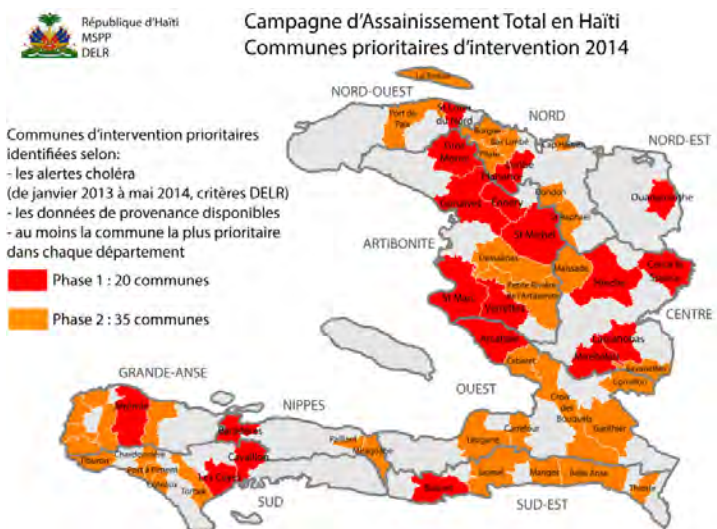
<sup>13</sup> DINEPA (2014). « Rapport Capitalisation Programme TEPAC, 2012-2013. »

<sup>14</sup> Hubbard et al. (2014). "Development of Haiti's Rural Water, Sanitation and Hygiene Workforce."

## Context on Rural WASH and Cholera

### Rural WASH

DINEPA has set a series of goals to increase access and improve management of water and sanitation services.<sup>15</sup> These goals include increasing access to water in rural areas from 26% to 40% and to sanitation from 10% at baseline to 20% by 2015. The majority of donors and NGOs have focused on water access; this trend is changing, however. In July 14, 2014, The United Nations' Secretary General, Ban Ki-Moon and the Haitian Prime Minister launched the Total Sanitation Campaign in a ceremony held at the Central Plateau. The campaign, which targets 20 communes during its first phase and 35 during its second phase (see the graphic to the right), aims to support DINEPA's National Sanitation Plan. Priority communes were selected based on cholera incidence with at least



one commune per department. As part of the Total Sanitation Campaign (2014-2019), UNICEF and its partners are currently working in six priority communes with the financial contribution of USD 14 million from the governments of Canada and Japan. The Total Sanitation Campaign targets 40% of the rural population living in 55 communes covering approximately 3.8 million people, 2500 schools, and 500 health centers. The campaign aims to achieve zero open defecation, increasing access to water and sanitation infrastructure in primary and secondary schools, and health centers, and encourage greater household investment in durable latrines.

UNICEF is also leading a sanitation marketing study that focuses both on the supply and demand for sanitation products; results are expected in 2014. The Spanish Cooperation (AECID) is conducting a parallel randomized control study to determine what interventions will promote sanitation uptake in communities; this study is being completed with support from the University of California Berkley and results are expected in 2016.

DINEPA is currently conducting an inventory of WASH systems in the country including mapping out water networks, kiosks and fountains (both functional and non-functional). A total of 438 systems are mapped, including 1096 kiosks (55% of which are functional) and 2266 fountains (59% of which are functional)<sup>16</sup>. In order to track sustainability of systems, DINEPA has created a Performance Monitoring System (Système Informatique de Performance, SIP) which follows 21 factors including number of users, water quality analyses results, logistics and finances of water points. Water quality testing is the responsibility of the TEPACs. They, along with the CAEPAs, use SIS-KLOR to measure the quality of the water. The data is sent via SMS to DINEPA to analyze the data and produce reports that are subsequently distributed to the URDs, OREPAs, users, TEPACs and the general public.<sup>17</sup>

<sup>15</sup> DINEPA. "Plan d'Action 2011-2015."

<sup>16</sup> DINEPA. (June 2014). "Approche Eau Potable en Milieu Rural: Vers la Durabilité des Services."

<sup>17</sup> DINEPA, (June 2014). « Traitement et Contrôle de la Qualité de l'Eau: Hypochlorateurs et Sisklor ».



## Cholera

Prior to the earthquake, more than 3 million Haitians engaged in open defecation and poor hygiene practices.<sup>18</sup> According to the most recent demographic health survey,<sup>19</sup> 68% of the population uses acceptable treatment methods to treat their water, while 32% does not treat their water at all. Only 35% of the population (44% in urban areas and 28% in rural areas) washes their hands with water and soap. Haiti therefore has all key risk factors UNICEF cites for cholera transmission, including: “1) poor access to and use of water and limitations to monitoring and maintaining water quality; 2) practice of open defecation and/or poor access to and use of appropriate sanitation; 3) poor hygiene practices (including hand washing and safe food preparation); 4) crowded settings; 5) seasonal upsurges [of water]; and 6) displacement or population movements.”<sup>20</sup>

A cholera epidemic was declared in Haiti in October 2010. Between October 2010 and November 2013, the United Nations cites 694,842 reported cases and 8,494 deaths.<sup>21</sup> To respond to the crisis, DINEPA and the Ministry of Health (MSPP) came together to draft a National Plan to Eliminate Cholera.<sup>22</sup> The plan stresses four key action areas: 1) water and sanitation; 2) epidemiologic surveillance; 3) health promotion for behavior change; and 4) care of infected persons in health institutions. In June 2012, the Regional Coalition for Water and Sanitation to Eliminate Cholera on the Island of Hispaniola<sup>23</sup> was created. The coalition started as a partnership between the Pan American Health Organization/World Health Organization (PAHO/WHO), UNICEF and CDC. By July 2013, the coalition had increased to 21 partners. The coalition brings together many actors in the health and WASH sectors integrating short and long-term solutions. DINEPA and MSPP are leading the effort for Haiti, with future support coming from a technical team and a steering committee chaired by the Prime Minister. Key challenges include the fact that there are currently no performance indicators and there is a funding gap.

UNICEF is currently coordinating the majority of the cholera response implemented by nongovernmental organizations (NGOs). The goal of UNICEF’s strategy<sup>24</sup> is to “support MSPP and DINEPA to respond to and prevent cholera alerts over the next two years and to support the 10-year elimination plan by providing sustainable WASH solutions.” The strategy focuses on three main components: 1) coordination; 2) response (within 48 hours of a cholera outbreak alert); and 3) prevention (community-based WASH projects, hygiene promotion, etc.). UNICEF has selected a WASH NGO per department to coordinate and implement activities; these NGOs include Partners in Health/Zanmi Lasanté, Oxfam, Action Against Hunger(ACF), Solidarités and ACTED. These WASH NGOs have recently been paired with health NGOs to increase the integration of WASH and health activities to hopefully provide long-term solutions. In responding to an outbreak, NGOs must coordinate with the TEPACs and the newly formed Rapid Response Team (EMIRA) of MSPP.

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<sup>18</sup> USAID/Haiti (2010). “Proposed Water, Sanitation and Hygiene Strategy.”

<sup>19</sup> EMMUS-V. (2012). “Enquete Mortalité, Morbidité et Utilisation des Services.”

<sup>20</sup> UNICEF. (2013). “Cholera Toolkit.”

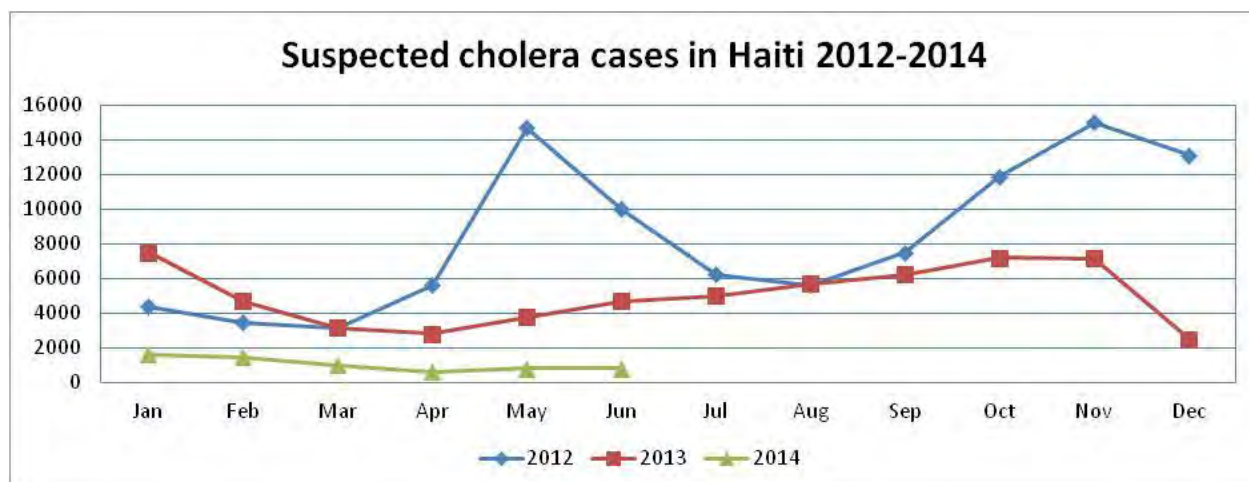
<sup>21</sup> United Nations in Haiti. (2013). “Cholera in Haiti: An End in Sight.”

<sup>22</sup> MSPP and DINEPA. (2013). “National Plan for the Elimination of Cholera in Haiti 2013-2022.”

<sup>23</sup> PAHO. (2014). “Regional Coalition for Water and Sanitation to Eliminate Cholera in Hispaniola.”

<sup>24</sup> UNICEF. (2013). “Strategy to Support the National Plan of the Haitian Government to Eliminate Cholera, June 2013-December 2015.”

The cholera response has been generally successful. Since January 2012, two main peaks of cholera outbreaks were observed, the first between May and July 2012 and the second between November 2012 and February 2013.<sup>25</sup> Starting in November 2013, rates have dropped off significantly, raising hope of cholera eradication among many stakeholders. The chart below, taken from UNICEF reports<sup>26</sup>, shows the total number of cholera cases seen from January 2012 to June 2014.



## METHODOLOGY

This section provides an overview of the workflow and a description of the interviews conducted in Haiti in a field trip during July 14-25, 2014.

### *Overview and Sequencing*

The Assessment Team reviewed documents that covered WASH activities over the past fifteen years with emphasis on rural areas and cholera hot spots, conducted interviews with stakeholders in Port-au-Prince, and carried out a field visit to a cholera hot spot in a rural community at the Centre department. Details on the sequencing of the work are as follows:

- Reviewed the USAID WASH Sector Status and Trends Framework, which formed the basis for the Inception Report.
- Conducted a desk review of more than forty documents including USAID/Haiti's proposed WASH strategy (2010) and internet resources to assess the state of existing information and identify information gaps for the WASH sector in rural areas and cholera hot spots. The desk review has been updated to include information obtained during the key stakeholders interviews and presented in Annex A. Some of the documents were provided by the USAID/Haiti mission, GoH Ministries and institutions such as the Ministry of Education and Vocational Training (MENFP) and DINEPA, and implementing agencies.
- Submitted Final Work Plan and Inception Report in June 2014. The Work Plan identified interviewees in consultation with USAID/Haiti mission.
- Conducted interviews in Haiti with key donors, DINEPA, and key implementers in rural WASH and cholera hot spot areas to address priority information gaps for the landscape analysis and assess the sustainability of rural WASH activities. Carried out field visit to Boucan Carré, one of the rural cholera hot spot communities, and conducted a focus group discussion with representatives of the

<sup>25</sup> Statistics provided by UNICEF.

<sup>26</sup> Chart taken UNICEF. (2014). "UNICEF Proposal to Request Funds from DFID" and UNICEF Overview July 2014. "

communities to identify their WASH challenges and constraints. The team also solicited their input and recommendation for improvement of the services. During this field visit, the team also met with the OREPA Representative and the TEPAC in charge of the community.

The team held a meeting with the USAID/Haiti mission that included Michele Russell, Health Office Chief, Wenser Estimé, Senior Public Health Advisor, Abdel Abellard, Deputy Mission Environmental Officer, Terrence Kramer, Office Chief, Office of Infrastructure, and James Edwin Woolley, Senior Agronomist.

The team had an exit debrief with USAID/Haiti mission that included Shawn Jones, Acting Director of the Program Office and Abdel Abellard, Deputy Mission Environmental Officer.

## FINDINGS AND RECOMMENDATIONS

### *Landscape Analysis*

#### WASH Investments

DINEPA has published the budget for all its activities for the period between 2011 and 2015. The budget includes the following:<sup>27</sup>

Strategic Objective	Budget (million USD)
Strengthening Sectoral Governance	20.24
Strengthening Emergency Response	33.19
Strengthening the Port-au-Prince System	49
Sanitation (including excreta management in secondary cities and sanitation promotion)	19.65
Improving Operational Performance (including strengthening OREPAs, CAEPAs, etc.)	45.11
Increasing Access to Water and Sanitation	88.27 (including 17.9 million for rural areas)
Improving Water Quality	6.6
Training and Innovation	7.31
Hygiene Communication, Sensitization and Education	5.65

The majority of the WASH sector is driven by donor funding. DINEPA reports that, of the total funding for the sector between 2006 and 2015, only 1% is contributed by the Haitian government.<sup>28</sup> DINEPA's monthly expenditure for salary of its employees equals to over 660,000 USD. Only 9% of these funds come from the public treasury and 39% are from DINEPA funds; the remaining amount is paid by AECID, the IDB and other donors.

