



# Haiti, facing risks together

## Achievements in disaster risk management since 2010

Jan. 2010 - Jan. 2015









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# Haiti, a high-risk country



## National hazard context



**13** hurricanes and storms  
~ **11,000** deaths  
~ **5,000,000** people affected

**6** major floods  
~ **3,500** deaths  
~ **365,000** people affected

**1** major drought  
~ **2,300,000** people affected

**1** major earthquake  
~ **223,000** deaths  
~ **3,700,000** people affected



Photo : Flooded coastal town. Hurricane Sandy passed over the West of Haiti on 25 October 2012, causing heavy rainfall accompanied by violent winds. Some rivers overflowed and many houses were flooded.



**H**aiti is considered to be one of the countries in the world that is most vulnerable to disasters<sup>1</sup>.

Even before the devastating earthquake in 2010, Haiti's disaster risk index was one of the highest. This index is increasing, due to the consequences of climate change, environmental degradation and uncontrolled urban development. All disasters significantly weaken the country's resources, increase the vulnerability of the population and aggravate the impact of future crises.

Between 1963 and 2013, Haiti experienced 40 major disasters<sup>2</sup>, causing the death of nearly eight million people. Although the most frequent catastrophes are hydrometeorological, when earthquakes hit Haiti they can have devastating consequences<sup>3</sup>. The earthquake of 12 January 2010 is an obvious example.

During recent decades, Haiti's vulnerability has been exacerbated by the rapid increase in urbanisation<sup>4</sup>, the interaction between demographic pressure and mass migration to urban areas, environmental damage, poor watershed management and poverty. The vulnerability of urban areas has increased, following migration to these areas, Port-au-Prince in particular, which is estimated to be home to 25% of the country's total population<sup>5</sup>. Well before the earthquake, its population already exceeded the capacity of the existing urban infrastructure.

Given the high number of people who depend on agriculture and a concentration of population in low-lying coastal areas, hurricanes, landslides and droughts have significant consequences on farming and livestock, which represent the principal source of Haiti's revenue.

# Putting risk management at the heart of reconstruction



Following the 2010 earthquake, the Haitian government and its partners focused their efforts on the systematic inclusion of disaster risk management in the reconstruction work. The aim of the reconstruction strategy is to minimise building vulnerability and enable at-risk populations to adapt to the risks of natural disasters.

The first step was to assess the buildings damaged by the earthquake to evaluate safety levels. In 2010, over 430,000 buildings were assessed under the supervision of the Ministry of Public Works, Transport and Communication (MTPTC). The assessment was also an opportunity to make the owners and users of the buildings aware of the risks they were exposed to.

The government has developed a national construction code, which sets out the standards and measures to be followed in order to construct safe buildings. At the same time, guideline documents were given to the local population and construction professionals by the MTPTC. These include, for example, the Good Practice Guide on Reinforced Masonry Construction of Small Buildings, the Practical Guide on Repairing Small Buildings and lastly the Guide to Earthquake and Hurricane Resistant Reinforcements.

Over 80% of the earthquake debris, which littered the streets and gullies of Port au Prince, Léogâne and Jacmel, was cleared. This debris was an additional risk factor, and the fact that it was cleared quickly helped to reduce the vulnerability of the people living in the areas affected by the earthquake.

Secondly, significant efforts were made to include practical risk reduction measures in the rebuilding projects. For example, the government and its partners set up the 16 neighbourhoods /6 camps project, which led to the rebuilding of the 16 neighbourhoods affected



Photo : Reconstruction of the Parliament buildings, which were seriously damaged during the earthquake of 12 January 2010.

by the earthquake, eight of which now have a Risk Prevention Plan. This meant that over 11,000 displaced families were able to return to their original neighbourhoods, which had been rebuilt according to disaster risk reduction standards and recommendations.

Finally, the context of reconstruction was taken into account in the local and national contingency plans, which were specifically adapted to the new context, the needs of the displaced people and their exposure to risks during the hurricane season.

Despite the progress made, urban development and construction quality are still major challenges in reducing the vulnerability of city populations.

**Key figures:**

**1** national construction code drawn up.

Over **80%** national construction code drawn up.

