

Briefing Note 2 – 7 October 2016

# HAITI

## Hurricane Matthew Category 4: Saffir-Simpson



Need for international assistance	Not required	Low	Moderate	Significant	Major
Expected impact	Very low	Low	Moderate	Significant	Major

At least 25% of Haiti's territory has been impacted by Hurricane Matthew (Handicap International 6/10/2016). Sud, Sud-Est, Grande Anse, Nippes, Nord-Ouest, and Ouest departments are the most affected. Between 3 to 5 million people are affected in Haiti with 468,000 in the departments of Grand'Anse and 775,000 in Sud alone, including 522,000 children (ECHO 6/10/2016; UNICEF 04/10/2016). Windspeeds of 230km/h impacted approximately 630,000 people in Sud, Nippes, and Grand'Anse (UNITAR 06/10/2016).

350,000 people are estimated to be in need of assistance (OCHA 04/10/2016). At least 15,623 people have been displaced and over 21,000 have been evacuated to temporary shelters (UNICEF 5/10/2016; AFP 6/10/2016). So far, more than 300 people have been reported dead (AFP 7/10/2016).

The Category 4 hurricane struck the southwest coast of Haiti at 0700 local time (1200 GMT) on 4 October. Wind speeds of 230km/h were recorded, and caused widespread damage, flooding, and displacement. It continued across the northwest of the country (UNOSAT 5/10/2016).

### Crisis overview

Hurricane Matthew, Haiti, 6 October  
Population vs. windspeed intensity by commune



Sources: UNOSAT, CNIGS, WorldPop

### Key findings

#### Anticipated scope and scale

A greater humanitarian response will likely be necessary to prevent dire long-term consequences; especially given the cholera crisis. Death toll and displacement figures will increase as humanitarians gain further access to affected areas.

Existing political tensions and may be aggravated in what is expected to be a volatile post-crisis environment, causing additional access and protection concerns.

#### Priorities for humanitarian intervention

**Health:** There is a very high risk of a significant increase in cholera as a result of damage to weak WASH infrastructure. Health infrastructure has been damaged or is inaccessible.

**WASH:** 30,000 people in Jérémie have reportedly no water. Extensive contamination of water sources is highly likely in affected areas, exacerbating the already high risk of waterborne diseases, particularly cholera. WASH assistance has been planned for 1.2 million people.

**Shelter:** At least 15,623 people have been displaced. Extensive damage to homes has occurred across the country.

**Food and NFI:** Preliminary assessment indicates food shortages in worst-affected areas of Sud department. Extensive damages to plantations have been reported throughout the affected areas.

**Humanitarian constraints** Landslides and flooding have been reported in all coastal areas. There is bridge damage and access issues in the southern departments, and significant issues with telecommunications and electricity access. There is no road access from the capital to the south.

## Crisis impact

Department	Population affected	Affected population living in 120km/h wind speed zones
Artibonite	1,722,460	0
Centre	750,383	0
Grand'Anse	472,788	472,788
Nippes	338,413	58,647
Nord	1,067,549	0
Nord Est	400,195	0
Nord Ouest	720,505	0
Ouest	4,008,419	0
Sud	772,601	593,967
Sud-Est	634,347	0
<b>Total</b>	<b>10,887,658</b>	<b>1,125,402</b>

Source: UNOSAT 06/10/2016

and one in both Thoitte and Bel-Anse in Sud-Est (Haiti Government 5/10/2016, WHO 6/10/2016).

Cases of Chikungunya, malaria, dengue, and Zika virus are likely to temporarily decrease as high winds and flooding destroy mosquito breeding sites. However, when the floodwaters are expected to subside in three weeks, transmission is likely to return to previous problematic levels (CDC 4/10/2016).

Nine of Haiti's 15 main hospitals remain functional (PAHO 06/10/2016). In Grand-Anse departement, the he St Antoine Hospital in Jérémie has been severely damaged and Dame Marie hospital has been uncontactable. Notre Dame Hospital in Ouest, Port de Paix hospital in Nort-Ouest in Jérémie as well as St Boniface Hospital in Sud are functioning

**Health:** There is a very high risk of a significant increase in cholera as a result of damage to chronically weak WASH infrastructure, and contamination of water sources, and transmission due to flooding (OCHA 31/08/2016). As of 6 October, there have been 18 new suspected cases of cholera in Artibonite and three confirmed cases in Grand-Anse, one in Sud,

normally but low on supplies (PAHO 06/10/2016). Les Cayes hospital and Camp-Perrin hospital in Sud have been evacuated (Pacific Disaster Center 5/10/2016; PAHO 06/10/2016).

The 2010 earthquake destroyed an estimated 60% of Haiti's health system, including 50 health centres, and a number of hospitals have still not been fully rehabilitated. Others lack staff and essential medical equipment (USAID 31/01/2016).

**WASH:** 30,000 people in Jérémie have reportedly no water at all (CRS 5/10/2016). Water distribution systems are reported 100% collapsed in the main affected cities of the southern area, particularly Jeremie and Les Cayes (ECHO 7/10/2016). The impact of the hurricane has increased the already high risk of waterborne diseases, particularly cholera. Natural water sources, particularly in the southern departments, have been contaminated by stormwater and sewage overflow (Haiti Government 5/10/2016). WASH assistance has been planned for an additional 1.2 million people, while previously already 1.35 million people were in need of WASH assistance due to drought (UNICEF 5/10/2016; OCHA 02/03/2016).