Major donors of the overall WASH sector include AECID and the IDB. Several other bilateral donors provide additional funding. Based on key stakeholder interviews, contributions from major donors include:

- IDB: The current portfolio of projects is valued at USD 200 million (USD 130 million of own funds). All these projects contribute to cholera reduction. Projects include rural WASH, WASH in secondary cities and institutional support to DINEPA.
- AECID: USD 100 million is disbursed directly to DINEPA, and an additional 70 million is disbursed through the IDB, USD 10 million is earmarked for rural WASH (water points and sanitation).
- UNICEF: USD 16 million is earmarked for cholera prevention including USD 12 million from the Canadian International Development Agency (CIDA) and USD 2.5 million from the Japanese International Cooperation Agency (JICA).
- World Bank: USD 30 million for rural WASH (sanitation and water kiosks).
- Swiss Development Cooperation (SDC): USD 4 million including USD 1.5 million for strengthening URD water quality capacity and USD 2.5 million for a rural WASH program implemented by the Swiss NGO Helvetas.
- CDC: USD 50 million for cholera response since October 2010 through fiscal year 2014. This support included health and WASH activities (including TEPAC training).

<sup>27</sup> DINEPA (2012). "Reforme, Modernisation et Investissements dans le Secteur de l'Eau Potable et Assainissement en Haïti : Plan Quinquennal 2011-2015."

<sup>28</sup> DINEPA. "Présentation et Bilan 2012-2014."

Specific programs implemented by DINEPA through donor funding for the period between 2011 and 2015 include:<sup>29</sup>

Donor	Project Name	Total (in USD)	Zone	Topic
AECID	Bilateral Fund	103,600,000	N/A	N/A
IDB	Secondary Cities	25,767,000	Secondary cities	Water and Sanitation
IDB / AECID	Water and Sanitation Program RMPP	50,000,000	Metropolitan Port-au-Prince	Water and Sanitation
IDB / AECID	Water and Sanitation – Secondary Cities II	39,000,000	Secondary Cities	Water and Sanitation
IDB	Rural Water and Sanitation – EPAR I	15,000,000	Rural	Water and Sanitation
IDB / AECID	Rural Water and Sanitation – EPAR II	10,000,000	Rural	Water and Sanitation
IDB / AECID	Cholera Emergency Response	5,000,000	N/A	Cholera Response
IDB	Technical Assistance to RMPP	1,500,000	Metropolitan Port-au-Prince	Water
World Bank	Rural Water and Sanitation	10,000,000	Rural	Water and Sanitation
SDC	Quality of Water in Rural Areas	500,000	Rural	Water

## WASH Beneficiaries

Statistics for WASH access vary widely between data sources, most likely due to varying definitions of “access:”

- The recent demographic health survey (DHS), conducted in 2012, reports that 64.5% of the Haitian population (48.9% in rural areas) has access to an improved water source and that 27.7% of the population (20.4% in rural areas) has access to unshared improved sanitation.<sup>30</sup>
- The most recent Joint Monitoring Programme data<sup>31</sup> indicate that, in 2012, national water coverage was 62.4% (74.6% in urban areas and 47.5% in rural areas). Access to sanitation is estimated at 24.4% at the national level (16.3% in rural areas and 31.0% in urban areas). Rural sanitation figures showed a slight improvement from 1990 to current levels; urban sanitation statistics, however, suggest a decrease in access. Water access statistics, on the other hand, show a decrease both in urban and rural settings between 1990 and 2012.

<sup>29</sup> DINEPA (2012). “Reforme, Modernisation et Investissements dans le Secteur de l’Eau Potable et Assainissement en Haïti : Plan Quinquennal 2011-2015. ”

<sup>30</sup>EMMUS-V. (2012). “Enquête Mortalité, Morbidité et Utilisation des Services. ”

<sup>31</sup> <http://www.wssinfo.org/data-estimates/tables/>.

## Coordination Mechanisms

There are several key coordination mechanisms within the sector. At the national level, there is the “table sectorielle” which meets once a month with the participation of the government, donors and the NGO water platform (PEPA). The Ministry of Economy and Finance, Ministry of the Interior, MSPP, Chamber of Commerce and the Ministry of Environment are all on the proposed DINEPA Board.<sup>32</sup> This will support coordination at the upper levels of government, if the Board is instated and formalized through mechanisms such as MOUs. There are also the sector tables which are supposed to meet every two months at the national and departmental meetings. At the local levels, there is coordination between technicians on the ground during implementation of projects. There is also a piloting committee of the DINEPA modules, which includes the MSPP.

For cholera, UNICEF is coordinating activities at the national level with DINEPA, MSPP, OREPA, UN agencies and NGOs. The main NGOs include Partners in Health / Zanmi Lasanté, Oxfam, ACF, Solidarités, and ACTED.

## *Sustainability Analysis*

Building on the above, the following section assesses the current status of the WASH sector in Haiti through a sustainability lens. Seven factors are used for the sustainability analysis: 1) institutional, 2) management, 3) financial, 4) technical, 5) environmental, 6) social and behavior change, and 7) integration.

## Water

### *Institutional*

As mentioned in the background section, at the national level, DINEPA was created in 2009 to develop and regulate the water and sanitation sector and “control” the different actors acting in the sector. DINEPA cites several key strategic objectives for the 2011-2015 period;<sup>33</sup> these include:

- Improvements in operational performance including the establishment of organizational structures, transfer of services to the OREPAs and drafting of regional inventories,
- Improvements in access including water and sanitation works in rural areas,
- Promotion of sanitation and excreta management in secondary cities,
- Strengthening of sectoral governance, including the development of performance indicators,
- Development of technical standards for water supply and sanitation,
- Strengthening of emergency response including the implementation of a sectoral cholera response strategy; improvement in water quality including establishment of water quality norms at the national level and programs focused on water quality control and on household water treatment,
- Hygiene communication, sensitization and education including the elaboration and distribution of educational materials,
- Training and innovation.

Since its creation, DINEPA has been addressing both the earthquake disaster and the cholera outbreak. These humanitarian emergencies have slowed key sector reforms, including the establishment of a Board of Directors and the drafting and approval of organic laws for its decentralized structure. The IDB, as the largest donor to DINEPA, has established a policy based grant for the institutional strengthening and

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<sup>32</sup> Le Moniteur. (2009). “Loi Cadre Portant Organisation du Secteur de l’Eau Potable et de l’Assainissement. ”

<sup>33</sup> DINEPA. “Plan d’Action 2011-2015.”

reform of the sector. The grant disbursement is conditioned on the achievement of key result indicators. These conditions target the following four key achievements:

- Finalization of the legal framework including the formation of a board of directors at the national level, and organic laws for the decentralized structure,
- Strengthening of DINEPA's capacity, specifically in planning, regulation and decentralization. This will involve an update to the sector strategy,
- Increased service provider performance in the cities of St Marc and Port-au-Prince,
- Establishment and creation of operational manuals for excreta treatment stations.

In addition to its responsibility for the development, planning and regulation of the water and sanitation sector, DINEPA has taken the role of an executing agency of investment projects financed in majority by international donors to respond to the earthquake and cholera emergencies. As a result, OREPAs and URDs have not been strengthened and are not able to operate adequately. Currently OREPAs, URDs, CAEPAs and CPEs do not have organic laws that define their functions and responsibilities. Both OREPAs and URDs have limited authority, funding, and human resources. As stated earlier, DINEPA is working with IDB to overcome this issue to advance the decentralization of WASH services as stipulated in the 2009 water sector law.

Based on interviews with DINEPA, IDB, and AECID employees, the tendency is to strengthen OREPAs and URDs, and to devolve WASH services to municipalities. This may create political dependency of water and sanitation services. Ideally, WASH services can be devolved to the municipal level but need to be organically linked to DINEPA and OREPAs to ensure proper governance and sustainability of the sector.

At the community level, CAEPAs and CPEs are often faced with the challenge of poorly operating systems. For instance, the water system in Boucan Carré operates only one hour per week despite the fact that the community is located in a cholera hot spot and has a cholera treatment center. In addition, CAEPAs and CPEs are not appropriately instituted. They require a clear mandate with defined functions and responsibilities, and a legal status for collection of service fees to sustain the operation and maintenance of the water systems.

TEPACs are hired by DINEPA to provide their services to the local communities. Devolvement of water services to OREPAs, URDs or municipalities need to consider institutionalization of TEPAC services at the community level.

DINEPA's rural department is preparing for the evaluation of the 2008-2015 rural water supply sector strategic plan and 2011-2015 action plan to 1) assess current conditions, 2) identify challenges, constraints and opportunities, and 3) revise the strategic plan and action plan. This would be an opportunity for DINEPA to advance the decentralization of the sector and institute it at the national, regional, and local levels, as well as create the enabling environment for the improvement and sustainability of WASH services.

Given that the WASH sector is highly connected to other sectors such as health, environment, finance, and development; the 2009 water law has specifically included representatives of these sectors in the DINEPA Board of Directors<sup>34</sup> to enforce coordination among the relevant Ministries and institutions.

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<sup>34</sup> DINEPA Board of Directors is composed of the following members: 1) Minister of MTPTC as president, 2) Representative of the Ministry of Economy and Finances (MEF) as Vice-President, 3) Representative of the Ministry of Interior and Territorial Collectivities (MICT), 4) Representative of the Federations of Chambers of Commerce and Industry in Haiti, 5) Representative of the Ministry of Environment, and 6) Representative of the Ministry of Public Health and Population (MSPP).

DINEPA needs to involve these sectors and representatives of relevant public institutions, private sector, and regional and local entities to develop a robust model for the institutionalization of the rural WASH sector that take into consideration all key factors that contribute to the improvement and sustainability of access to WASH in Haiti's rural areas and cholera hotspot areas<sup>35</sup>.

DINEPA needs to build on its experience of the past four years to carry out a comprehensive and participatory institutionalization of WASH across all national, regional, and local entities to: 1) clearly define the various functions to develop and regulate the sector, control its actors, and gradually sustain safe access to water and improved sanitation and hygiene; and 2) identify for each function the roles and responsibilities of lead and supporting institutions/entities at the national, regional, and community levels. The participatory institutionalization of the sector will not only streamline responsibilities of DINEPA, OREPAs, URDs, CAEPAs, CPEs, and TEPACs, it will also clarify areas of collaboration with other Ministries such as the MSPP on routine and emergency (cholera control), WASH and health matters and the Ministry of Environment on the protection and sustainability of surface and groundwater resources. Moreover, the institutionalization of the sector will pave the way for the regulation of the sector where organic laws can be developed based on clear functions and responsibilities of the various WASH actors.

### *Management*

At the national level, DINEPA's rural department has developed the rural water supply strategy and action plan (2011-2015). This department also developed a Performance Monitoring System that tracks 21 key management factors related to water distribution and water consumption, number of beneficiaries, water quality, payment levels, logistics, etc. Data are uploaded monthly to the central database and provide DINEPA, OREPAs, and URDs with important information that is essential to the management of water systems. The development of the rural water supply functions, responsibilities and roles will assist DINEPA in transitioning to the inclusive and transparent management of the sector. DINEPA needs to streamline job descriptions, human resources' capacity, strategic and action plans, and performance indicators according to its respective development, policy, regulation, and actors control functions and responsibilities.

At the sub-national level, OREPAs and URDs have limited management experience based on their current role, capacity, and resources. Their functions, role, and responsibilities are expected to evolve with the implementation of the decentralization reform as per the 2009 law. The staffing and capacity building of the OREPAs need to be aligned with the roles and responsibilities that will be identified in the WASH institutional reform. At the communal level, TEPACs have been trained and deployed to the communes to support the management and sustainability of WASH systems. TEPACs typically have a secondary education and are responsible for a substantial amount of tasks including follow-up of CAEPAs and CPEs' activities, inventory and evaluation of rural water infrastructure, technical support for operation and maintenance of water systems, control of water chlorination and water quality monitoring, and promotion of sanitation and hygiene behavioral change. CAEPAs and CPEs are made up of volunteers. Their strength depends on the availability and reliability of water systems in their respective communities. For instance, the CAEPA in Boucan Carré has weakened (only two out of six members are still active) due to the deterioration of the water system. On the other, in functioning water systems, CAEPAs and CPEs are more empowered and have more credibility for the collection of service

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<sup>35</sup> The Global Water Operators Partnership Alliance is developing a Guide for Performance Improvement of Water Utilities in developing countries (M. Chebaane, in progress). This guide includes 20 factors or modules for improvement of the performance of water and sanitation utilities to achieve the water and sanitation Millennium Development Goals and the newly developed UNITED Nations Sustainable Development Goals. The 20 factors cover a broad range of areas that include human resources management, financial management, policy and legal support, strategic planning and business planning, communication and outreach, technical support (non-revenue water, revenue collection, operation and maintenance, asset management, water treatment, information communication technology), extension of water services, extension of sanitation and hygiene services, expansion of WASH of services to poor household, water quality and water safety, sustainability of water resources and integrated water resources management, water conservation, energy conservation, and climate change resilience.



fees to maintain and sustain their systems. According to USAID/Haiti's proposed water strategy (2010), increased access to water in rural areas will also empower both communities and local municipal government to be more fully engaged in sustaining and expanding the water systems. Continuous training of CAEPAs and CPEs is required to effectively execute their functions, especially in communication and outreach. The TEPACs program needs to be evaluated and strengthened.