**390,000** buildings assessed for earthquake damage.



Photo : One of the objectives of the collaboration between the Haitian government and the United Nations in the 16/6 project was to rebuild targeted earthquake affected neighbourhoods so that they could withstand further tremors, making it easier for the people who had been displaced by the earthquake of 12 January 2010 to return.



# Stronger coordination for better risk management



Coordination is crucial for good risk management. This is even more true in a country like Haiti, where many different bodies are involved in humanitarian and development work.

The importance of effective coordination by the government was also highlighted after the earthquake. Several actions were carried out to reinforce the capacities of the SNGRD (the National Risk and Disaster Management System) in this area.

The actions carried out included the creation of coordination groups between the Government and the NGOs, through the Risks and Disasters Management Forum (FGRD), and between the Government and international donor agencies, which led to much greater coherence between the actions carried out on the ground.

## Key figures:

**1** National Emergency Operations Centre and

**9** Departmental Centres.

**140** municipal civil protection committees.

**194** local civil protection committees.

In terms of emergency coordination, the SNGRD now has one National Emergency Operations Centre, nine Departmental Emergency Operation Centres and two newly built Municipal Emergency Operation Centres, ensuring optimum coordination of emergency operations in the future. To support the construction of these centres, targeted training has been given to the departmental authorities.

Secondly, an analysis of the SNGRD's disaster preparation and response capacities was carried out during 2013. This analysis helped to define a strategy for reinforcing the SNGRD's preparation and response capacities, whilst improving the complementary nature of all the organisations involved in this area.

In line with its technical commitment to reduce earthquake risk, the Haitian Government set up a scientific and technical earthquake and tsunami risk Coordination Committee, bringing together the representatives of various ministries, the scientific community and the private sector. The primary objective of this group is to formulate an action plan to reduce the earthquake and tsunami risk, and to promote scientific and technical research within universities and partner institutions.

These efforts have produced results at a technical level, and also at the highest levels of Government. The "Disaster Risk Thematic and Sector Table" was launched in 2014, creating a platform for dialogue between ministries, civil society, the private sector and the technical and financial partners, ensuring that risk and disaster management actions in development plans and programmes are consistent and





complementary. One of the key objectives of this round table is to revise the National Risks and Disasters Management Plan, which dates from 2001.

A key result of the government's commitment was its involvement in the international initiative "Political Champions for Disaster Resilience", thanks to the nomination of Haiti's Prime Minister as a member of the high-level group.



Photo 1 : Cap-Haïtien DRR Forum, North and North-East Representatives.

Photo 2 : As part of the preparation for the hurricane season, the Directorate for Civil Protection's National Emergency Operations Centre gets ready to respond to flood and landslide risks, to ensure an adequate response to the needs of the populations most exposed to these hazards.

# Identifying, understanding, assessing and monitoring disaster risks



The Haitian Government has taken on board the idea that in order to prepare and anticipate the harmful effects of disasters, it is essential to understand the risks, identify the hazards and accurately assess vulnerability.

With this in mind, the government and its partners have produced the first multi-hazard mapping of the country (NatHat<sup>7</sup>). This initiative has been used to feed multi-risk databases (earthquake risk, flood, landslide etc.) and to support the national institutions in monitoring and identifying risks. Currently, the National Centre of Geo-spatial information (CNIGS), the National Public Construction and Buildings Laboratory (LNBTP) and the Bureau of Mines and Energy (BME) produce

up-to-date, reliable geographical information for the whole national territory. LIDAR multi-risk mapping is currently being carried out, and the information it produces will strengthen our understanding of the risks faced by the whole national territory<sup>8</sup>.

In addition, seismic zoning is now available for the metropolitan area of Port-au-Prince and Cap-Haïtien, and also for Fort-Liberté, Port-de-Paix, Ouanaminthe and Saint Louis du Nord. The LNBTP has played a significant role in this activity and has acquired the necessary skills to direct the seismic zoning work. In terms of tsunami risk, assessments are underway in Cap-Haïtien and Port-de-Paix, using a participative approach based on digital modelling.

The tsunami risk will soon be assessed for the whole of the Grand Nord coastal region.