**Shelter and NFIs:** Mandatory evacuations for an estimated two million people are in effect (PAHO-WHO 6/10/2016). Haitian Civil Protection reports close to 27,000 people staying in temporary shelters, most of them in the south, but there are reports of up to 150,000 people in shelters in Grand'Anse department alone (NY Times 06/10/2016; PAHO 06/10/2016). 234 shelters have been opened across the country, including 186 temporary shelters across the south (UNICEF 5/10/2016). Schools and churches are often used as temporary shelters.

## Houses damaged as reported by government of Haiti

Department	Houses flooded	Houses severely damaged	Houses destroyed
Nippes	1,580	399	247
Sud	56	18	59
Sud-Est	-	58	30
Ouest	219	25	12
<b>Total</b>	<b>1,885</b>	<b>500</b>	<b>348</b>

Source: Haiti Government 5/10/2016

Extensive damage to homes has occurred across the country. 11 municipalities suffered flooding in the coastal areas of Nippes, Sud, and Grand'Anse. Les Cayes, Torbek, and Acquin in Sud department were heavily flooded (UNICEF 5/10/2016). Media report over 29,000 homes destroyed in Sud department, with up to 75% of houses in Les Cayes having damaged roofs. 10,000 people are without shelter in Arniquet, Sud (Alter Presse 06/10/2016). In Jérémie, Grand'Anse, 80% of buildings are reportedly destroyed (PDC 06/10/2016; BBC 06/2016; NY Times 06/10/2016).

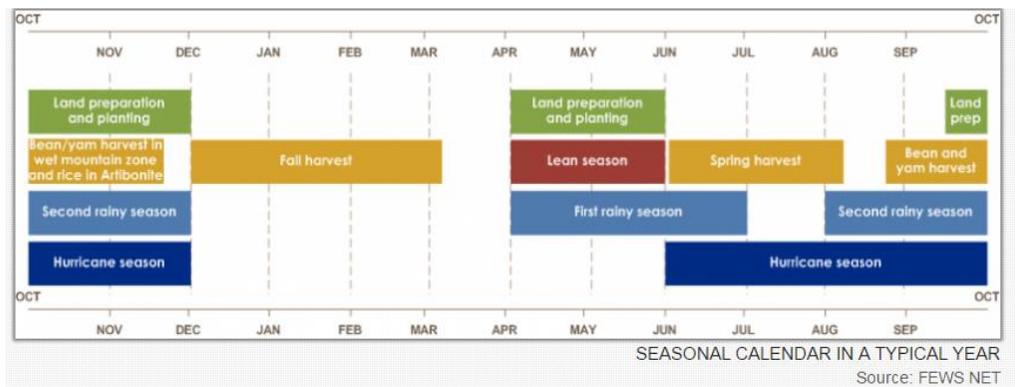
Vulnerable families have lost their homes in Nord-Ouest and Artibonite. 20,000 people are affected by flooding in Bombardopolis, Nord-Ouest (ACF 5/10/2016).

**Food:** The preliminary assessment from the Mission Aviation Fellowship indicates food shortages in worst-affected areas of Sud department (WHO 6/10/2016). In Beaumont, Grand'Anse, 18 shelters lack food (PAHO 06/10/2106).

Extensive damage to plantations has been reported in Nippes and Grand'Anse, though many of those affected by the storm have experienced some loss of crops and livestock (Handicap International 6/10/2016; Haiti Government, 5/10/2016). Many fields in the south are covered in seawater and debris. In Arcahaie, Ouest departement, the largest banana-growing area in Haiti, over 80% of crops have been destroyed, affecting 20,000 people (NY Times 06/10/2016). WFP reports up to 80% of harvest lost in some areas of Sud-Est and 100% harvest lost in the Sud (WFP 05/10/2016). Irrigation systems in Léogâne, Grand Goave, and Petit Goave in Ouest department have also suffered significant harm (Haiti Government 05/10/2016). Flooding, storm surge and landslides may have damaged the beans, rice, and sorghum harvest, which is due in October (FAO 04/10/2016). See key characteristics for a map of livelihood zones and the seasonal calendar.

Rice is Haiti's main staple and is mostly imported from the United States. The price of imported rice is higher in Jacmel and Jérémie – both affected by the hurricane – than in Port-au-Prince (FAO 4/10/2016). Limited airport and port infrastructures will reduce rice availability on the markets and increase the prices of other commodities. High food prices have reduced food access for the most vulnerable households throughout 2016, and September saw little change in prices (OCHA 04/2016).

### Haiti seasonal calendar



**Livelihoods:** Satellite images of the impact of the hurricane show that many boats have been destroyed, which will impact the livelihoods of fishermen in coastal areas (Pacific Disaster Center 6/10/2016). Dead livestock have been reported, especially in Sud-Est (CARE 5/10/2016; Haiti Government, 5/10/2016).

**Protection:** The affected areas are among the most likely to experience family separation due to high rates of child placement out of home and therefore exposure of children to violence, exploitation and abuse (UNICEF 05/10/2016). Violence has been reported between authorities and people refusing to join emergency shelters in Grand'Anse (Haiti Government 05/10/2016).