### *Financial*

Currently DINEPA and its decentralized structure do not have an integrated accounting system which would ensure accuracy and reliability of accounting information.<sup>36</sup> There is no national policy on tariffs for water. Certain cities, such as St Marc, have developed such plans. DINEPA has developed terms of reference to elaborate a national tariff policy. Future payment schemes will depend on the water system and on the population that benefit from this system. A socioeconomic assessment will guide the establishment of the tariff for the various systems. Currently, 30% of systems being tracked report no payment for services while another 20% are undeclared. DINEPA's long-term goal is to have a feedback accountability loop so that community members will know what is being reported by the CAEPA.

Regarding general financing of the sector, as mentioned above, the overall budget for DINEPA for the period between 2011 and 2015 is slightly over USD 275 million.<sup>37</sup> This funding comes in large part from the IDB and AECID. A little over USD 88 million of this total is earmarked for construction / rehabilitation of rural and urban water infrastructure.

As there is very low collection of tariffs and no related policy, there is very limited funding at the decentralized level. The functioning of TEPACs and the URDs is 100% donor-funded, with a potential gap in funding at the end of September 2014; DINEPA reports a total cost of USD 1.6 million per year for the TEPAC program.<sup>38</sup>

According to data collected by DINEPA,<sup>39</sup> 25% of CAEPAs do not collect tariffs; another 40% have not declared whether or not they collect tariffs. Only 10% of systems have at least 10,000 gourdes (equivalent to around USD 220) in their accounts. Based on discussions in Boucan Carré, CAEPAs are weakened because of their lack of legal status and their inability to open a bank account. These problems inhibit the transparency of and accountability for funds received.

A key challenge to financial sustainability of the entire WASH system is the lack of willingness to pay of the population for water services. According to AECID, there are only 70,000 active DINEPA clients nationwide (meaning individuals who pay for water services); 40,000 of these are in the Port-au-Prince metropolitan area. One of the main issues for the reluctance to pay is the low quality of services. In rural areas, people often access water from unsafe water sources (rivers, lakes, wells, or springs). Based on discussions with community representatives in Boucan Carré, people are willing to pay for dependable and safe water. According to CDC, people have shown an increased willingness to pay for water quality, yet they are willing to pay a very small amount (50 gourdes, a little over one USD) per month per family.

### *Technical*

At the national level, according to USAID/Haiti's proposed WASH strategy, Haiti has poor water and sanitation infrastructure and high levels of physical water loss. As mentioned earlier, DINEPA's rural department has developed an inventory of rural WASH systems including total number of water networks, kiosks and fountains. Based on this inventory, more than one third of existing water kiosks are

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<sup>36</sup> IDB (2014). "Institutional Strengthening and Reform of the Water and Sanitation Sector I, Grant Proposal".

<sup>37</sup> DINEPA. "Plan d'Action 2011-2015."

<sup>38</sup> DINEPA (2014). "Financement de la Déconcentration."

<sup>39</sup> DINEPA (2014). "Suivi des Indicateurs de Performance des Systèmes d'Approvisionnement en Eau Potable en Milieu Rural. "

out of service in the Nord, Sud, Grande Anse, and Artibonite departments. Around 58.4% of existing water fountains are functional, only 37% of these systems have chlorination systems.

DINEPA's rural department has developed a set of comprehensive technical manuals (Référentiel Technique) which include 119 modules for standards related to the design, construction, operation, and management of water and sanitation systems; all executing agencies are expected to use these manuals, yet there is currently no regulation to enforce this measure. The manual was prepared with the support of UNICEF and CDC and uses proven practices on water and sanitation in the Caribbean region and Africa. Training on the use of these manuals is essential for the OREPAs, URDs, TEPACs, CAEPAs, CPES, NGOs, and private contractors to harmonize design and construction of water infrastructure and operation and maintenance of water systems. Work on the preparation of water quality national standards is planned under the current (2011-2015) strategic plan.

### *Environmental*

Pollution of water resources is a significant problem in Haiti. Agricultural and industrial activities and untreated sewage have contaminated water resources, especially groundwater, in many areas. Deforestation is another serious issue for water resource management and environmental protection in Haiti. The Post Earthquake USG Haiti Strategy reports that 85% of Haiti's watersheds are degraded. There is only 2% forest coverage. Rates of deforestation have accelerated soil erosion causing siltation of water systems and reservoirs, decreased agricultural production, reduced groundwater recharges, and increased runoff which in turn damages mangroves and barrier reefs. The Government of Haiti established a National Agriculture Investment Plan for 30 watersheds; activities include watershed management, irrigation and rural infrastructure. Deforestation is a major issue for water resources, agricultural production, and environmental protection.

Compliance with USAID's Environmental Procedures (Reg. 22 CFR), including appropriate assessment, mitigation, and monitoring measures, should be considered as an integral part of rural water supply infrastructure and access to surface and groundwater resources.

### *Social and Behavior Change*

At the national level, there is generally very little focus and funding going to social mobilization within water projects; this is of concern to DINEPA officials. "If the water committee is weak, then the system is weak." DINEPA states that donors tend to be interested in "access" rather than thinking about a "service" oriented approach, which would lead to a more sustainable model. DINEPA suggests a package comprised of 6-12 months of support to CAEPAs once the infrastructure is built to accompany the committees, identify problems and work on solutions. DINEPA presented an example of a USD 10 million project that had only USD 500,000 earmarked for software including 100,000 USD for a service delivery campaign. Certain donors are realizing the problem; according to the IDB, many projects just focus on hardware which generally leads to short life of water systems.

TEPACs are generally responsible for the promotion of social and behavior change at the sub-national level. NGOs provide project-specific behavior change messaging when they are building infrastructure and forming CAEPAs / CPEs. Information provided by all parties should be streamlined to ensure consistency of messaging to the population; this would promote sustained behavior change. This was witnessed during peaks of the cholera epidemic as NGOs needed to get approval from GoH for key health and hygiene messages.

Free water services for internally displaced persons (IDP) camps are being transitioned to cost-recovery systems. IDPs may revert to other water sources that could be contaminated but are free.<sup>40</sup> As mentioned

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<sup>40</sup> Farmer et al. (2011). "Meeting Cholera's Challenge to Haiti and the World: A Joint Statement on Cholera Prevention and Care."

above, 68% of the population uses acceptable treatment methods to treat their water, while 32% does not treat their water at all.<sup>41</sup> Only 35% of the population (44% in urban areas and 28% in rural areas) washes their hands with water and soap. Based on conversation with actors in Boucan Carré, people are generally unwilling to pay for water treatment products and are waiting for hand-outs from NGOs. An improvement of the current situation requires a long-term sensitization campaign and a fundamental shift in mentality of the Haitian population.

### *Integration*

DINEPA was established with a vision of integration, as its board of directors is designed to be composed of representatives from different ministries (including environment, commerce, health, etc.). This is especially important given that the WASH sector is highly connected to other sectors such as health, environment, etc. The USAID/Haiti WASH strategy proposes, to the extent possible, that any investments in water resources development in rural areas should be designed as “multiple use systems” in which potable water supply is coupled with facilities for productive water use, including small-scale gardening or irrigation, small livestock watering, etc. Increasing household income as well as food production can help households pay water service fees as well as build assets necessary to weather one or more cycles of extreme drought or crop failure.

The cholera outbreak in Haiti increased the integration of water efforts with health activities. MSPP and DINEPA developed a joint plan to eliminate cholera. According to the CDC, the plan is being coordinated by the Prime Minister’s office, and is supporting increased inter-ministerial coordination. Several USAID-funded health projects have worked on water access. As a part of USAID’s new flagship health project (Services de Santé de Qualité pour Haiti, SSQH), Zanmi Lasanté (the local NGO branch of Partners in Health), under Pathfinder, is focusing on WASH services in health facilities in the Central Plateau. Zanmi Lasanté is currently conducting an in-depth assessment of WASH services in 23 health facilities; next year, they will add another 40 facilities. The SSQH project is training health providers and advisors on a series of topics, including WASH and cholera prevention.

Other actors are linking water to livelihoods. ACF is linking WASH and nutrition in schools. They are also working on livelihoods approaches that incorporate WASH activities, such as kitchen gardens.

As mentioned above, at the sub-national level, UNICEF’s WASH partners for the cholera campaign have been paired with health NGOs to support the integration of health and water activities. When a cholera outbreak is declared, the NGO partners, along with the TEPACs and the EMIRA, go together to the declared area to provide support to the population.

### **Sanitation and Hygiene**

#### *Institutional*

A National Sanitation Strategy for Haiti was published in 2012.<sup>42</sup> It stresses the need for flexible and sustainable technology. Along with the strategy, the government has established a campaign that focuses on: 1) the linkage between health, water and sanitation; 2) the strengthening of municipalities; 3) population sensitization to change behaviors; 4) public infrastructure in public markets, schools and workplaces; 5) value chain of excreta management; and 6) treatment of excreta. The slogan of the sanitation department is “1 house, 1 toilet.”

The goal of the national sanitation strategy, according to the central DINEPA sanitation office, is to have one person responsible for sanitation per OREPA. However, the government currently does not have the

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<sup>41</sup> EMMUS-V. (2012). “Enquête Mortalité, Morbidité et Utilisation des Services. ”

<sup>42</sup> DINEPA (2012). “Document d’Orientation Stratégique pour l’Assainissement en Haïti. ”

funding for this structure. As will be explained below, TEPACs and Community Health Workers (CHWs, supervised by MSPP) are in charge of hygiene promotion and the promotion of sanitation.

As sanitation facilities must be constructed at the household level, each household will be in charge of its own facility. A challenge cited by many stakeholders to the compliance to the national policy is the low level of land ownership. Many families either rent rooms or entire apartments; renters are very unlikely to build their own latrine and owners of the building may not have enough funds to build them either.

The institutionalization of the sanitation and hygiene in rural areas will be developed in the same way as described in the institutional section of the water sector.

### *Management*

DINEPA currently has only two employees in the sanitation department in charge of the supervision and implementation of the sanitation strategy at the national level. Along with their responsibilities for water supply, TEPACs are responsible for facilitating information and of providing support to certain sanitation interventions. They will work with CHWs to coordinate messages. TEPACs, where possible, are housed in the municipalities to support integration and increased interest at the municipal level in WASH. Reports that are submitted monthly to DINEPA are also archived at the municipality.

CHWs, trained by the MSPP and funded by different NGOs, are agents that spread hygiene messages. MSPP aims to have a total of 10,000 CHWs dispatched throughout the country. In 2012, in partnership with the governments of Cuba and Brazil, the MSPP finalized a set of CHW standard training modules. These modules are supposedly being used, yet no NGO with whom the assessment team spoke to had seen them.

The USAID/Haiti's proposed WASH strategy (2010) also calls for increasing the capacity of private enterprises in the WASH sector. As demand for WASH services increases, producers of latrine components and other WASH related business will require enhanced capacity.

### *Financial*

Through the National Sanitation Strategy, the Haitian government is mandating a no-subsidy approach for household sanitation facilities; it will, however, subsidize or partially subsidize public sanitation facilities and will contribute funds for the operation of these facilities for between six months and one year. As mentioned above, there is no funding currently for sanitation agents at the sub-national level.

### *Technical*

The WASH technical manual (Référentiel Technique) includes modules on the design and construction of household sanitation facilities. Training on these modules should be provided to OREPAs, URDs, CAEPAs, CPEs, TEPACs and private contractors for construction of toilets and latrines in rural areas. Modules for the desludging of household latrines and management of human excreta in rural areas need to be developed and disseminated.

### *Environmental*

If household latrines are not properly lined and if there is inadequate disposal of human excreta, there can be high levels of the pollution of water resources, especially groundwater pollution in areas where the water table is shallow. Standards for construction of latrines and safe disposal of human excreta need to be enforced. Water quality safety plans needs to be developed and enforced in rural communities to ensure access to safe water.

Compliance with USAID Environmental Procedures (Reg. 22 CFR), including appropriate assessment, mitigation, and monitoring measures, should be considered as an integral part of rural sanitation infrastructure.

### *Social and Behavior Change*

Several actors are supporting the sanitation platform. AECID hosted a sanitation marketing workshop in March 2014 to which around 15 NGOs participated. Problems identified include traditional and social norms, poverty, a negative perception of pit latrines and the absence of communal latrines. AECID is working with DINEPA and the University of California Berkley to design a randomized control study to understand which techniques work and which do not in the Haitian context. Communities will either be controls, be targeted with modified CLTS, or receive WASH services as an incentive once the households have latrines. The pilot will start in 2015 and a revised / improved sanitation strategy is the expected outcome by 2016.

In parallel, UNICEF is conducting a sanitation marketing assessment focused both on the supply and demand of sanitation. According to the Terms of Reference,<sup>43</sup> the study is being conducted as a partnership between UNICEF, DINEPA and the Water and Sanitation Program (WSP) of the World Bank and will 1) investigate perceptions, knowledge, attitudes and practices of the Haitian population around sanitation and 2) propose sanitation designs. TEPACs are responsible for the promotion of household sanitation and must work with CHWs to address hygiene behavior change, however, given the behavior change has a vital role in advancing household sanitation and hygiene, it is recommended to assign this responsibility to people who have social marketing background. This will ease the pressure on TEPACs and allow them to concentrate on the technical and management aspects related to the water and sanitation systems.