Despite these achievements, a national early warning system is still not in place over the whole territory. Tsunami warning procedures are being developed by the SNGRD and three tidal gauges have been installed (Cap-Haïtien, Jacmel and Port-au-Prince), connected to the regional warning system. Future plans are to establish rapid early warning mechanisms for the population and to reinforce evacuation capacity.

In addition, the hydrometeorological risk has been assessed and mapped in 31 at-risk municipal districts. This assessment, which includes the location of temporary shelters in these municipal districts, has enabled evacuation routes to be identified in the event of a flood, and evacuation maps to be produced.

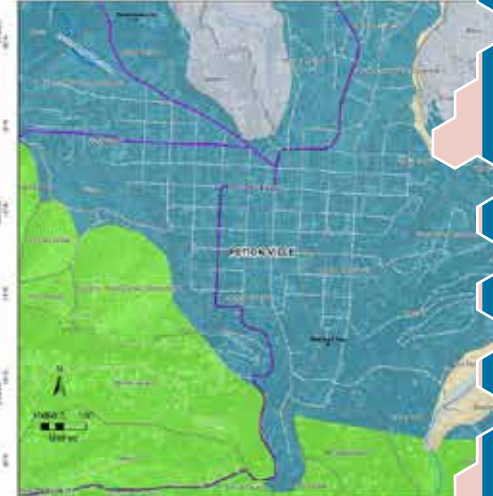
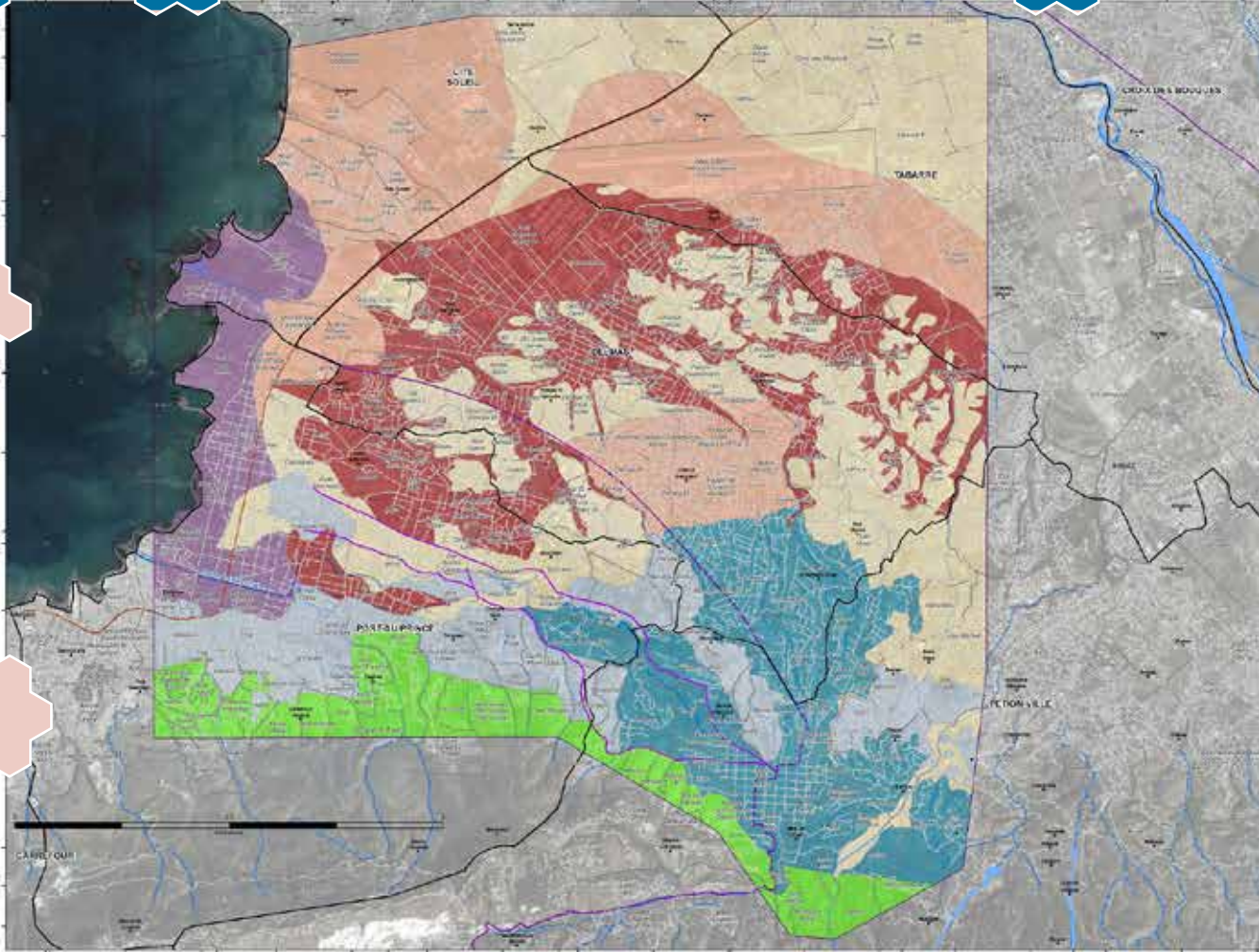
## Key figures:

**31** at-risk municipal districts provided with a hydrometeorological monitoring and warning system.

**5** major urban areas in the country have seismic zoning.

**20** radio stations in most of the regional/departmental branches set up by the Red Cross.





**MICROZONAGE SISMIQUE DE PORT-AU-PRINCE**  
**Pianche 2A : Classes de sols – Effets de site lithologiques**



In Port-au-Prince, the production of risk prevention plans has resulted in the development of a methodology that will be used to produce a standard national tool to assess and reduce risks in urban areas.

Photo : Allocation of 1.5 million USD to carry out seismic microzoning of the metropolitan area of Port-au-Prince and the four major towns in the North (Cap-Haïtien, Ouanaminthe, Port-de-Paix and Fort Liberté).



# Innovating and educating to create a resilient risk culture



The sector of education and specialist working groups – in particular the Public Education and Awareness Committee (CTESP) and the Committee for the Evacuation and Management of Temporary Shelters (CTEGAP) – have launched mass information and awareness campaigns, which are increasingly reaching a wider population, on the country's major hazards and the good practices to follow before, during and after a disaster.

In parallel, awareness campaigns targeted at local officials, vulnerable populations, the general public and media professionals have promoted and reinforced the response mechanisms already in place.

With regard to education and training, Haitian public and private institutions and universities have received support from foreign partners and universities to reinforce their Disaster Risk Management capacities and their hazard monitoring instruments.

These awareness initiatives are designed to create a “risk culture” that will enable individuals to become involved in the process of disaster prevention, preparation and response.

## Key figures:

**160** delegates and local officials trained in major hazards and disaster risk management methods.

**250,000** people educated by the Public Education and Awareness Committee (CTESP).

**300** journalistes formés aux mécanismes de sensibilisation à la gestion des risques de désastres.

**20,000** familles sensibilisées au montage d'un Plan d'urgence familial.







Photos : “Civil Protection Fridays” is an initiative directly targeted at the community and members of grassroots organisations. It brings together volunteers from Civil Protection, the Red Cross, Haiti’s Scouts and firefighters to teach participants new disaster prevention techniques.

# Reduce Disaster Risk



A large number of projects, such as canal dredging, stabilising river banks and treating gullies, have been introduced to prevent and reduce the effects of disasters in the most at-risk areas of the country.

With regard to earthquake risk, in 2013 the Haitian Government developed an earthquake roadmap which sets out the strategy to follow in order to reduce the loss of human life and material damage in the event of an earthquake. This strategy is already being applied on the ground, particularly in Haiti's three Grand Nord departments where an earthquake vulnerability study of the four largest towns in the area is underway. This study includes structural assessment of strategic buildings, some of which have received earthquake resistant reinforcements.

A Technical Seismology Unit (UTS) has been set up within the Bureau of Mines and Energy (BME) to monitor, locate and identify any earthquakes in the territory and to produce information bulletins for the authorities and the Directorate for Civil Protection, the media and the population.