**Education:** Schools were closed before the landing of the hurricane, on 3 October, and are to remain closed until 10 October (local media 2/10/2016). Reports of schools being used as collective centres could prevent some of them from reopening (local media 05/10/2016). Nippes reports severe damage to education infrastructure, including damage to three schools in Paillant and Miragoane (UNICEF 5/10/2016; Haiti Government 5/10/2016). Many children will suffer long-term loss of education access; this includes an estimated 130,000 vulnerable (Save the Children 06/10/2016).

### Vulnerable groups affected

**Children:** At least 2,000 children who have been separated from their parents due to the storm or were living in orphanages have been evacuated (UNICEF 06/10/2016). 130 children and 17 disabled people were evacuated from Jérémie Wharf, while 21 disabled people have been evacuated from Les Cayes (Haiti Government 5/10/2016).

**IDPs:** More than 55,100 IDPs were living in camps in Ouest department prior to Matthew, most of which are within the Port-au-Prince arrondissement (IOM 27/09/2016). 82 transitional shelters and tents were destroyed and 270 damaged in 14 IDP camps throughout the Port-au-Prince arrondissement (IOM 6/10/2017). In the past, IDPs have faced protection issues when natural disasters have hit Haiti, especially after the 2010 earthquake (Protection Cluster 05/07/2010). These include crime in camps, including violent crime and rapes by escaped prisoners (Protection Cluster 05/07/2010).

**Haitian returnees from Dominican Republic:** Arrivals of people from Dominican Republic have been ongoing since June 2015, following regularisation process regarding foreigners with no legal status in Dominican Republic (DR) (VOA 12/2015; VOA 05/01/2013). 67% of arrivals do not possess any type of documentation and are at risk of statelessness as Haitian authorities refuse to accept non-national deportees on its territory (OCHA 30/06/2016). Arbitrary deportations and racial profiling have been reported by the Haitian government and this may hinder access to assistance (UNHRC, 28/07/2015; OCHA, 6/04/2016).

## Humanitarian and operational constraints

Widespread landslides and flooding have been reported in all coastal areas (OSOCC 6/10/2016).

**Port-au-Prince:** The airport in Port-au-Prince reopened on 6 October (UNICEF 5/10/2016). The bridge in Croix des Missions has been cut to both vehicles and pedestrians. Electricity cuts have been reported (Haiti Libre 04/10/2016). Violent crime is endemic in Cité Soleil and may impact humanitarian actors (OSAC 05/10/2016). Fears of greater insecurity intensified in September after a truck loaded with weapons, ammunition, and diverse military equipment was seized by Haitian authorities (ICG 09/2016). The spike in crime that followed the 2010 earthquake was reportedly particularly high in Port-au-Prince (Protection Cluster 05/07/2010).

**Grand'Anse:** All intercommunal roads have been damaged in Grand'Anse. Communication were completely cut throughout the department on 5 October (Haiti Government 5/10/2016). However, UNICEF is reporting that telecommunication has been re-established as of 6 October (UNICEF 6/10/2016).

**Sud:** The La Digue bridge, which connects Nippes, Grand'Anse, and Sud departments to the rest of Haiti, has collapsed (Haiti Libre 4/10/2016). Traffic between Les Anglais and Tiburon has been interrupted due to landslides (Haiti Government 5/10/2016). As of 6 October, the Digicel network in Les Cayes and Saint Louis du Sud, both in the Sud department, have improved (Haiti Libre 5/10/2016).

**Nippes:** The cities of Baradères, Grand Boucan, Miragoane, and Petit-Trou de Nippes have been flooded, with considerable road damage reported. Telecommunications are severely limited (Haiti Government 5/10/2016).

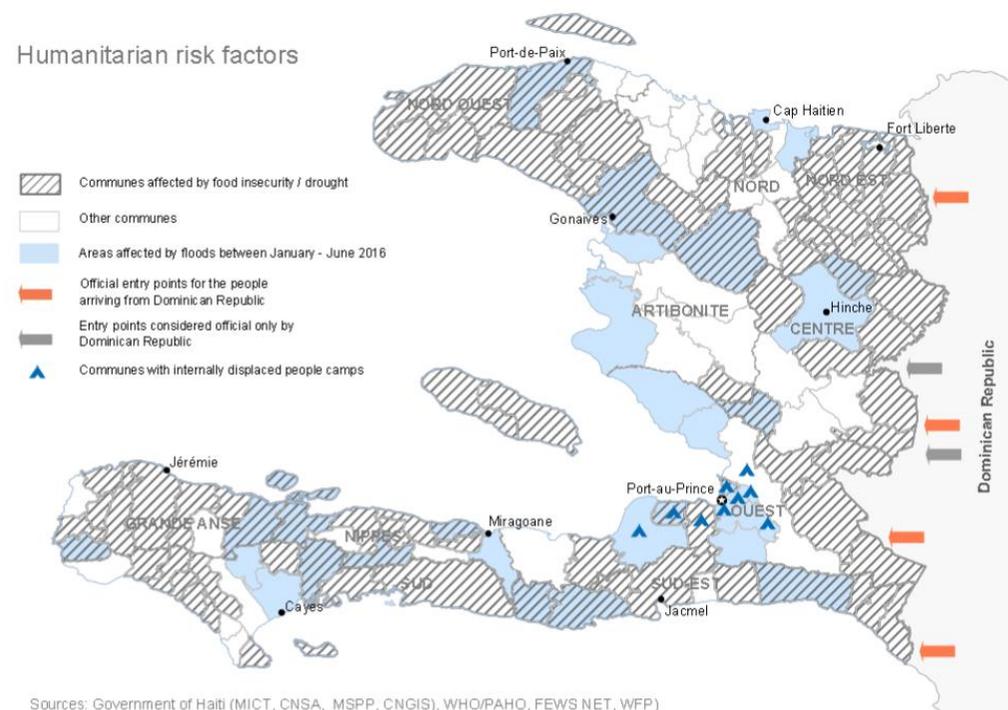
**Sud-Est:** The road to Jacmel has been damaged. Power outages have been reported and has hampered communications (OCHA 05/10/2016).