There is a general fatigue of the population with the behavior change and hygiene messages being broadcasted. Many messages have been broadcasted for several years and the population no longer pays attention. Based on conversations with CHWs in Boucan Carré, messages should be targeted to the local context and delivered at the household level. Pathfinder, at the global level, has developed an innovative, bottom-up way of developing BCC and information and communication (IEC) materials. They conduct focus groups and use board games with fictional characters to identify social, personal and environmental facilitators and barriers to behavior change. The tool was recently presented to the Haiti SSQH team and will be piloted in intervention communities.

Certain groups interviewed mentioned that communities want more than just sensitization, they are requesting hardware. An interesting initiative from DINEPA is to prioritize communities already with sanitation facilities for the installation of water systems;<sup>44</sup> time will tell if this approach assists in the establishment of household sanitation facilities.

There is a high level of dependency in the country (a “give me” attitude). A change in mentality of the population is needed. This will require a long-term concerted and coordinated commitment between executing agencies. There is generally a lack of trust and no sense of community. The CHW model tries to resolve this issue as the workers are hired from the community and know the dynamics of the population with whom they work. These agents are the entry point into the community.

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<sup>43</sup> UNICEF. “Projet de Recherche Formative en Assainissement, Design Technique de Systèmes d’Assainissement et Plan de Communication pour la Promotion de l’Assainissement en Haïti.”

<sup>44</sup> DINEPA (2014). “ Stratégie d’Intervention en Assainissement en Milieu Rural. ”

## **Integration**

Hygiene promotion intrinsically involves several ministries. At the national level, institutions are currently collaborating in the Inter-sectoral Strategic Plan on Hygiene Promotion.<sup>45</sup> These ministries include DINEPA, the Ministry of Education (MENFP), MSPP, Ministry of Agriculture and Natural Resources (MARNDR), Ministry of Environment, Ministry of Commerce and the Metropolitan Waste Collection Service (SMCRS). The strategy aligns the work of the different ministries under four large axes:

- Strengthening of institutional and regulatory frameworks;
- Community mobilization for social change;
- Communication for behavior change;
- Advocacy.

Additionally, MENFP, with financial support from UNICEF, is coordinating the Healthy Schools Campaign. The campaign aims to certify 100 schools as “schools friends of hygiene.” State partners include DINEPA, Ministry of Finance, MSPP and Ministry of Youth, Sports and Civic Action.<sup>46</sup>

Several USAID-funded health projects have focused on hygiene. The ProMark project, for example,<sup>47</sup> focused on child survival, HIV/AIDS and family planning; activities including the social marketing of water purification products and of oral rehydration solutions (to combat cholera). USAID’s Office of Infrastructure, Energy and Engineering (OIEE) supports WASH related work through its housing, hospitals and food security programs.<sup>48</sup> According to the USAID Latin America team, OIEE has supported the construction of sanitation facilities, which contribute to cholera prevention.

In urban slum areas, many NGOs are linking WASH (particularly sanitation) with infrastructure activities / projects (roads, electricity, security of ravines, etc.) and livelihood opportunities. For sanitation, as stated by law, each household must build their own toilet. Certain NGOs support households to connect to a septic tank. Solidarités, for example, is piloting a septic tank approach in which they are linking 10-20 households and establishing an operation committee and a tariff system for the maintenance of the infrastructure.

DINEPA proposes to prioritize water infrastructure to communities that have household facilities already built<sup>49</sup> to incentivize behavior change related to sanitation facilities. Additionally, at the community level, CHWs provide messaging not just of health but also of hygiene promotion.

## **Rural WASH and Cholera Analysis**

### **Rural WASH - Challenges/Bottlenecks, Opportunities**

Several key challenges and bottlenecks were identified during the desk review and field key stakeholders ‘consultation.

#### **Donor-Driven Sector**

As presented in the previous sections, the WASH sector is predominantly donor-driven. Of total funding for the sector between 2006 and 2015, DINEPA reports that only 1% is from the Haitian government.<sup>50</sup> This has serious sustainability implications, particularly given the expected decrease in funding levels as the emergency phase winds down and cholera peaks and outbreaks becomes less of an issue. Certain

<sup>45</sup> Government of Haiti. “Plan Stratégique Intersectorielle de Promotion de l’Hygiene, 2013-2018.”

<sup>46</sup> Ministère de l’Education Nationale et de la Formation Professionnelle (MENFP): Direction de Santé, Nutrition et Education (2013). “Programme Certification Ecole Amie de l’Hygiène.”

<sup>47</sup> USAID/Haiti. (2011). “ProMark Project, Midterm Evaluation.”

<sup>48</sup> USG. (2011). “Post Earthquake USG Haiti Strategy: Toward Renewal and Economic Opportunity.”

<sup>49</sup> DINEPA. (2014). “Stratégie d’Intervention en Assainissement en Milieu Rural.”

<sup>50</sup> DINEPA. “Présentation et Bilan 2012-2014.”

entities of DINEPA's decentralized structure are currently fully funded by donor funds; an example of this is the TEPAC structure. As CDC's emergency funding decreases and other donors shift funding, the 1.6 million USD<sup>51</sup> per year needed to maintain this initiative may disappear, leading to a severe gap in follow-up on water quality and on management of water systems.

Stakeholders must address the lack of willingness to pay of the population for WASH services. DINEPA will have a hard time funding its structure if tariffs are not collected and if accountability mechanisms for the funds received are not installed. This relates not just to water but also to water treatment and sanitation. A study conducted by Population Services International (PSI) estimated that over 57% of aquatabas that were being used in households were distributed for free by NGOs.<sup>52</sup> With NGOs operating with more limited funding, a change of mentality is needed so that the population starts to pay for services that before were provided for free.

### *Management*

In conversations with representatives of the IDB, management challenges were stressed as being key to the sustainability of WASH infrastructure. A fundamental challenge is that DINEPA is currently both the executor and the regulator. A competent and funded decentralized structure is needed to ensure sufficient monitoring and control of water systems. Currently, the decentralized structure is very weak. TEPACs, on whose shoulders the bulk of the sustainability of rural WASH systems falls (from water quality to strengthening of CAEPAs to sensitization), have very low levels of education (generally not higher than a secondary degree). There are only two TEPAC per commune; in communes with remote areas this may not be sufficient.

DINEPA is proposing to move these officials to the municipalities, yet it is not clear whether there will be funding for them. Municipalities thus far are not very implicated in the WASH sector, therefore it is not clear how this idea will be received, particularly in small municipalities with very little funding and high turn-over. In addition, there is a risk of politicizing the sector if services are moved to municipalities.

As presented in the previous sections, the funding available for software is quite limited for WASH programs. Focus on long-term software is the only way for WASH infrastructure to be sustainable. DINEPA is proposing a 12 month follow-up period once CAEPAs are formed to ensure that possible bottlenecks are addressed and community and committee members are trained / sensitized. Above and beyond this period (now guaranteed by very few donors), there must be capacity at the local governmental level to provide assistance to these committees.

### *Sanitation*

As presented above, the statistics for sanitation are very low. As the representative of UNICEF stated "there is much catch-up to be done in sanitation." There are several key challenges that the WASH community must address in regards to sanitation. First, as mentioned above, there are very low levels of land ownership in the country. Many settlements are located on loaned or rented land. Thus the owners of the homes are unlikely to construct latrines / sanitation facilities as they may be evicted at any point. Second, there is very little demand for excreta management. According to representatives of AECID, in Africa, demand is between 30% and 40%; in Haiti it is only 3%. Tied to this concern is the fact that bayakou (the informal latrine cleaners) are outcasts in society. Efforts should be made to formalize this activity and provide the bayakou with basic training and protection equipment. Third, as the government is promoting a zero subsidy approach for household sanitation facilities, the overall challenge of willingness to pay puts a certain amount of doubt as to how successful the uptake of sanitation will be. The different studies carried out by AECID and by UNICEF will be vital to determine the key behavior and perception factors that will promote this uptake. Coordination is also essential, if one group provides

<sup>51</sup> Part of this USD 1.6 million comes from the USD 50 million that has been provided by CDC to the Haitian government for cholera response.

<sup>52</sup> Population Services International (2012). "Traitement d'Eau à Domicile : Enquête de Suivi sur les Déterminants de l'Utilisation des Produits de Traitement de l'Eau au Niveau des Ménages Ayant des Enfants de Moins 5 Ans en Haiti."

subsidized sanitation facilities, other actors will have a very hard time implementing the government-imposed approach. A unified approach by all executing agencies and regulation by DINEPA are vital to streamline NGO interventions with the sanitation strategic and action plans.

There are several innovative programs being led by different NGOs. These programs should be evaluated to identify the methods that can be taken to scale. For example, Solidarités is promoting community septic tanks with a minimal payment to a committee for their management and operation. The NGO Sustainable Organic Integrated Livelihoods (SOIL) is renting out toilets for 100 gourdes (2.2 USD) per month. There is also donor traction in promotion of sanitation. As mentioned, AECID has committed to a three-year study on factors of uptake of sanitation. UNICEF has launched its large Total Sanitation Campaign and expects to scale up interventions from 20 communes in phase 1 to 35 communes in phase 2; communes were selected based on cholera incidence, with at least one commune per department.

### *Integration*

Integration of WASH in education, health and infrastructure programs occurs often in many countries; however in Haiti this has not been done yet. According to MENFP, only 26% of schools have access to water.<sup>53</sup> MSPP reports that only 79% of health facilities have access to an improved water source; only 46% of clinics have sanitation facilities.<sup>54</sup> These statistics show the fragmentation of interventions that affect the entire Haitian population: with no sanitation facilities, girls drop out of school and healthy people going to clinics have the potential to be sick due to lack of WASH structures.

This trend has gradually been changing. SSQH, a large USAID-funded health program, is including a WASH component; USAID/Haiti's OIEE is incorporating WASH activities in infrastructure programs, etc. Many NGOs are now promoting a neighborhood approach to rebuilding efforts to make up for many transitional houses being built without sanitation. However, certain donors are still segregating activities; JICA representatives stated that they would build sanitation facilities in the schools they are constructing if there is funding left over after the construction of the actual structure. Advocacy efforts must be promoted so that there is a concerted effort by all actors to integrate WASH activities into other programming.

## **Cholera Hotspots - Challenges/Bottlenecks, Opportunities**

### *Funding and Sustainable Infrastructure*

Although the number of cases of cholera has significantly decreased, there is still a widely-shared concern that cholera may reappear during the rainy season. As cholera has decreased, the amount of donor funding has followed suit. There may be a gap in funding if there is a large outbreak. UNICEF, the coordinator of cholera eradication activities, has limited funding from CIDA and JICA and is relying on others to fund its activities.

### *Social Mobilization*

As explained in the above sections, there is a general lack of willingness to pay for water treatment products that could reduce the incidence of cholera. A study completed by PSI indicated that over half of the population used aquatabs handed out for free by NGOs. CHWs may be able to support the effort for payment for water treatment products by adapting messages to the context of each community and family.

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<sup>53</sup> Ministère de l'Éducation Nationale et de la Formation Professionnelle (MENFP) : Direction de Santé, Nutrition et Éducation (2013). "Programme Certification École Amie de l'Hygiène."

<sup>54</sup> MSPP, Institut Haïtien de l'Enfance and MEASURE DHS ICF. "Évaluation de Prestation de Services de Soins de Santé : EMMUS Haïti 2013 : Rapport Préliminaire."



A Boston University study suggested that social norms hinder behavior change in Haiti.<sup>55</sup> Drinking water from rivers and engaging in open defecation are social norms in certain parts of the country. The study suggests that, for example, “boiling water may show superiority over neighbors.” As was reported by several stakeholders, there is still a social taboo around cholera; many people still hide the cause of a cholera death and wash clothes of the infected person in river, which contaminates the water for downstream communities. Several outbreaks of cholera were reported downstream from a suspected initial cholera case.

At the same time, the population is becoming immune to hygiene and cholera-prevention messages. Messages must be tailored to the local context.

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<sup>55</sup> Boston University School of Public Health. (2012.) “Cholera in Rural Haiti: Recommendations for Point of Use Water Treatment.”

## KEY RECOMMENDATIONS

The following are key recommendations for USAID/Haiti.

### **1. Build local government capacity to promote low-cost WASH technologies and support decentralization of WASH services**

Responsibility for water and sanitation in Haiti is in the process of shifting to regional and local entities, which lack the capacity to engage communities and develop sustainable WASH improvements. It is recommended that USAID/Haiti work with DINEPA to support decentralization of WASH services by building the capacity of regional and local entities to promote low-cost WASH technologies and engage communities in improving WASH services. Improving the competence of local entities in rural areas has the potential to empower both communities and local and municipal governments to more fully engage and expand coverage, as well as increase social and political stability.

### **2. Develop a strong focus on sanitation (i.e. safe disposal of human excreta) and hygiene behavior change**

Access to water and sanitation in Haiti is still the lowest in the Western Hemisphere. A strong behavioral change and communications program together with support for local supply of material for construction of latrines, and sanitation products can motivate communities to mobilize the resources needed for lasting sanitation improvements. It is proposed that USAID/Haiti activities build on lessons learned from the upcoming UNICEF and the AECID led sanitation studies. Target areas would be coordinated with the UNICEF's National Sanitation Campaign.

