HAÏTI

International Symposium on Sustainable Reconstruction from Super Earthquake Disasters at JAPAN

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HAÏTI

HAÏTI AT A GLANCE

<table>
<thead>
<tr>
<th>CAPITAL</th>
<th>Port-au-Prince</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURFACE AREA</td>
<td>27,750 km²</td>
</tr>
<tr>
<td>CLIMATE</td>
<td>CITIES: 25° &lt; T &lt; 30°</td>
</tr>
<tr>
<td></td>
<td>MOUNTAINS: 15° &lt; T &lt; 20°</td>
</tr>
<tr>
<td>POPULATION</td>
<td>10,000,000 (363/km²)</td>
</tr>
<tr>
<td>LANGUAGES</td>
<td>CREOLE - FRENCH</td>
</tr>
<tr>
<td>RELIGION</td>
<td>- CATHOLICISM</td>
</tr>
<tr>
<td></td>
<td>- VODOU</td>
</tr>
<tr>
<td></td>
<td>- PROTESTANTISM</td>
</tr>
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AMINISTRATIVE DIVISION

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.
MAIN INDUSTRY

- THE TOURISME
  - GOOD CLIMATE
  - BEAUTIFUL BEACHES
  - BEAUTIFUL PLANTS
  - MANY CULTURES

BEACH (AT JACMEL)
BEACH (AT PETIT GOAVE)

BEAUTIFUL PLANT  (AT PORT-SALUT)
BEACH

HAÏTI AND EARTHQUAKE DISASTER

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21/11/1751</td>
<td>Port-au-Prince was destroyed</td>
</tr>
<tr>
<td>3/06/1770</td>
<td>Port-au-Prince and two others cities destroyed</td>
</tr>
<tr>
<td>23/09/1887</td>
<td>The northwest was severely affected</td>
</tr>
<tr>
<td>7/06/1942</td>
<td>The north of Haiti was severely affected</td>
</tr>
<tr>
<td>21/08/1971</td>
<td>All the country was shaken</td>
</tr>
</tbody>
</table>
12 JANUARY 2010 EVENT

<table>
<thead>
<tr>
<th>DATE AND TIME</th>
<th>16:50 on Tuesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAGNITUDE</td>
<td>7.0</td>
</tr>
<tr>
<td>INTENSITY (MMI)</td>
<td>VIII</td>
</tr>
<tr>
<td>AFTERSHOCKS</td>
<td>52 (4.2 &lt; M &lt; 5.9)</td>
</tr>
<tr>
<td>CASUALITY</td>
<td>230,000</td>
</tr>
<tr>
<td>INJURING</td>
<td>300,000</td>
</tr>
</tbody>
</table>

12 JANUARY 2010 EVENT

HOMELESS | 1.3 MILLION

[Image of a campsite with makeshift shelters and tents]
DESIGN DEFECTS

INADEQUATE COLUMN SIZE

FLEXURAL FAILURE

SHORT COLUMN

SHEAR FAILURE

MAIN DAMAGE CAUSE

➢ LACK OF SIGNIFICANT SEISMIC ACTIVITY

➢ LACK OF SEISMIC ENGINEERING CODE

➢ LACK OF A PROPER QUALITY CONTROL

➢ HIGH DENSITY OF POPULATION AROUND THE CAPITAL
DESIGN DEFECTS

CAPTIVE COLUMN

SHEAR FAILURE

CONSTRUCTION DEFECTS

Poor construction joint WALL CRAKING
MAIN DAMAGE CAUSE

Soil liquefaction  High occupation density

12 JANUARY 2010 EVENT

National palace  < 12 January >  National palace
ECONOMIC LOSS

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>$US</th>
<th>8 BILLIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure, including housing</td>
<td>57.2%</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>19.4%</td>
<td></td>
</tr>
<tr>
<td>Production sectors</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Education/culture</td>
<td>6.1%</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>6.4%</td>
<td></td>
</tr>
<tr>
<td>Water/Sanitation</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Food safety/nutrition</td>
<td>4.2%</td>
<td></td>
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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.

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Local Community,</td>
<td>25%</td>
</tr>
<tr>
<td>Private sector,</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td></td>
</tr>
<tr>
<td>International Community</td>
<td>75%</td>
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</tbody>
</table>
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:
RECOVERY

DAMAGE ASSESSMENT 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:

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.
EMERGENCY RESPONSE

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

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.
Reconstruction Principles

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

Reconstruction Key Issues

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

HAITI RECONSTRUCTION FUND

➢ INTERNATIONAL COMMUNITY

➢ NGOs

➢ GOVERNMENT

➢ PRIVATE SECTOR
LE Sal Tags LEAS=

➢ WE SHOULD ALWAYS IMAGINE AND DEVELOP STRATEGIES AGAINST NATURAL DISASTERS.

➢ IN DISASTER MANAGEMENT POLICY LOCAL COMMUNITY IS VERY IMPORTANT.

➢ UNREINFORCED MASONERY WALL AND NONDUCTILE CONCRETE CONSTRUCTION ARE VERY VULNERABLE TO EARTHQUAKE DAMAGE.

➢ DECENTRALIZATION IS VERY IMPORTANT FOR THE DEVELOPING COUNTRIES.

COCLUSION

➢ NATURAL HAZARDS ARE ALWAYS SOMEWHERE 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