**Ouest:** Kensoff road in Fermathe, Ouest department, has been completely obstructed. A bridge has collapsed in Petit Goave. (Haiti Government 5/10/2016).

**Artibonite:** Gonaives port has been destroyed (Logistic Cluster 6/10/2016).

## Aggravating factors

### Humanitarian risk factors



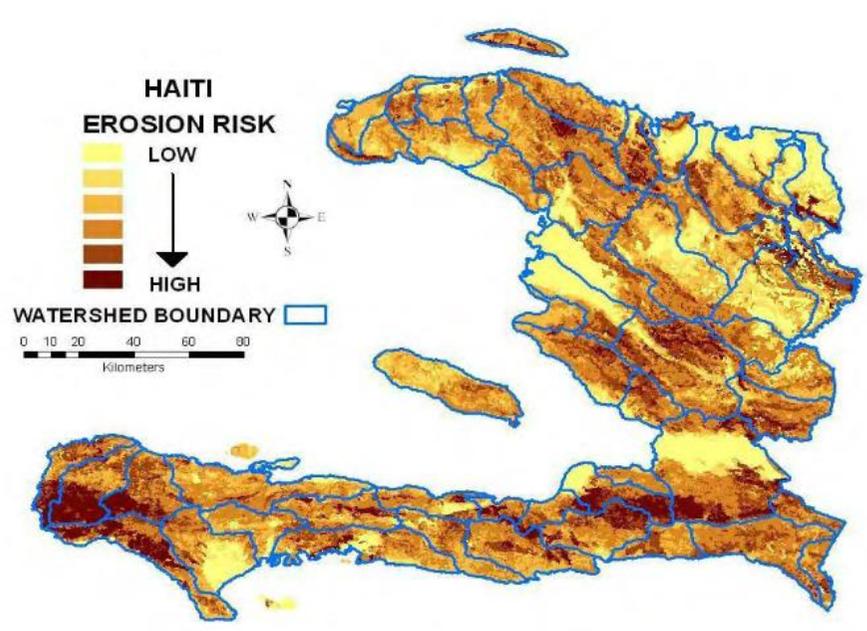
Sources: Government of Haiti (MICT, CNSA, MSPP, CNGIS), WHO/PAHO, FEWS NET, WFP

### Risk of related disaster

Rain and the risk of flooding and landslides due to Hurricane Matthew persist. The Hurricane season will end in December, meaning there is a persistent risk of cyclones of storms until the end of the year (FEWSNET 2016).

Landslide and flooding risks are heightened by endemic soil erosion and deforestation due to centuries of agricultural exploitation (McClintock 19/03/04). The soil erosion risk is particularly high in the southern peninsula (USAID 01/04/2007). Many areas, particularly around Les Cayes, in Sud department, as well as on the northern coast of Nippes department, are vulnerable to flooding (Haiti ICT 2016).