Behavior change is vital for all WASH programs. Emphasis on the importance of the “soft” social interventions such as behavior change and social mobilization will increase the sustainability of WASH infrastructure. Components of a social program could include strengthening of TEPACs, development of information education communications (IEC) and behavior change communication (BCC) materials, community mobilization structures, etc. Integration of WASH activities with health programs focused on cholera and healthy behavior, through community health workers (CHWs) for example, could also be considered.

### **3. Apply proven, low-cost WASH technologies/services in tandem with sustainable financing strategies**

Households and communities can rarely afford the initial capital costs associated with WASH-related infrastructure. This is especially true in the Haitian context given the low willingness to pay of the population. Applying low-cost technologies – for example, ventilated improved pit latrines in rural areas – in combination with sustainable financing strategies and private sector participation could greatly increase coverage and enhance equity in Haiti's WASH sector. Lessons learned from the NGOs Sustainable Organic Integrated Livelihoods (SOIL) and Solidarité in low-cost sanitation technologies are recommended. In some regions of the country, rainwater harvesting could also be an interesting technology to pilot.

#### **4. Coordinate with CDC on the nature of continued USG support to the TEPAC structure**

Since the emergence of cholera in October 2010, CDC has contributed to the development of the TEPAC structure throughout Haiti by providing training materials and funding. Based on conversations with CDC officials, funding for CDC's involvement is currently evaluated on an annual basis and is expected to decrease as cholera cases decrease.

TEPACs in general have a substantial amount of responsibilities that include follow-up of CAEPAs and CPEs' activities, inventory and evaluation of rural water infrastructure, technical support for operation and maintenance of water systems, control of water chlorination and water quality monitoring, and promotion of sanitation and hygiene behavioral change. This is beyond their background (typically secondary degree) and capacity. Their responsibilities need to be reviewed and streamlined based on their potential and capabilities to effectively accomplish their tasks.

As CDC is decreasing its funding for the TEPAC structure, it is recommended that USAID/Haiti support the review of the TEPAC mechanism based on the lessons learned from the past two years. Transition of certain responsibilities from CDC to USAID will ensure continuity of the support of the USG to the Haitian rural WASH sector.

#### **5. Support increasing willingness to pay for access to safe water**

The lack of willingness to pay for water services presents a major challenge for the sustainability of water infrastructure and for the successful treatment of water. It is recommended that USAID/Haiti build on lessons learned from the cholera outbreak control programs and from rural water supply systems that are operational to identify barriers and opportunities for willingness to pay. USAID/Haiti could develop communication and outreach tools, and support legal instruments to enforce willingness to pay for access to safe water. Social marketing and BCC / IEC materials need to be specifically designed for each project as the populations' practices and attitudes vary based on the region of the country. In parallel to increasing the willingness to pay of the population, it is recommended that USAID/Haiti work with DINEPA and OREPAs to set appropriate tariff schemes for water services. This topic is of key interest to other donor agencies as well and could provide a key collaboration opportunity since all donors are facing the transition from free services to payment schemes.

#### **6. Build on lessons learned from earthquake and cholera eradication emergency to improve WASH services**

Gather data and information about lessons learned and success stories from the earthquake and cholera emergency programs on coordination between government institutions, behavior change and social mobilization, water supply, sanitation and hygiene, etc. Build on this data and information for programming of future emergency interventions and for transitioning from WASH emergency to WASH development activities.

## ANNEX A: UPDATED/FINAL HAITI DESK REVIEW WITH INFORMATION GATHERED DURING KEY STAKEHOLDER INTERVIEWS

A desk review was initiated in March 2014. The Assessment Team reviewed more than 40 documents that cover WASH activities and situation in Haiti over the past 15 years, with emphasis on rural communities and cholera hotspots. Some of the documents were provided by the USAID/Haiti Mission, Government of Haiti (GoH) Ministry officials (MENFP and DINEPA) and executing agencies. Other documents were found in USAID's Development Experience Clearinghouse. The remaining references were obtained from online sources.

The framework for the WASH assessment in Haiti follows the key factors of the WASH Sustainability Index Tool, developed by Aquaconsult for USAID. Based on this tool, Chemonics worked with Development Alternatives Incorporated (DAI) and TetraTech to develop a "WASH Sector Status and Trends Framework Assessment Document". The document specifies the following seven key factors that influence the sustainability of WASH interventions: 1) institutional; 2) management; 3) financial; 4) technical; 5) environmental; 6) social; and 7) behavior change.

For the Haiti assessment, one additional factor of analysis is proposed to evaluate integration of WASH in other programs. The "social" and "behavior change" factors were combined into a single factor. Therefore, the factors analyzed in this assessment are the following: 1) institutional, 2) management, 3) financial, 4) technical, 5) environmental, 6) social and behavior change and 7) integration.

Each document was reviewed against the relevant key sustainability factors in the two key areas of interest, rural WASH and cholera. The desk review was updated after the field visit to incorporate stakeholder perspectives and additional documentation obtained.

### **Sustainability Factor #1: Institutional**

*Key concepts:* Institutional sustainability in the WASH sector means that WASH systems, institutions, policies and procedures at the national and local level are functional and meet the demand of users of WASH services. If institutional structures are strong, households and other WASH service users, authorities and service providers at the local and national level will be clear on their roles, tasks and responsibilities, and will be capable of fulfilling these roles effectively and transparently. Under this scenario, WASH stakeholders work together in the WASH chain through a multi-stakeholder approach.

*Rural WASH:* To face the challenge of the low quality of public services in the water and sanitation sector, the GoH enacted a new sectoral law in 2009.<sup>56</sup> The new legal framework is based on the 1) separation between the planning and regulatory functions, ownership of the water and sanitation systems, and operation, and 2) decentralization and diversification of service providers. The new law created the following national and regional entities to strengthen water and sanitation services in rural areas:<sup>57</sup>

- *The National Water and Sanitation Directorate (DINEPA)* under the Ministry of Public Works, Transport and Communication (MTPTC) to be in charge of the water and sanitation sector planning,

<sup>56</sup> Le Moniteur (2009). "Loi Cadre Portant Organisation du Secteur de l'Eau Potable et de l'Assainissement. "

<sup>57</sup> DINEPA. (2013). Secteur Eau Potable et Assainissement."

"Stratégie Sectorielle: Secteur de l'Eau Potable et de l'Assainissement, République d'Haïti." USAID/Haiti (2010). "Proposed Water, Sanitation and Hygiene Strategy."

policy, and regulation at the national level. According to the 2009 Law, DINEPA is responsible for the development and regulation of the sector and the control of its actors. DINEPA is also in charge of managing the transformation of the sector. DINEPA's Board of Directors is composed of the following members: 1) Minister of MTPTC as president, 2) Representative of the Ministry of Economy and Finances (MEF) as Vice-President, 3) Representative of the Ministry of Interior and Territorial Collectivities (MICT), 4) Representative of the Federations of Chambers of Commerce and Industry in Haiti, 5) Representative of the Ministry of Environment and 6) Representative of the Ministry of Public Health and Population (MSPP).

- *Regional Water and Sanitation Offices (OREPAs)*. The two former public utilities, the National Public Water and Sanitation (SNEP)<sup>58</sup> and the Metropolitan Public Water Utility (CAMEP)<sup>59</sup> were dissolved,<sup>60</sup> and four OREPAs (West, North, Center, and South) were established to implement the water and sanitation strategy at the regional level as decentralized entities of DINEPA. The OREPAs have ownership of the water and sanitation infrastructures and are responsible for the implementation of the sector policy, the monitoring of the resources, and the supervision of the water and sanitation operators in their territorial divisions.
- *Rural Departmental Units (URDs)* are the decentralized structures of OREPAs in the rural areas. The role of the URDs is to ensure compliance with the quality of water and sanitation services in rural areas at the departmental level on behalf of the OREPAs. Water Supply and Sanitation Committees (CAEPAs) and Water Point Committees (CPEs) are in charge of providing water and sanitation in rural areas under the monitoring and supervision of the URDs. There are around 650 CAEPAs in rural areas.<sup>61</sup> The CAEPAs are in charge of the management and the functioning of water systems for a population of less than 10,000 people. The infrastructure can have one or more water sources and must have at least two distribution points. CPEs are responsible for water supply for a population living in a radius of 500 meters around a single water distribution point.<sup>62</sup>

DINEPA hired, trained and deployed 266 Communal Water and Sanitation Technicians (TEPACs) in 2012 to the 133 communes in the country, with 2 TEPAC members assigned to each commune. TEPACs are responsible for a large number of tasks including follow-up of CAEPAs' and CPEs' activities, inventory and evaluation of rural water infrastructure, technical support for operation and maintenance of water systems, control of water chlorination and water quality monitoring and promotion of sanitation and hygiene behavioral change.

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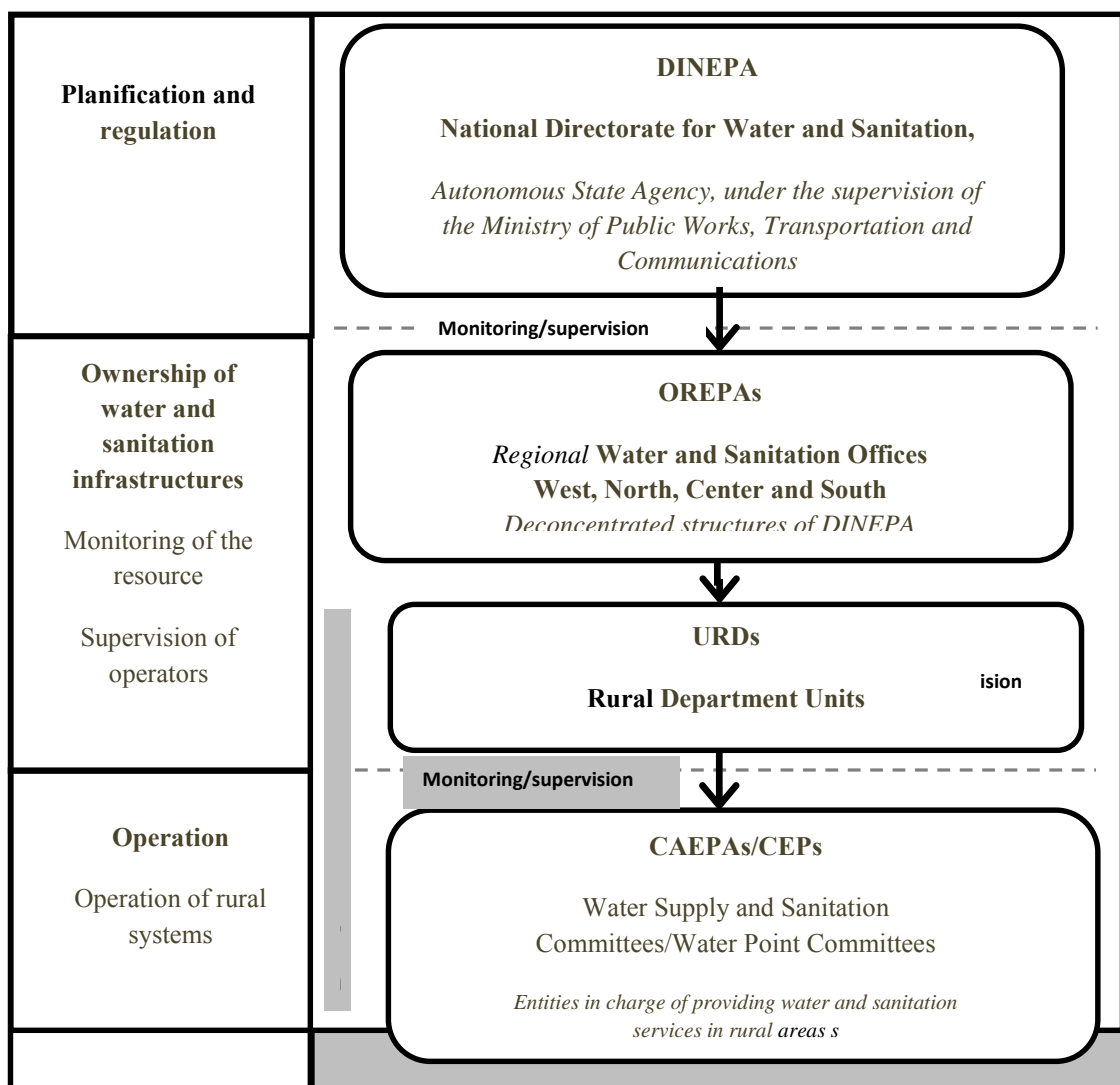
<sup>58</sup> SNEP was in charge of water supply and sanitation all over the country, except Port-au-Prince.

<sup>59</sup> CAMEP was in charge of water supply and sanitation in Port-au-Prince metropolitan area.

<sup>60</sup> Following the ratification of the 2009 water law, DINEPA changed the names of the former SNEP and CAMEP offices to Technical Operation Centers (CTEs).

<sup>61</sup> DINEPA. (2013). *Secteur Eau Potable et Assainissement*.

