



HAÏTI

International Symposium on Sustainable Reconstruction from
Super Earthquake Disasters at JAPAN

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HAÏTI

LOCATION



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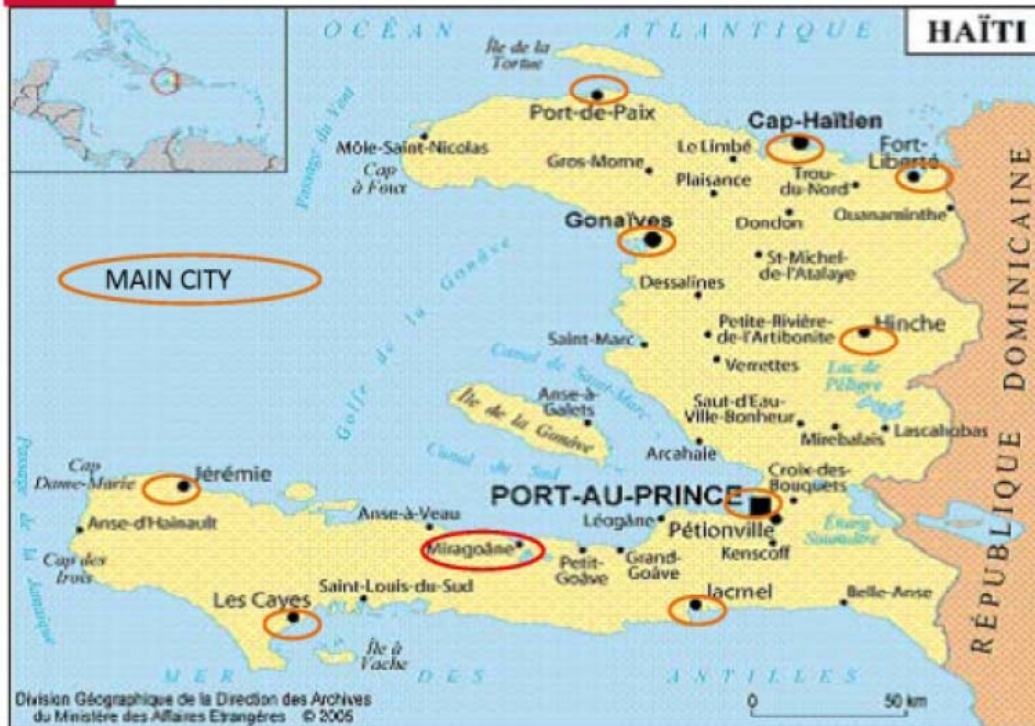
HAITI AT A GLANCE

CAPITAL	Port-au-Prince
SURFACE AREA	27 750 km ²
CLIMATE	CITIES: 25° < T < 30° MOUNTAINS: 15° < T < 20°
POPULATION	10 000 000 (363/km ²)
LANGUAGES	CREOLE - FRENCH
RELIGION	- CATHOLICISM - VODOU - PROTESTANTISM

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AMINISTRATIVE DIVISION



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HISTORICAL OVERVIEW

- ❖ NATIVES PEOPLE < 1492
- ❖ 1492 → ARRIVAL OF THE SPANISH
- ❖ 50 YEARS LATER → The natives disappeared
- ❖ 1697 → FRENCH ARRIVAL
- ❖ 1791 → SLAVES REVOLT
- ❖ 14 YEARS LATER → FREEDOM AFTER A BLOODY WAR.