### Soil erosion risk in Haiti



Source: USAID 2007

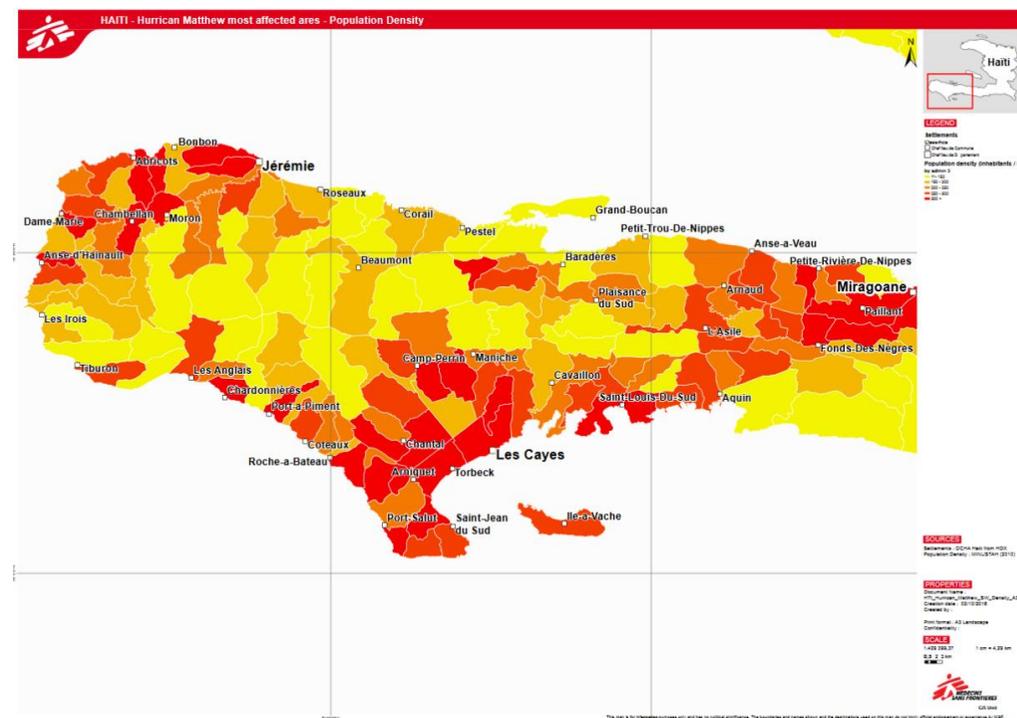
### Weather/altitude

As of 5 October, winds remained strong in northern Haiti. There were forecasts of rains in Nord-Ouest. On 7 October, an improvement is expected, even though brief and light rainfall may still occur (Government 05/10/2016).

### Population density

As of 2015, Haiti's overall population density is at 389/km<sup>2</sup>, up to seven times higher than world's average of 56.6 (WorldBank 2016). The greatest concentrations are located near coastal areas, which are more prone to higher damaged, loss of life and people in need. (CIA 28/09/2016). Hurricane-affected areas are largely rural, which can be more difficult to access than urban areas (DHS 2012). As of 2015, up to 58.6% of the population is urban, with an annual urbanisation rate of 3.78% (CIA 28/09/2016).

### Population density in the southern affected areas, October 2016



Source: MSF 2016

Key indicators	Sud	Sud-Est	Grande' Anse	Nippes	Ouest	Nord-Ouest
Total population	774,976 (2015 est.)	632,601 (2015 est.)	468,301 (2015 est.)	342,525 (2015 est.)	4,029,705 (2015 est.)	728,807 (2015 est.)
% population in rural areas	77.3% (2015 est.)	85.2% (2015 est.)	76.4% (2015 est.)	81.8% (2015 est.)	15.7% (2015 est.)	72.1% (2015 est.)
Density	292 (2015 est.)	311 (2015 est.)	245 (2015 est.)	270 (2015 est.)	809 (2015 est.)	347 (2015 est.)

Sources : Direction des Statistiques Démographiques et Sociales (DSDS), Institut Haïtien de Statistique et d'Informatique (IHSI), mars 2015

## Location and type of housing/infrastructure

The majority of rural and urban housing consist of two-room houses made of mud walls and floors. Roofs are often thatched with grasses or palm leaves but may also be made of plastic or corrugated metal. Houses are therefore extremely vulnerable to hurricanes (Encyclopaedia Britannica 09/2016).

## Proximity of critical infrastructure

Haiti has several hydroelectric and power plants. The most significant one, Barrage du Péligre in Artibonite department, is at risk of flooding. As of 4 October, 100m<sup>3</sup> of water instead of the usual 85m<sup>3</sup> were released in order to avoid flooding (Government 04/10/2016).

## Cholera outbreak

As of 26 September, 28,145 new suspected cholera cases have been reported in 2016, including 259 deaths. This is 27% more suspected cases than in the same period of 2015, and 34% more deaths (OCHA 30/09/2016). The situation is most critical in Ouest and Artibonite. Approximately 18 towns were on red alert and 10 on orange alert in August 2016 (OCHA 26/09/2016). Sporadic flooding in July resulted in a resurgence of cholera in several towns, including in Artibonite, Centre, Nippes, Nord, and Ouest (OCHA 31/07/2016).

790,000 cholera cases, including 9,243 deaths, have reported since the start of the epidemic in October 2010 (OCHA 26/09/2016, OCHA 30/06/2016). Since the beginning of the outbreak, the cholera fatality rate is highest in Sud-Est, Grande-Anse and Nippes (PDC 05/10/2016).