<sup>62</sup> La DINEPA. (2010). "Status du CAEPA Version 1.0." and La DINEPA. (2011). "Status du Comite de Point d'Eau, Version 1.0."



**Figure 1: Haitian WASH Institutional Structure for rural areas<sup>63</sup>**

The implementation of the institutional reform has been very slow, mainly due to a lack of capacity from the GoH to advance the reform process. Institutional support from donor investments has not been sufficient to move the reform process forward. In addition to being the main institution responsible for the reform of the water sector, DINEPA has assumed execution responsibilities in the implementation of large water and sanitation portfolio given that the OREPAs have not been strengthened to operate adequately.<sup>64</sup> This resulted in a lack of updating of the sector planning strategies and the absence of policies and legal tools to regulate the sector adequately. To date, OREPAs, URDs, CAEPAs, and CPEs have not been legally instituted. They are mainly supported by donors and financial institutions. Without any legal existence, the sustainability of WASH in rural areas and cholera hotspots cannot be guaranteed. The sector lacks effective institutional structures to ensure efficient use of public resources, delivery of quality and sustainable services, and solid oversight.<sup>65</sup>

<sup>63</sup> IDB (2014). "Institutional Strengthening and Reform of the Water and Sanitation Sector I, Grant Proposal"

<sup>64</sup> IDB (2014). "Institutional Strengthening and Reform of the Water and Sanitation Sector I, Grant Proposal"

The situation was exacerbated by the fact that DINEPA had to respond to the humanitarian emergency created by the earthquake of January 2010 and to the cholera outbreak in October of that same year.

*Cholera:* In regards to the response to the cholera epidemic, DINEPA partners coordinate with Ministry of Health and Population (MSPP), the World Health Organization (WHO/PAHO) and UNICEF.

Controlling cholera in Hispaniola over the long-term will be only possible through investments in WASH infrastructure and through the development of institutional capacity to operate and maintain that infrastructure<sup>65</sup>. The National Plan for the Elimination of Cholera in Haiti, created by the MSPP and DINEPA, calls for DINEPA to create an Emergency Response Department to ensure the emergency response to cholera outbreaks in coordination with MSPP and with the WASH Cluster, which brings together all organizations working in emergencies dealing with WASH, particularly in cholera hotspots.

## **Sustainability Factor #2: Management**

*Key Concepts:* Management sustainability of WASH services is reached when communities or water service providers are able to operate, maintain, repair and replace the infrastructure and technology or hardware needed for delivering water and sanitation services over time. Sustainable management ensures that services and infrastructure are aligned with local human and capital resources without exhausting the natural or financial resources necessary for their functioning.

*Rural WASH:* Between 1990 and 2010, rural access to sanitation decreased by 27%.<sup>66</sup> As mentioned in the institutional section, the OREPAs and their rural entities (URDs, CAEPAs and CPEs) have no formal policies or operating procedures.<sup>67</sup> These constraints translate to an inability of the country to fully benefit from these technicians for the effective operation and maintenance of rural water and sanitation systems.

As mentioned earlier, CAEPAs are community water and sanitation committees that manage and ensure the sustainability of access to water in rural areas. According to DINEPA,<sup>68</sup> CAEPAs must call at least one annual assembly of users and must promote good WASH practices. CAEPAs management consists of a president, a treasurer, a secretary and an advisor who is a member of the local government. At least two of the positions must be filled by women. According to DINEPA, in 2008, only 26 CAEPAs and 40 CPEs existed. The 2015 targets are to have 300 CAEPAs and 850 CPEs.<sup>69</sup> Current statistics show that the number of CAEPAs with legal framework registered with DINEPA has increased from 26% in November 2013 to 39.4% in April 2014.<sup>70</sup>

The TEPAC structure has been funded by the World Bank, UNICEF, the Inter American Development Bank (IDB) and the United States Centers for Disease Control (CDC).<sup>71</sup> TEPACs typically have a secondary level of education. In conjunction with DINEPA, the United States Centers for Disease Control and Prevention (CDC) and UNICEF developed a set of training modules for the TEPACs.<sup>72</sup> DINEPA plans to hold yearly refresher courses for these TEPACs.

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<sup>65</sup> PAHO, WHO, CDC. "Call to Action: A Cholera Free Hispaniola." Farmer et al. (2011). "Meeting Cholera's Challenge to Haiti and the World: A Joint Statement on Cholera Prevention and Care.", and MSPP and DINEPA. (2013). "National Plan for the Elimination of Cholera in Haiti 2013-2022."

<sup>66</sup> Boston University School of Public Health (2012.) "Cholera in Rural Haiti: Recommendations for Point of Use Water Treatment."

<sup>67</sup> IDB (2014). "Institutional Strengthening and Reform of the Water and Sanitation Sector I, Grant Proposal"

<sup>68</sup> La DINEPA. (2010). "Status du CAEPA Version 1.0. "

<sup>69</sup> DINEPA. (2014). " Approche Eau Potable en Milieu Rural: Vers la Durabilité des Services. "

<sup>70</sup> DINEPA. (2014). "Suivi des Indicateurs de Performance des Systèmes d'Approvisionnement en Eau Potable en Milieu Rural."

<sup>71</sup> DINEPA (2014). "Rapport Capitalisation Programme TEPAC- 2012-2013."

<sup>72</sup> Hubbard et al (2014). "Development of Haiti's Rural Water, Sanitation and Hygiene Workforce."

As preliminary activities, the TEPACs were responsible for conducting an inventory of water and sanitation infrastructure and of related management structures (including CAEPAs, CPEs and private operators). They also had to conduct a census of the bayakou (agents who empty latrine), establish a list of hygiene promotion agents and conduct an inventory of public establishments.<sup>73</sup>

DINEPA is currently conducting an inventory of the WASH systems in the country (total number and number which are functioning) including number of water networks, number of kiosks and number of fountains. A total of 438 systems were mapped out, including 1096 kiosks (55% of which were functional) and 2266 fountains (59% of which were functional).<sup>74</sup> In order to track sustainability of systems, DINEPA created an Performance Monitoring System (Système Informatique de Performance, SIP) which follows 21 factors including payment, beneficiary numbers, water quality analyses, logistics and finances of water points. Water quality testing is the responsibility of TEPACs. The TEPACs, along with the CAEPAS, use SIS-KLOR to measure the quality. The data is sent via SMS to DINEPA who then analyzes the data and produces reports that are then distributed to the URDs, OREPAs, users, TEPACs and the general public.<sup>75</sup>

<b>TEPAC Training Modules</b>
- DINEPA’s institutional framework;
- Principles of water quality;
- Water associated diseases;
- Groundwater flow;
- Environmental sampling methods;
- Principles of water supply infrastructure;
- Sanitary inspection;
- Household water treatment and safe storage;
- Water quality testing: measuring free chlorine residual;
- Water quality testing lab and practice;
- Disinfection of small distribution systems;
- Chlorine demand and jar test;
- Formation of local water committees;
- Sanitation;
- Hygiene;
- Emergency response;
- Cholera.

There are several key concerns for the management of rural WASH infrastructure. According to the IDB, “management is the main issue.” There must be a change in mentality to deal with current inefficiencies. Certain of the challenges raised by key stakeholders include:

- **Capacity and manpower:** Basic capacity is available at the national and regional levels (engineering, etc.) as many officials received degrees from universities abroad. However officials lack critical skills, such as project management and environmental protection. There are very few TEPACs (only two per commune), given their responsibilities in water quality and accompaniment of CAEPAs. This will be further evident once TEPACs will need to provide follow up to the governmental sanitation plan. At the community level, there is also concern of lack of capacity in CAEPAs as the members of the CAEPAs are community leaders and typically only have a primary education.
- **Funding:** Of total funding for the sector between 2006 and 2015, DINEPA reports that only 1% is from the Haitian government.<sup>76</sup> TEPACs are also heavily reliant on donor funding. They, along with the URD, are currently funded through the end of September, 2014. After that, there is risk that these groups will no longer exist.<sup>77</sup>
- **Regulation of guidelines:** DINEPA and MSPP have produced technical guidelines and standard training materials. There are, however, organizations that do not follow these guidelines. Regulatory mechanisms must be put in place to ensure compliance. With the initiation of the sanitation marketing campaign, there is also concern as to how to regulate the sanitation market and ensure that there are good designs for sanitation solutions.

<sup>73</sup> DINEPA. (2014). "Rapport de Capitalisation du Programme TEPAC pour l'Année 2012-2013, Version 1.0."

<sup>74</sup> DINEPA. (2014). "Approche Eau Potable en Milieu Rural: Vers la Durabilité des Services."

<sup>75</sup> DINEPA. (2014). "Traitement et Contrôle de la Qualité de l'Eau : Hypochlorateurs et Sisklor."

<sup>76</sup> DINEPA. "Présentation et Bilan 2012-2014."

<sup>77</sup> DINEPA. (2014). "Finance de la Déconcentration."



- **Involvement of the private sector:** The private sector has a hard time to get involved in the WASH sector as many do not see profitability in the sector given challenges to the collection of tariffs. It is hoped that the private sector will be able to get involved in the supply side of the National Sanitation Campaign.

*Cholera:* DINEPA, along with the MSPP and other key actors, developed a plan to eradicate cholera.<sup>78</sup> DINEPA's strategy in response to cholera calls for: 1) promotion of effective participation of local authorities in the implementation of field activities; and 2) strengthening and training of human resources for the monitoring of water quality, coordination of WASH activities, and knowledge management.<sup>79</sup>

UNICEF Strategy (2013-2015) for the support of the National Plan of the Haitian Government to Eliminate Cholera focuses on assisting the MSPP and DINEPA in the response to and prevention of cholera outbreaks over the next two years and to support the ten year elimination plan by providing sustainable WASH solutions. NGO partners aim to transfer knowledge to government staff, especially to the TEPACs.<sup>80</sup> Top priorities of the NGOs are to coordinate the departmental responses, respond to a cholera outbreak within 48 hours and complete rapid rehabilitation of infrastructure. UNICEF partners are divided by departments and include Action against Hunger (ACF), Oxfam, Partners in Health/Zanmi Lasante, Solidarité and ACTED.

At the governmental level, rapid response mobile teams (EMIRA) were established within the MSPP to respond to cholera outbreaks. The teams are financed by UNICEF and the World Bank and must accompany NGOs in response to cholera outbreaks. The teams were trained by the University of Marseille (France). There is one team per department. TEPACs also respond on behalf of DINEPA to the outbreaks. TEPACs work with the network of community health workers (coordinated by the MSPP) to spread hygiene and cholera prevention messages.

Key challenges facing the management of the cholera response include:

- **Indicators:** Although there is a National Plan to Eradicate Cholera, the CDC reports that there are currently no performance indicators.
- **Funding:** UNICEF is constantly fundraising for its contribution to eliminating cholera. Currently, the Japanese Cooperation (JICA) and Canadian Cooperation (CIDA) are both contributing funds. The JICA funds, however, are only available for 18 months, so the long-term contribution of UNICEF may be weak.

### **Sustainability Factor #3: Financial**

*Key Concepts:* Financial sustainability means that continuity in the delivery of products and services related to water, sanitation and hygiene is assured, because the activities and capital investments are financed through fees, tariffs, taxes and local fees, and/or formal bank or informal capital market financing and revenues generated are sufficient to cover operating, management and capital investment costs without external (foreign) subsidies.

*Rural WASH:* The 2009 Water Law supports the establishment of a "favorable policy environment" for the sector based on "economic efficiency, financial viability and social equity."<sup>81</sup> According to the national water and sanitation strategy,<sup>82</sup> tariffs must create an equilibrium between the real cost of water systems and the low willingness to pay of the population. In rural communities, CAEPAs and CPEs are in

<sup>78</sup> MSPP and DINEPA. (2013). "National Plan for the Elimination of Cholera in Haiti 2013-2022."

<sup>79</sup> DINEPA. (2010). "Stratégie Nationale de Réponse a l'Epidémie de Cholera Version 1.0."

<sup>80</sup> UNICEF. (2013). "Strategy to Support the National Plan of the Haitian Government to Eliminate Cholera, June 2013-December 2015."

<sup>81</sup> Le Moniteur (2009). "Loi Cadre Portant Organisation du Secteur de l'Eau Potable et de l'Assainissement. »

<sup>82</sup> "Stratégie Sectorielle: Secteur de l'Eau Potable et de l'Assainissement, République d'Haïti."

charge of collection of water consumption tariffs.<sup>83</sup> The willingness to pay for water and sanitation services is low, but improvements in the services and quality of water may change this attitude.

Currently DINEPA and the OREPAs' rural WASH entities (URDs, CAEPAs, and CPEs) do not have an integrated accounting system which would ensure accuracy and reliability of accounting information.<sup>84</sup> There is no tariff policy at the national level that defines the concepts of economic efficiency, financial viability and social equity, as required by the 2009 law.

A key challenge to financial sustainability is the lack of willingness to pay of the general population for water services. According to AECID, there are only 70,000 active DINEPA clients nationwide (meaning individuals who pay for water services); 40,000 of these are in the Port-au-Prince metropolitan area. People have shown an increased willingness to pay for water with a certain quality yet the payment would have to be very small (the CDC cites 50 gourdes (a little over 1 USD) per month per family). This is a key long-term problem that will need to be solved, particularly in rural areas where the population is used to going to the river to access water.