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MAIN INDUSTRY

❑ THE TOURISME

- ❖ GOOD CLIMATE
- ❖ BEAUTIFUL BEACHES
- ❖ BEAUTIFUL PLANTS
- ❖ MANY CULTURES

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BEACH (AT JACMEL)



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BEACH (AT PETIT GOAVE)



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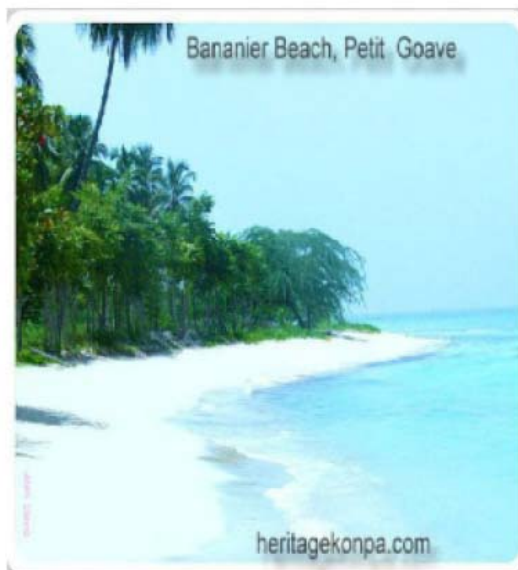
BEAUTIFUL PLANT (AT PORT-SALUT)



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BEACH



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HAÏTI AND EARTHQUAKE DISASTER

21/ 11/ 1751	Port –au-Prince WAS DESTROYED
19 YEARS LATER	
3 / 06/ 1770	Port –au-Prince AND TWO OTHERS CITIES DESTROYED
117 YEARS LATER	
23 /09/ 1887	THE NORDWEST WAS SEVERLY AFFECTED
55 YEARS LATER	
7/ 06/ 1942	THE NORTH OF HAITI WAS SEVERLY AFFECTED
29 YEARS LATER	
21 /08 /1971	ALL THE COUNTRY WAS SHAKEN

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12 JANUARY 2010 EVENT

DATE AND TIME	16:50 on Tuesday
MAGNITUDE	7.0
INTENSITY(MMI)	VIII
AFTERSHOCKS	52 (4.2 < M < 5.9)
CASUALITY	230 000
INJURING	300 000

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12 JANUARY 2010 EVENT

HOMELESS	1.3 MILLION
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DESIGN DEFECTS

INADEQUATE COLUMN SIZE



FLEXURAL FAILLURE

SHORT COLUMN



SHEAR FAILLURE

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MAIN DAMAGE CAUSE

- LACK OF SIGNIFICANT SEISMIC ACTIVITY
- LACK OF SEISMIC ENGINEERING CODE
- LACK OF A PROPER QUALITYY CONTROL
- HIGH DENSITY OF POPULATION AROUND THE CAPITAL

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DESIGN DEFECTS

CAPTIVE COLUMN



SHEAR



FAILLURE

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CONSTRUCTION DEFECTS

Poor construction joint



WALL CRACKING



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MAIN DAMAGE CAUSE

Soil liquefaction



High occupation density



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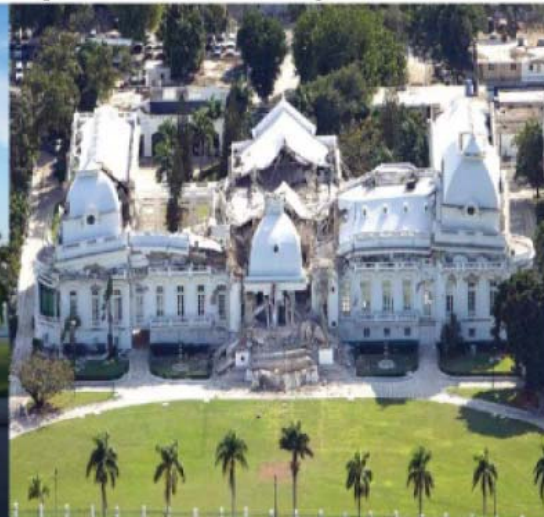
12 JANUARY 2010 EVENT

National palace



< 12 January >

National palace



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ECONOMIC LOSS

TOTAL	\$US 8 BILLIONS
Infrastructure, including housing	57.2 %
Social	19.4%
Production sectors	17%
Education/culture	6.1%
Health	6%
Environment	6.4%
Water/Sanitation	3%
Food safety/nutrition	4.2%

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EMERGENCY RESPONSE

- ☐ **Rescue of people trapped under debris** started by local community helped after by the foreign staff.
- ☐ **Promote the rescue movement** : cleaning the main streets headed by the government.
- ☐ **Medical care** started by Local community and Private sector, headed after by Government and International Community.