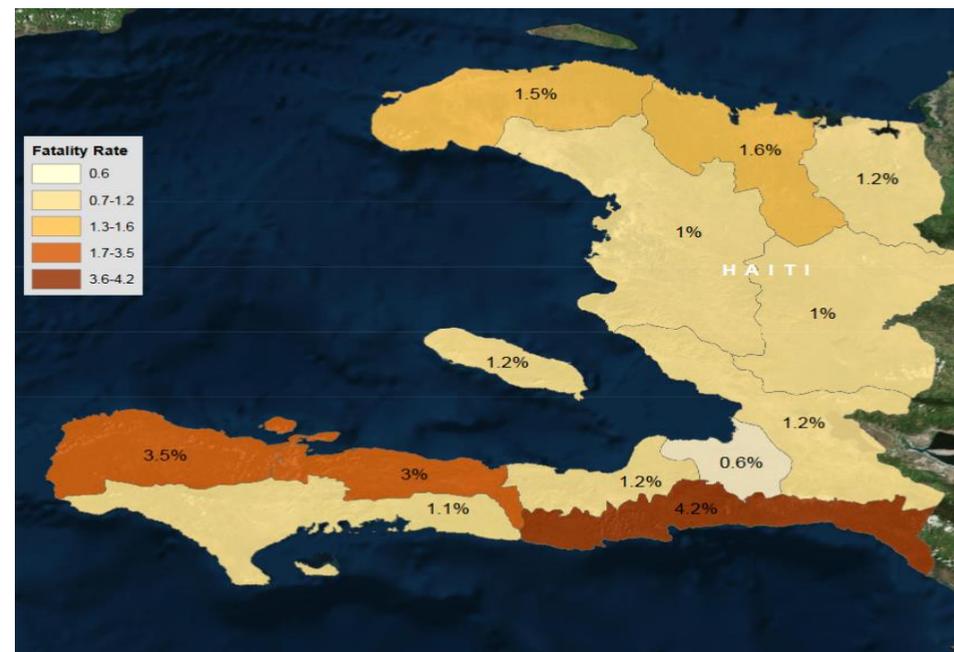
### Cholera cases in Haiti, 2010–2016

Year	Number of cholera cases	Deaths	Most affected departments
2016 (Jan-Aug)	28,145	255	Ouest, Artibonite
2015 (Jan-Dec)	36,045	322	Ouest, Artibonite
2014 (Jan-Dec)	27,753	296	Ouest, Artibonite, Nord and Centre
2013 (Jan-Dec)	58,809	593	Ouest, Artibonite, Nord and Centre
2012 (Jan-Dec)	112,076	894	Ouest
2011 (Jan-Dec)	340,311	2,869	Ouest, Artibonite, Nord, Centre, Nord - Est and Sud
2010 (Oct-Dec)	179,379	3,990	Ouest, Artibonite and Nord

Source: OCHA 2016, PAHO and WHO 2016

## Cholera fatality rate in Haiti, October 2010–August 2016

Source: Pacific Disaster Center 2016



**HIV:** Some 150,000 Haitians are HIV positive, and around 7,500 die every year from the disease. Testing and treatment is subsidised, but access is limited due to lack of information on available services (AFP 25/06/2016).

**Zika:** As of 4 July, Haiti has reported 3,000 suspected and five confirmed cases of Zika virus. The four departments with the highest number of cases are Ouest, Nord, Artibonite and Centre (AlterPresse 04/07/2016/UNICEF 01/04/2016/Government 25/08/2016).

**Mayaro virus:** The discovery in September of a Mayaro virus case, a mosquito-borne virus with symptoms similar to chikungunya, has drawn concern from health experts (Science Daily 15/09/2016).

## Economic situation

Haiti's economy has significantly suffered from the damage of the 2010 earthquake. In 2015, growth slowed due to political uncertainty, drought, and currency depreciation of the national currency. Inflation reached a high of 15.2% in April 2016 (Trading Economics 07/2016).

## Drought

In 2015, Haiti endured its third year of drought exacerbated by the El Niño phenomenon (WFP 06/2016). 80% of Haiti has been affected by El Niño conditions (local media 15/06/2015). The main 2015 harvest fell below average with losses of up to 70% in some areas (WFP 9/02/2016). From July to December 2015, agricultural production dropped by 50%. The most heavily hit areas were the Sud, the Nord-Ouest, Nord-Est, Artibonite and Sud-Est (OCHA 31/08/2015). However, cereal production was anticipated to recover strongly in 2016 due to above-average rainfall after El Niño. Excess humidity and flash floods from Hurricane Matthew may have impacted the crops and harvest (FAO 04/10/2016).

## Political stability

Long-delayed presidential and legislative elections were scheduled for Sunday 9 October, but have been cancelled due to the hurricane (AFP 06/10/2016; AFP 05/10/2016). It is unclear to what extent the hurricane has damaged preparations and how long elections will be delayed. Many candidates, including some main figures for the presidential elections, have officially stopped campaigning (Radio Television Caraïbes 03/10/2016). Candidates have called upon the Conseil Electoral Provisoire (CEP) to respect the 7 February 2017 deadline to inaugurate a new President (Haiti Libre 06/10/2016).

The political situation is tense: an initial round of elections in October 2015 was annulled due to allegations of fraud. Popular dissatisfaction with the electoral process could be aggravated by discontent with the hurricane response, impacting access and raising protection concerns. In 2010, the perceived lack of response by the Haitian government led to violence less than a week after the earthquake (Daily Mail 18/01/2010). Roads were blocked, with burning tyres prevented access on the road between Port-au-Prince and Carrefour, about 15km from Port-au-Prince (RFI 03/10/2016).

Since February, a transitional government has been in place, headed by Interim President Jocelerme Privert, although his term officially expired in June (AFP 13/02/2016). Many have questioned the legitimacy of the interim government and protested against election delays (AFP 05/06/2016; ICG 01/07/2016). A number of sporadic security incidents were reported in September (Metropole Haiti 26/09/2016). They have ranged from disruption of political events to armed attack against both candidates and supporters, some reportedly

involving gunfire (Metropole Haiti 26/09/2016) (Haiti libre 06/09/2016). Vehicles transporting presidential candidates were often attacked by rival party supporters (Telesur 30/09/2016). An armed attack against supporters of Presidential candidate Moïse Jean Charles has been reported in Miragoane, in the Nippes département, and in Cerca la Source, in the Centre département (Metropole Haiti 26/09/2016).