There is no national policy on tariffs for water. Certain cities, such as St Marc, have developed plans. DINEPA has developed terms of reference to elaborate a national tariff policy. Payment will depend on the system, and on the population. A socioeconomic assessment will guide the setting of the tariff for each system. Currently, 30% of systems report no payment for services while another 20% is undeclared. DINEPA's long-term goal is to have a feedback accountability loop so that community members will know what is being reported by the CAEPA.

Regarding sanitation, the new governmental policy on sanitation requires families to pay for their own sanitation solution. Subsidization is not an option, although many stakeholders are currently advocating for indirect subsidies (lowering the cost for certain materials, etc.). The policy is not in line with what many NGOs have been doing; at the sanitation cluster, the Haitian Red Cross was called out for building latrines. This dichotomy causes questions and conflicts in communities.

DINEPA has published the budget for all its activities for the period between 2011 and 2015. The budget includes the following:<sup>85</sup>

<b>Strategic Objective</b>	<b>Budget (million USD)</b>
Strengthening Sectoral Governance	20.24
Strengthening Emergency Response	33.19
Strengthening the Port-au-Prince System	49
Sanitation (including excreta management in secondary cities and sanitation promotion)	19.65
Improving Operational Performance (including strengthening OREPAs, CAEPAs, etc.)	45.11
Increasing Access	88.27 (including 17.9 million for rural areas)
Improving Water Quality	6.6
Training and Innovation	7.31
Hygiene Communication, Sensitization and Education	5.65

<sup>83</sup> La DINEPA. (2010). "Status du CAEPA Version 1.0."

<sup>84</sup> IDB (2014). "Institutional Strengthening and Reform of the Water and Sanitation Sector I, Grant Proposal".

<sup>85</sup> DINEPA (2012). "Reforme, Modernisation et Investissements dans le Secteur de l'Eau Potable et Assainissement en Haïti : Plan Quinquennal 2011-2015). »

The WASH sector in general is very donor-dependant. DINEPA reports that, of total funding for the sector between 2006 and 2015, only 1% is from the Haitian government.<sup>86</sup> DINEPA's monthly expenditure for salary of its employees equals over 660,000 USD. Only 9% of these funds come from the public treasury and 39% is reported to come from DINEPA funds; the remaining amount is paid by AECID, the IDB and by other donors. Major donors include:

- IDB: The current portfolio of projects is valued at USD 200 million (USD 130 million of own funds). All these projects contribute to cholera reduction. Projects include rural WASH, WASH in secondary cities and institutional support to DINEPA.
- AECID: USD 100 million is disbursed bilaterally to DINEPA and an additional 70 million is disbursed through the IDB. USD 10 million is earmarked for rural WASH (water points and sanitation).
- UNICEF: USD 16 million is earmarked for cholera prevention including USD 12 million from the Canadian International Development Agency (CIDA) and USD 2.5 million from the Japanese International Cooperation Agency (JICA).
- World Bank: USD 30 million is available for rural WASH (sanitation and water kiosks).
- Swiss Development Cooperation (SDC): has provided USD 4 million in total for WASH activities including USD 1.5 million for strengthening URD water quality capacity and USD 2.5 million for a rural WASH program implemented by the Swiss NGO Helvetas.
- CDC: USD 50 million is being spent for cholera response since October 2010 through fiscal year 2014. This support included health and WASH activities (including TEPAC training).

*Cholera:* For cholera response, current funding needs for WASH interventions are estimated to be between USD 750 million and 1.1 billion.<sup>87</sup> Based on a study conducted in Colombia and Peru and reported in a United Nations document regarding cholera, "every dollar invested in activities targeting hygiene, sanitation and water yields savings from US\$ 3 to US\$ 462 on the response."<sup>88</sup>

There is low demand and lack of willingness to pay for certain water and sanitation products available in the market due to saturation of free products after the start of the cholera epidemic control programs.<sup>89</sup> This will most likely affect the sustainability of any cholera-related behavior change focused on water treatment.

Generally, key challenges to the financial sustainability of the WASH sector include:

- Willingness to pay: As mentioned, there is a general lack of willingness to pay for water services. An attitude shift is needed so that water systems become sustainable. As each household must now build their own sanitation solution, the paradigm of payment will shift; this will take time.
- Funding: As mentioned, the WASH sector is very donor-dependant. UNICEF, a key player in the effort to eradicate cholera, fundraises for projects but has no steady funding source. According to Oxfam, AECID has reduced by 30% its support to water structures and is focusing (along with the IDB) on results-based projects. Time will tell how the WASH structure will be able to be financially sound.

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<sup>86</sup> DINEPA. "Présentation et Bilan 2012-2014. »

<sup>87</sup> PAHO, WHO, CDC. "Call to Action: A Cholera Free Hispaniola."

<sup>88</sup> United Nations in Haiti. (2013). "Cholera in Haiti: An End in Sight."

<sup>89</sup> USAID/Haiti. (2011). "ProMark Project, Midterm Evaluation. "

## Sustainability Factor #4: Technical

*Key Concepts:* Technical sustainability of WASH services is primarily achieved through the availability of trained and motivated human resources combined with the local availability of appropriate technology or hardware for local water and sanitation requirements. It requires access to supply chains, technical support and replacement parts, while operating within the context of appropriate solutions for the given geography, water supply, household sanitation, institutional framework and customer.

*Rural WASH:* According to USAID/Haiti's proposed WASH strategy,<sup>90</sup> Haiti has poor water and sanitation infrastructure with very low coverage and high physical water losses. Before the earthquake, it was estimated that rural access to "improved" sources for drinking water was 51%. Improved sanitation coverage was estimated at 12% for rural areas (up to 18% if shared facilities were counted). According to the latest Demographic Health Survey for Haiti (2012), only 48.9% of rural households obtained their drinking water from an improved source and 19.6% of rural households had access to non-shared improved sanitation.<sup>91</sup>

According to information collected by TEPACs in rural areas,<sup>92</sup> more than one third of existing water kiosks are out of service in the Nord, Sud, Grande Anse and Artibonite departments. Around 58.4% of existing water fountains are functional, only 37% of these systems had chlorination systems.

Article 20 of the 2009 water law stipulates that operation manuals for CAEPAs and CPEs should be established by OREPAs and validated by DINEPA.<sup>93</sup> Operators in rural areas need clear guidance and regular follow up to sustain water and sanitation services.

DINEPA's rural department has developed a comprehensive technical manuals (*Référentiel Technique*) which includes 119 modules for standards related to the design, construction, operation and management of water and sanitation systems; all executing agencies are expected to use these manuals, yet there is no regulation to enforce this measure.

Water quality indicators that are currently being used in the country are the international standards mandated by the World Health Organization (WHO). The Pan American Health Organization (PAHO), with the support of UNICEF, is supposed to release a set of Haitian indicators this year. The indicators must juggle several aspects including the need for quality of potable water but also the need for these indicators to be attainable.

USAID's flagship health program, Santé pour le Développement et la Stabilité d'Haïti (2007-2012), covered ten departments and targeted over 4 million people in vulnerable situations. The program made clean water available for schools, orphanages, health centers and households. The program also contributed to infrastructure and renovation work for water network facilities.<sup>94</sup>

*Cholera:* According to a recent article about progress on the challenges to control cholera,<sup>95</sup> DINEPA has completed an inventory of water and sanitation infrastructure that provides a baseline for targeted improvements. A remaining challenge is to link information on the status of water and sanitation infrastructure with outbreak data from the cholera surveillance system.

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<sup>90</sup> USAID/Haiti (2010). "Proposed Water, Sanitation and Hygiene Strategy."

<sup>91</sup> EMMUS-V. (2012). "Enquête Mortalité, Morbidité et Utilisation des Services."

<sup>92</sup> DINEPA. "Institutional Strengthening and Data Reporting on Key WASH Indicators in Rural Haiti."

<sup>93</sup> Le Moniteur (2009). "Loi Cadre Portant Organisation du Secteur de l'Eau Potable et de l'Assainissement."

<sup>94</sup> Management Sciences International. (2012). "Santé pour le Développement et la Stabilité d'Haïti (SDSH) End of Project Report, August 2007-September 2012."

<sup>95</sup> PAHO. (2014). "Haiti Partners See Progress, Challenges in Cholera Control."

Interventions of key UNICEF partners in the eradication of cholera (ACTED in the South and Grande Anse Departments and Oxfam in the North and Northeast Departments) include the rehabilitation of WASH facilities at community centers, markets and health centers.<sup>96</sup>

### **Sustainability Factor #5: Environmental**

*Key Concepts:* Environmental sustainability entails placing WASH interventions in the wider context of the natural environment and implementing an approach of integrated and sustainable management of water and wastewater flows, resource health and livelihoods.

*Rural WASH:* According to USAID/Haiti's proposed WASH Strategy,<sup>97</sup> sufficient and sustainable access to water resources is key to reducing vulnerabilities to natural disasters/climate variability/change and food insecurity. Investments in water and sanitation infrastructure, in particular for water points and water storage, as part of the earthquake response can build resiliency to future natural shocks by protecting human health, animal survival, and local food production.

Although Haiti has a relatively abundant amount of rainfall and high per capita potential renewable water resources, it is considered one of the poorest countries in terms of access to water resources.<sup>97</sup> The majority of surface water is lost to the ocean due to the lack of water storage infrastructure and the lack of proper development and management of water supply. Agricultural and industrial activities and untreated wastewater have caused contamination of water resources, especially groundwater.

The Post Earthquake USG Haiti Strategy<sup>98</sup> reports that 85% of Haiti's watersheds are degraded. There is only 2% forest coverage. The Government of Haiti has established a National Agriculture Investment Plan for 30 watersheds; activities include watershed management, irrigation and rural infrastructure. Deforestation is a major issue for water resources, agricultural production, and environmental protection.<sup>9</sup> Rates of deforestation have accelerated soil erosion causing siltation of water systems and reservoirs, decreased agricultural production, reduced groundwater recharges, and increased runoff which in turn damages mangroves and barrier reefs.

*Cholera:* A Boston University study on cholera conducted in rural areas of Haiti in 2012<sup>99</sup> tested fresh spring water from rural areas. The results indicated that 71-100% of the samples did not meet WHO drinking water standards. According to the National Plan for the Elimination of Cholera in Haiti,<sup>100</sup> there is no legal framework for solid waste, which is under the supervision of the Service Métropolitain de Collecte des Résidus Solides (SMCRS). Inadequate collection and disposal of solid waste can be a major challenge in cholera hotspots.

### **Sustainability Factor #6: Social and Behavior Change**

*Key Concepts:* Social sustainability refers to ensuring that the appropriate social conditions and prerequisites are realized and sustained so the current and future society is able to create healthy and livable communities. Socially sustainable intervention is demand-driven, inclusive (ensuring equity), gender equal, culturally sensitive and needs-based. Behavior change is a cross cutting element of sustainability that addresses the need for sustained human behaviors to ensure that WASH facilities are used and financially supported, that health-promoting changes in WASH practices are lasting, and that demand for service improvements continues. This includes modifying water, sanitation, and hygiene

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<sup>96</sup> UNICEF (2014). "Support to the National Contingency Plan to Eliminate Cholera in Haiti: Proposal to Request Funds from DFID."

<sup>97</sup> USAID/Haiti (2010). "Proposed Water, Sanitation and Hygiene Strategy."

<sup>98</sup> USG. (2011). "Post Earthquake USG Haiti Strategy: Toward Renewal and Economic Opportunity."

<sup>99</sup> Boston University School of Public Health. (2012.) "Cholera in Rural Haiti: Recommendations for Point of Use Water Treatment."

<sup>100</sup> MSPP and DINEPA. (2013). "National Plan for the Elimination of Cholera in Haiti 2013-2022."

practices, where inducing critical changes in behavior requires significant ongoing facilitation, education, communication and motivation, customized to the local social and cultural context.

*Rural WASH:* Statistics for rural WASH show the need for behavior change, particularly in regards to sanitation behaviors. USAID/Haiti's proposed WASH Strategy<sup>101</sup> recommends the development of a strong focus on sanitation and hygiene behaviors through behavioral change and communication (BCC) programs targeting key hygiene behaviors such as hand washing, safe food preparation, point of use (POU) water treatment, and safe storage of drinking water. According USAID/Haiti's ProMark Project,<sup>102</sup> in order to sustain behavior change, interventions and messaging are necessary and should be focused geographically and be continuously available.

Prior to the latest earthquake, more than 3 million Haitians still engage in open defecation and poor hygiene practices.<sup>103</sup> For water practices, according to the most recent demographic health survey,<sup>104</sup> more rural households than urban households treat their water with acceptable methods (76% versus 58%).

In general, there is very little focus and funding going to social mobilization; this concerns DINEPA officials. "If the water committee is weak, then the system is weak." DINEPA officials state that everyone is interested in "access" rather than thinking about "service" which would entail a sustainable model. DINEPA suggests a 6-12 month support to CAEPAs once the infrastructure is built to accompany the committees, to identify problems and work on solutions. DINEPA used the example of a 10 million USD project that has only 500,000 USD in software (including 100,000 USD for a service delivery campaign); this translates into only 5% being focused on software. Certain donors are realizing the problem; according to the IDB, many projects just focus on hardware which translates into a disaster.