In line with the hydrometeorological risk reduction strategy and to offset the harmful effects of climate change, the government and its partners have focused their efforts on watershed management and the construction and rebuilding of structures to reinforce slopes and riverbanks and reduce floods in towns on coastal plains. The government is also involved in rebuilding the irrigation and drinking water systems that have been damaged by past disasters.





Photo : Gabion walls prevent rivers from overflowing and stop flooding during bad weather and high waters.

# Preparing communities to cope with disaster risks



The Haitian Government and its partners have focused their efforts on strengthening disaster preparation capacities, enabling the SNGRD to respond effectively to emergencies, in particular Hurricane Tomas in 2010 and Hurricane Sandy in 2012.

The reinforcement of the Directorate for Civil Protection (DPC), the National Directorate for Water Supply and Sanitation (DINEPA) and the Haiti Red Cross (CRH) has enabled these flagship organisations to resume their key role of preparing and responding to emergencies, to better meet the needs of the most at-risk populations and reduce their vulnerability to natural disasters.

## Key figures:

**14** simulation exercises (SIMEX) carried out at national, departmental and municipal level.

**3,000** specialist first aid officers over the whole territory

**400** voluntary firefighters.

Due to the large number of people working in this field, multi-sector workshops are organised every year, with the aim of strengthening coordination and technical capacities, and improving emergency response.

Contingency plans are updated annually and an earthquake contingency plan for the three Grand Nord departments is currently being produced. In total, the government has finalised and annually updated the national contingency plan, 10 departmental contingency plans and 50 municipal contingency plans. Therefore a total of 61 contingency plans have been produced, in consultation with international agencies. Simulation exercises have also been carried out, in order to test real-time response and make corrective measures to the protocols, operational guides and other coordination systems.

In 2013, the Guide on managing evacuation shelters was approved by the SPGRD for evacuations from the metropolitan area of Port-au-Prince, including the preventive evacuation of the most vulnerable people. A platform of shelter managers was put in place, with training for 115 shelter managers on the tools and practices involved in evacuation. In 2014, the country had 1,332 temporary shelters, designed to accommodate an average of 339,000 people in the event of a disaster.

In terms of relocating displaced people, risk reduction work was carried out on over 50 at-risk camps by the people themselves, and monitoring committees were set up. Rapid response mechanisms were reinforced, to ensure an effective response in the camps.





At the same time, emergency stocks were placed in all the geographical departments and over 3,000 volunteers were trained in first aid, rescue and rubble clearance. These volunteers are now present in every municipal district in the country.



Photo : As part of the reinforcement of the National System for Disaster Risk Management, the Directorate for Civil Protection and international organisations organised a simulation exercise in a school in Port-au-Prince, to test the school's evacuation mechanisms.



## Références

- <sup>1</sup> UNISDR (2013), UNISDR (2013) From Shared Risk to Shared Value –The Business Case for Disaster Risk Reduction. Global Assessment Report on Disaster Risk Reduction. Geneva, Switzerland: United Nations Office for Disaster Risk Reduction (UNISDR).
- <sup>2</sup> This brochure defines as “large-scale” a disaster that affected at least 10,000 people. Data from EM-DAT, OFDA/CRED International Disaster Database – [www.emdat.be](http://www.emdat.be) – Catholic University of Louvain, Brussels, Belgium.
- <sup>3</sup> Over 220,000 people were killed and 300,000 injured, and nearly 3,700,000 people were affected by the earthquake of 12 January 2010. The number of deaths caused by this earthquake was ten times higher than the total of all the victims of all the disasters since 1963.
- <sup>4</sup> Index Mundi – estimation 2010-2015.
- <sup>5</sup> Analysis of national preparation and response capacities 2013
- <sup>6</sup> The NGO Forum for disaster risk management promotes the exchange of information and communication between its members and provides standardised tools for partners.
- <sup>7</sup> *Analysis of Multiple Natural hazards in Haiti* available at [http://reliefweb.int/sites/reliefweb.int/files/resources/49488655AFEE6C258525773000766AF5-Full\\_Report.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/49488655AFEE6C258525773000766AF5-Full_Report.pdf).
- <sup>8</sup> Allocation of 2.1 million dollars via the Risks and Disasters Management Reinforcement Project.

## Crédits photos

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