Haiti has a history of delayed elections and violence. The situation was at its worst in 2004–2005, when a weak transitional government ruled for over a year following the forced resignation of the President. Insecurity was widespread, with high rates of criminality and political violence.

Election-related violence has been reported since October 2015. Elements of the former military (the army was disbanded in 1995) have reportedly been involved in violence this year. Since the beginning of the electoral campaign, incidents against candidates have been reported throughout the country, including a reported attempted murder in Artibonite (AlterPresse 26/09/2016). Clashes and violent incidents were also reported before and after the announcement of the postponement of the second round of the October 2015 Presidential elections (Le Nouvelliste 25/01/2016; Liberation 22/01/2016).

## Response capacity

### Local and national response capacity

The National Emergency Operations Centre (COUN) has been activated, as well as departmental centres (COUD). The national ambulance centre is completely functional with 44 ambulances and 500 staff (ECHO 06/10/2016). Evacuations to temporary shelters are still ongoing in both southern and northern departments. Communal and local disaster management committees have been mobilised (Government 05/10/2016). A contingency plan for the 2016 hurricane season is in place, anticipating up to 500,000 people affected and 88,000 staying in temporary shelters (Government 20/07/2016).

### International response capacity

The government issued a Red Alert on 3 October and officially requested UN assistance (OCHA 4/10/2016). Two portable satellite receivers have been sent to restore communication in severely affected areas (The Guardian 5/10/2016).

Initial assessments took place on 6 October over the affected areas in Sud-Ouest, Nord-Ouest and Centre départements. UNDAC and OCHA will deploy two coordination hubs in Jérémie and Les Cayes (GDAC 6/10/2016).

In October, the UN Security Council is due to extend the UN Stabilization Mission in Haiti (MINUSTAH), which mandate expires on 15 October. A debate was scheduled to be held after the 9 October election (Security Council 01/10/2016). The MINUSTAH was set up on 1 June 2004 following the 2004 coup d'état. In 2014 and 2015, protests from the population and political parties were held during MINUSTAH renewals (AlterPresse 31/03/2014/AlterPresse 16/10/2015).

## Information gaps and needs

- Updated estimates for the number of people in need of assistance.
- Detailed information on the numbers of people affected and their needs in hard-to-reach areas.
- Consolidated information on the number of people that do not currently have shelter.
- Information on the needs of those staying in temporary shelters.
- Information on protection issues and security incidents.
- Updates on humanitarian access to affected areas.

## Lessons learned

- After the earthquake, humanitarian access was reportedly difficult in mountain areas, in Grande'Anse, Ouest, Sud-Est, Centre and Artibonite (Deseret News 25/05/2011).
- Shared information permits more rational use of limited logistics capabilities (ACF 19/03/2009).
- GPS use in early assessments is highly recommended (ACF 19/03/2009).
- High population density can be leveraged to facilitate distribution operations (water, food, NFI) (ACF 19/03/2009).
- Adaptability is important in post-earthquake reconstruction; best practices include holding beneficiary surveys and midterm reviews, as well as a large contingency budget.
- It is important to improve capacity building, coordination and advocacy when addressing post-disaster psychological issues, and to facilitate the participation of the affected people (IOM 2010).

- Closer cooperation with local actors, the UN, and security forces has facilitated rapid and efficient food distribution in the past (HPN 08/2010).
- Cash response has been successful following the 2010 earthquake and should be considered for this response.

## WASH

- Adding a veranda with rainwater catchment system to reconstructed homes was also found to be useful (IFRC 2012).
- Natural disasters can lead to disruption of usual water sources and contamination by damaged sewage infrastructure, resulting in unsafe drinking water being consumed (WHO 30/01/2010).
- Water trucking is very expensive and not sustainable. It may eventually be replaced by strategically located wells (ACF 19/03/2009).
- Logistic is a major challenge in WASH response, especially if access is blocked. Need to identify land access vulnerabilities and have a back-up plan to gain rapid access to the site in case of blocked roads (ACF 19/03/2009).

## Shelter

- Population displacement can result in overcrowding, raising the risk of transmission of communicable diseases that are spread from person to person through respiratory droplets, such as measles, diphtheria, pertussis (vaccine-preventable disease) and acute respiratory infections (WHO 30/01/2010).
- Avoid the creation of collective housing if possible; it can lead to conflicts between different camp committees, camp managers, service providers, and population as well as increase the risk of disease transmission and protection issues (IOM 04/2014).
- The Haitian government was officially in charge of the long-term re-establishment of the displaced population after the 2010 earthquake but the government response was heavily criticised (FAS 02/02/2010). As it was struggling to cope with the disaster, the Haitian government had to hand over some responsibilities to the United States and MINUSTAH, for example the control of the Port-au-Prince airport (Telegraph 17/01/2010). Tensions occurred between these three entities on their roles in the recovery, slowing the process (Le Figaro 26/01/2010). The lack of immediate results in the rebuilding also triggered tensions with the population; many protests against US presence and the MINUSTAH occurred after the earthquake (Reforme 08/01/2015).