Several USAID-supported projects have components that focus on behavior change. USAID/Haiti's Title II MYAP Program,<sup>105</sup> for example, conducted a health messaging campaign that included hygiene promotion at MSPP-managed health clinics, mobile clinics and rally posts at community structures such as schools. The program also trained mothers clubs in hygiene promotion.

Community health workers (CHWs) are typically trained using a standard methodology and set of modules published by the MSPP. These modules include a WASH module. The community health modules were completed in 2012 through a tripartite agreement between Haiti, Cuba and Brazil. The training is a 10 week course coordinated by MSPP; the agents also get refresher courses. Each CHW is paid between 145 and 150 USD per month. The hope of MSPP is to have 10,000 community health workers nationwide. TEPACs are involved with sensitization of the population around hygiene and sanitation; they are supposed to coordinate activities with the MSPP-supported CHWs.

*Cholera:* The UNICEF Cholera Toolkit<sup>106</sup> recommends that: "1) both interpersonal methods and community / mass media methods be used, 2) consistent messaging, 3) community engagement to strengthen capacity to identify their own issues and development needs, assess their options and take action, and design community action plans, including how to improve WASH practices."

A Boston University study suggests that social norms hinder behavior change in Haiti.<sup>107</sup> Drinking water from rivers and engaging in open defecation are social norms in certain parts of the country. The study suggests that, for example, "boiling water may show superiority over neighbors." The study proposes a behavior change cycle which includes: "1) social marketing promotes awareness to raise the perceived

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<sup>101</sup> USAID/Haiti (2010). "Proposed Water, Sanitation and Hygiene Strategy."

<sup>102</sup> USAID/Haiti. (2011). "ProMark Project, Midterm Evaluation."

<sup>103</sup> USAID/Haiti (2010). "Proposed Water, Sanitation and Hygiene Strategy."

<sup>104</sup> EMMUS-V. (2012). "Enquête Mortalité, Morbidité et Utilisation des Services."

<sup>105</sup> ACDI/VOCA Haiti. (2010). "Title II MYAP Midterm Evaluation."

<sup>106</sup> UNICEF. (2013). "Cholera Toolkit."

<sup>107</sup> Boston University School of Public Health. (2012). "Cholera in Rural Haiti: Recommendations for Point of Use Water Treatment."

threat and susceptibility, 2) heightened perceived threat leads to a greater expected net gain and a higher likelihood of action, and 3) innovators adapt the behavior at the individual level and influence adoption.”

There are other important attitudes to consider in the Haitian context:

- According to the Boston University Study on Cholera in Rural Haiti,<sup>108</sup> there is a stigma of cholera caused by fear and misconceptions. There is general mistrust and uncertainty of outsiders.
- Free water services for internally displaced persons (IDP) camps are being transitioned to cost-recovery systems. IDPs may revert to other water sources that can be contaminated.<sup>109</sup>
- Several studies have been completed attempting to understand the determining factors for behavior change. According to one study conducted by Oxfam,<sup>110</sup> the most important factors for determining behavior change are: attitudes, abilities, belief and norms. Of minor importance was knowledge and behaviors about risk of cholera. Regarding hygiene promotion activities, the most influential were radio spots or call in programs, material distribution coupled with practical demonstration, watching a play or participating in a group discussion. The least important include knowing a hygiene song, participating in a focus group or a special hygiene day, a home visit, etc. Oxfam and Helvetas are currently conducting a similar study to assess factors that influence behavior change in regards to sanitation; results are expected in the next few months.
- There is a general fatigue of the population with the messages being broadcast through mass media. Many messages have been broadcast for several years and the population no longer pays attention. Based on conversations with CHWs in Boucan Carré, messages should be targeted to the local context and delivered at the household level. Pathfinder, at the global level, has developed an innovative way of developing BCC and information, education and communication (IEC) materials. They use a bottom-up approach to identify barriers to behavior change. They conduct focus groups and use board games with fictional characters to identify social, personal and environmental facilitators and barriers to behavior change. The tool has just recently been presented to the Haiti SSQH team and will be piloted.
- Certain groups interviewed mentioned that communities want more than just sensitization, they also request hardware. An interesting initiative from DINEPA is to prioritize communities already with sanitation facilities for the installation of water systems;<sup>111</sup> time will tell if this approach assists in the establishment of household sanitation facilities.
- There is a high level of dependency in the country (a “give me” attitude”). There needs to be a change in mentality of the population, which will require a long-term concerted commitment by all actors working in Haiti. There is generally a lack of trust and no sense of community. CHWs try to resolve this issue as they are hired from the community and know the dynamics of the population with whom they work. These agents are the entry point into the community.

### **Sustainability Factor #7: Integration**

*Key Concepts:* Integration of WASH activities in other programs is vital for overall development of communities and countries. Access to WASH in rural areas has implications in economic activities, health well-being of the population and access to education. WASH activities incorporated into education, health, infrastructure, and agriculture development programs should also focus on the sustainability of the systems, including the establishment of WASH committees, hygiene promotion, etc.

*Rural WASH:* USAID/Haiti’s proposed WASH Strategy<sup>112</sup> recommends the integration of on-site sanitation interventions with a broader environmental sanitation approach that includes solid waste

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<sup>108</sup> Boston University School of Public Health. (2012.) “Cholera in Rural Haiti: Recommendations for Point of Use Water Treatment.”

<sup>109</sup> Farmer et al. (2011). “Meeting Cholera’s Challenge to Haiti and the World: A Joint Statement on Cholera Prevention and Care.”

<sup>110</sup> Oxfam. (2012). “Behavior Change in an Emergency Context.”

<sup>111</sup> DINEPA. (2014). « Stratégie d’Intervention en Assainissement en Milieu Rural. »

<sup>112</sup> USAID/Haiti (2010). “Proposed Water, Sanitation and Hygiene Strategy.”

management and treatment of sewage liquid waste. The strategy proposes linking human health approaches more directly with environmental quality and pollution preventions under the economic growth fund. The proposed strategy also recommends, to the extent possible, that any investments in water resources development in rural areas should be designed as “multiple use systems” in which potable water supply is coupled with facilities for productive water use, including small-scale gardening or irrigation, small livestock watering, etc. Increasing incomes as well as food production can help households build assets necessary to weather one or more cycles of extreme drought or crop failure.

WASH activities have been incorporated in health programs funded by USAID. The Title II agriculture project<sup>113</sup> included activities such as water treatment and sanitation. The ProMark project<sup>114</sup> focused on child survival, HIV/AIDS and family planning; activities including the social marketing of water purification products and oral rehydration solutions (to combat cholera). The Santé pour le Développement et la Stabilité d’Haïti<sup>115</sup> project included WASH infrastructure and community training on diarrhea prevention.

As a part of the new flagship health project funded by USAID Services de Santé de Qualité pour Haiti, Zanmi Lasanté (the local NGO branch of Partners in Health) under Pathfinder is focusing on WASH services in health facilities in the Central Plateau. Zanmi Lasanté is currently conducting an in-depth assessment of 23 health facilities; next year, they will add another 40 facilities. The SSQH project is training health providers and advisors on a series of topics, including WASH and cholera prevention.

USAID’s Office of Infrastructure, Energy and Engineering (OIEE) supports WASH related work through its housing, hospitals and food security programs.<sup>116</sup> Work on sanitation, in particular, may not be fully attributed in reporting. Based on intelligence gathered from the USAID Latin America team, OIEE has supported the construction of sanitation facilities, which contribute to cholera prevention.

In urban slum areas, many NGOs are linking WASH with other infrastructure projects (roads, electricity, security of ravines, etc.) and livelihood opportunities. For sanitation, as stated by law, each household must build and finance its own toilet. Certain NGOs support households to connect to a septic tank. Solidarités is piloting a septic tank approach in which they link 10-20 households together and establish an operation committee and a tariff system for the maintenance of the infrastructure.

Action Against Hunger (Action contre la Faim, ACF) is linking WASH and nutrition in schools. They are also working on livelihoods approaches that incorporate WASH activities, such as kitchen gardens.

Hygiene practices affect people’s wellbeing and different parts of society. Thus, hygiene promotion involves several different ministries. Institutions collaborating in the Inter-Sectoral Strategic Plan on Hygiene Promotion<sup>117</sup> include DINEPA, MENFP, MSPP, Ministry of Agriculture and Natural Resources (MARNDR), Ministry of Environment, Ministry of Commerce and the Metropolitan Waste Collection Service (SMCRS). The strategy aligns the work of the different ministries under four large axes:

- Strengthening of institutional and regulatory frameworks;
- Community mobilization for social change;
- Communication for behavior change;
- Advocacy.

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<sup>113</sup> ACDI/VOCA Haiti. (2010). “Title II MYAP Midterm Evaluation.”

<sup>114</sup> USAID/Haiti. (2011). “ProMark Project, Midterm Evaluation. “

<sup>115</sup> USAID/Haiti. (2012). “Santé pour le Développement et la Stabilité d’Haïti (SDSH) Quarter 2 Report, October - December 2012.”

<sup>116</sup> USG. (2011). “Post Earthquake USG Haiti Strategy: Toward Renewal and Economic Opportunity.”

<sup>117</sup> “ Plan Stratégique Intersectorielle de Promotion de l’Hygiène, 2013-2018. ”



Two large inter-institutional campaigns are currently ongoing. One is the Healthy Schools Campaign. The campaign, led by MENFP with financial support from UNICEF, aims to certify 100 schools as “schools friends of hygiene.” State partners include DINEPA, Ministry of Finance, MSPP and Ministry of Youth, Sports and Civic Action.<sup>118</sup> The other campaign is the National Strategy for the Elimination of Cholera which brings together DINEPA and MSPP to fight against cholera.

Although integration is becoming more and more common, several key constraints were voiced by certain actors. These include:

- Advocacy: Certain actors do not seem to understand the need for integration. JICA, for example, is currently constructing schools without sanitation facilities.
- Correcting for past projects: WASH statistics are critical in schools and health facilities. According to the Ministry of Education, only 26% of schools have access to water<sup>118</sup>. MSPP reports that only 79% of health facilities have access to an improved water source; only 46% of facilities have sanitation facilities.<sup>119</sup> Donors must provide funding to bridge this gap and provide WASH services in these institutions.

*Cholera*: The eradication of cholera can only be achieved through an integrated WASH and health strategy. The UNICEF Cholera Toolkit<sup>120</sup> recommends an integrated cross-sectoral approach to cholera, with collaborations between health, WASH and cross-cutting themes such as education, nutrition, and child protection, and supporting services. The cholera prevention and care document<sup>121</sup> calls for an integrated approach with three major goals: 1) bolster case finding and treatment, 2) strengthen water and sanitation systems, and 3) link prevention to care. The National Plan to Eradicate Cholera in Haiti<sup>122</sup> calls for four areas of action: 1) water and sanitation; 2) epidemiologic surveillance; 3) health promotion for behavior change; 4) care of infected persons in health institutions.

As a part of UNICEF’s strategy to eliminate cholera, the five WASH NGOs spread throughout the country are now paired with a health NGO. This will support an integrated approach to cholera eradication. Governmental entities have followed suit, as DINEPA is deploying TEPACs and the MSPP is deploying EMIRA teams to outbreaks.

Many donors are focusing WASH interventions as cholera response / prevention. The IDB, for example, states that all their WASH activities fall under cholera prevention, as the installation of WASH infrastructure is a key component of the elimination of cholera. This attitude was echoed by UNICEF; the UNICEF representative stated that the Total Sanitation Campaign is intrinsically linked to cholera prevention.

In terms of cholera, there are still key challenges:

- Personalities: In general, NGOs report that cholera response between the MSPP, DINEPA and NGOs is well coordinated. However, in certain departments (such as the South Department), there are personalities within the MSPP who make coordination difficult.

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<sup>118</sup> Ministère de l’Education Nationale et de la Formation Professionnelle (MENFP): Direction de Santé, Nutrition et Education (2013). “Programme Certification Ecole Amie de l’Hygiène.”

<sup>119</sup> MSPP, Institut Haïtien de l’Enfance and MEASURE DHS ICF. “Evaluation de Prestation de Services de Soins de Santé : EMMUS Haïti 2013 : Rapport Préliminaire.”

<sup>120</sup> UNICEF. (2013). “Cholera Toolkit.”

<sup>121</sup> Farmer et al. (2011). “Meeting Cholera’s Challenge to Haiti and the World: A Joint Statement on Cholera Prevention and Care.”

<sup>122</sup> MSPP and DINEPA. (2013). “National Plan for the Elimination of Cholera in Haiti 2013-2022.”

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## ANNEX C: ASSESSMENT TEAM

The Assessment Team consists of two international consultants. Mohamed Chebaane is the Evaluation Team Leader. He is a senior water management expert and an international development specialist. Dr. Chebaane brings more than 25 years of experience in integrated water resources management, urban and agricultural water management, water and sanitation, water utility management, water demand management and water use efficiency for agricultural, domestic, institutional and commercial sectors , institutional strengthening, water policy, and public-private partnership. He has proven experience in managing and providing technical leadership to international development projects. Stéphanie Maurissen is the WASH Sector Expert. Ms. Maurissen has a Master's in Public Health and brings more than ten years of experience in international development with a main focus on management of water and sanitation programs. She spent more than a year in post-earthquake Haiti leading the transition of a major international NGO's programming from disaster response to long-term development. Contact information for both team members are presented below:

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