Local Community, Private sector, Government	25%
International Community	75%

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EMERGENCY RESPONSE

- ☐ **Evacuation shelter:** this issue was very difficult for all sectors. Some people built their shelter with what they could find.
- ☐ **Food** was distributed by the humanitarian agencies
- ☐ **Water** was distributed by the Government (DINEPA fortunately not affected)
- ☐ **Information and Communication:** *Private medias* shared the government decisions in response to the event. *International medias* stimulated immediate action by the international community.

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RECOVERY

- ☐ MENFP started with the scholar activities three months later
- ☐ MTPTC dredged rivers and drainage canals to cope the cyclonic season and protect the people in the campsites.
- ☐ MTPTC created BETEB a dedicated agency charged to assess damage to all buildings in earthquake-affected areas, develop criteria for repair and reconstruction, provide reconstruction quality control with the procedure follows:

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RECOVERY

DAMAGE ASSESSEMENT METHODOLOGY:

➤ *Evaluation methodology ATC-20 adapted to Haitian practices:*

- Examine the exterior of the building
- Check the movement of soil
- Back to the interior if possible
- Discuss the comments
- Signpost the building:

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RECOVERY

Signpost the building:

- The healthy building received a green label(the building is structurally undamaged)
- One that deserved some-unfriendly, receives a yellow label (restricted entry)
- One that presented serious plastic damage and can collapse at any time received a red . (unsafe, not can be used)
- Explained the phenomenon to the occupants and tell them how to behave.

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EMERGENCY RESPONSE



Map of Port-au-Prince area showing green-, yellow-, red-tagged building.

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EMERGENCY RESPONSE

SECOND STEP : *Detailed engineering assessments*

- This step aimed to assess the yellow houses once again
- Every damage is measured and classified.
- The house received a label blue.



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RECONSTRUCTION PRINCIPLES

- Leadership and mutual accountability
- Decentralization and equal growth
- Commitment to modernization
- Haitian- led
- Independence from international aid.

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RECONSTRUCTION KEY ISSUES

- How to protect Haiti against natural disaster?
- How to improve the quality of live in Haiti?
- What we want to become?

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STRATEGIES/APPROACHES

- INCLUDING ENVIRONMENTAL ASPECTS IN ALL DECISIONS
- INTEGRATING RISK DISASTER MANAGEMENT IN ALL SECTORS AND IN ALL RECONSTRUCTION ACTIVITIES
- UNDERTAKING THE DECENTRALIZATION OF THE BASIC SERVICE
- ESTABLISHING AN ACTIVE POLICY SUPPORTING MICRO-ENTREPRISES
- INITIATING SOCIAL SAFETY FOR THE POOREST

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HAITI RECONSTRUCTION FUND

- INTERNATIONAL COMMUNITY
- NGOs
- GOVERNMENT
- PRIVATE SECTOR

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LESSONS LEARNED

- WE SHOULD ALWAYS IMAGINE AND DEVELOP STRATEGIES AGAINST NATURAL DISASTERS.
- IN DISASTER MANAGEMENT POLICY LOCAL COMMUNITY IS VERY IMPORTANT.
- UNREINFORCED MASONRY WALL AND NONDUCTILTE CONCRETE CONSTRUCTION ARE VERY VULNERABLE TO EARTQUAKE DAMAGE.
- DECENTRALIZATION IS VERY IMPORTANT FOR THE DEVELOPING COUNTRIES.

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COCLUSION

- NATURAL HAZARDS ARE ALWAYS SOMEHERE ALL OVER THE WORLD. WE CAN NOT FORGET THEM.
- I THINK THAT THIS KIND OF MEETING , THIS SYMPOSIUM CAN HELP THE COUNTRIES NOT TO FORGET NATURAL HAZARDS AND NATURAL DISASTER.

THANK YOU

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