## Key characteristics

Key indicators	Haiti
Total population	10,485,800 (July 2016 est.)
% population in rural areas	41.4% (2015 est.)
Gender and age distribution of population	0-14 years: 33.39% (0.99 male(s)/female) 15-24 years: 21.35% (1 male(s)/female) 25-54 years: 36.24% (0.99 male(s)/female) 55-64 years: 4.94% (0.91 male(s)/female) 65 years and over: 4.08% (0.81 male(s)/female) (2016 est.)
State capital	Port-au-Prince
Lighting and cooking sources	Access to electricity: 38% (2013 est.) Use of electricity for cooking: 0% Use of charcoal for cooking: 41.6% Use of wood for cooking: 51.8% Other cooking sources: 6.6%
WASH	Improved drinking water sources total: 57.7% of population (2015 est.) Improved sanitation facility: 27.6% of population (2015 est.) 72% of the population doesn't have access to sanitation
Health	Life expectancy at birth: 63.8 years (2016 est.) Maternal mortality rate: 359 deaths/100,000 live births (2015 est.) Infant mortality rate: 48.2 deaths/1,000 live births (2016 est.) Hospital bed density: 1.3 beds/1,000 population (2007)
Food security	Global Hunger Index: 37.3; alarming severity (2015 est.) Population food insecure: 3.2 million (September 2016 est.) Population severely food insecure: 1.5 million (February 2016 est.)
Nutrition	Prevalence of overweight in children under 5: 3.6% (2015 est.) Global acute malnutrition: 5.2% (2015 est.) Severe acute malnutrition: 1% (2012 est.) Stunting: 21.9% (2015 est.)
Literacy	60.7% (2015 est.)
Others	Population density is fairly even, with largest concentrations located near coastal areas

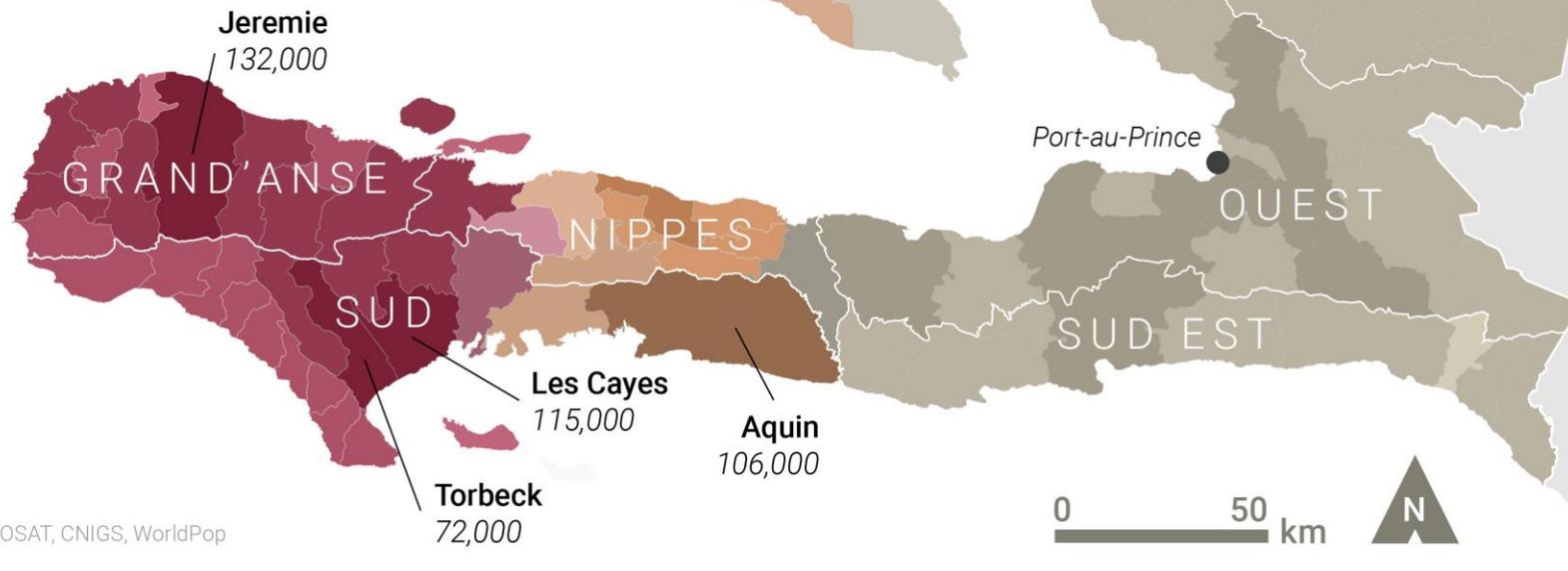
Sources: CIA World Factbook, Global Alliance for Clean Cookstoves, Global Hunger Index, Coordination Nationale de la Sécurité Alimentaire 2016, WFP Food Security Reports, Global Nutrition Report, 2015 Haiti Nutrition Country Profile, OCHA 31/03/2016

## Livelihood zones in Haiti





### Hurricane Matthew, Haiti, 6 October Population vs. windspeed intensity by commune



Sources: UNOSAT, CNIGS, WorldPop