

**Haiti:**

**Executive Summary of the PDNA after the Earthquake**

**Sector Evaluation of Damage, Losses and Needs**

**The Disaster and its Impacts**

Prepared by the Government of the Republic of Haiti, with the support of the international community

On January 12, 2010, shortly before 5pm, a Richter scale 7.3 earthquake, lasting 35 seconds, struck Haiti. This was the most powerful earthquake to strike the country for 200 years. The hypocenter of the earthquake was close to the surface of the earth (10 km deep) and its epicenter was close to the city of Léogâne, 17 km South West of the capital city, Port-au-Prince, in the Ouest Department. The effects were felt in the Ouest, Sud-Est and Nippes Departments. The area of Port-au-Prince (including the *communes* of Port-au-Prince, Carrefour, Pétionville, Delmas, Tabarre, Cité Soleil and Kenscoff) were massively damaged. 80% of the city of Léogâne was destroyed.

The earthquake has created an unprecedented situation, exacerbated by the fact that it has affected the most populated area of the country and its administrative and economic center. The situation is all the more tragic because, over the last three years, the country was experiencing a stabilization of the socio-political and security situations, economic growth and the beginnings of an improvement in people's living conditions.

***The Human Impact***

The human impact is huge. About 1.5 million people, or 15% of the national population, have been directly affected. More than 220,000 people have lost their lives and more than 300,000 have been injured. About 1.3 million people are living in temporary shelters in the area of Port-au-Prince. More than 500,000 people have left the devastated area to find shelter in the rest of the country, resulting in an exacerbation of already existing problems in access to food and basic services. In striking at the heart of the Haitian economy and administration, the earthquake has acutely affected human and institutional capabilities in the public and private sectors, including NGOs and international technical and financial partners.

***The Impact on Infrastructure***

The destruction of infrastructure is massive. About 105,000 homes have been completely destroyed and more than 208,000 houses damaged. More than 1,300 educational institutions and more than 50 hospitals and health centers have collapsed or are unusable. The country's principal port is partially out of action. The Presidential Palace, the Parliament, the Courthouse and the majority of Ministerial and Government buildings have been lost.

***The Impact on the Environment***

Environmental indicators were already in the red, and the earthquake has increased pressure on the environment and natural resources, making the Haitian population extremely vulnerable.

## Damage, Losses and Needs

To prepare an estimate of the damage, losses, and needs, for about a month, more than two hundred national and international experts have worked in eight thematic teams: governance, production, social sectors, infrastructure, territorial development, environment and disaster risk management, cross-cutting themes, and macro-economic analysis.

### Box 1: Assessment of Damage, Losses and Needs

#### Damage, losses, economic impact, and needs were assessed as follows:

- **Damage** were estimated as the cost of replacing partly or totally destroyed physical assets, built to the same standards as those prevailing before the disaster;
- **Losses** were estimated based on economic flows resulting from the temporary lack of damaged assets;
- **Based on the damage and losses, the impact of the disaster on** economic performance, employment and poverty was assessed;
- **Needs** took into account the rehabilitation, reconstruction, and transformation of the Haitian State.

The total value of damage and losses caused by the January 12 earthquake is estimated at US \$7,863 million<sup>1</sup>, which is the equivalent of about more than 120% of the 2009 gross domestic product (GDP). In fact, in the 35 years that the Damage and Losses Assessment (DaLA) methodology has been applied, this is the first time that the cost of a disaster is so high relative to the size of a country's economy.

Most damage and losses have been experienced by the private sector (\$5,491 million or 70%), while the public sector part is \$2,374 million (or 30% of the total).

The value of destroyed physical assets – including, inter alia, housing units, schools, hospitals, buildings, roads and bridges, ports and airports – has been estimated at \$4,302 million (55% of the total effects of the disaster). The variation in economic flows (loss of production, reduction in turnover, loss of employment and salaries, increased costs of production, etc.) has reached \$3,561 million (the equivalent of 45% of the total).

Housing is undoubtedly the sector most affected by the earthquake, given that the total damage is \$2.3 billion. This figure includes the value of the destruction of housing units of various kinds and quality, the value of partially damaged houses and domestic property. In addition, housing losses are estimated at \$739 million and involve the cost of providing temporary shelters, the cost of demolition and the value of rental income. The housing sector therefore represents roughly 40% of the earthquake's impact. The other sectors, in decreasing order of magnitude in terms of the impact sustained, are trade (damage and losses of \$639

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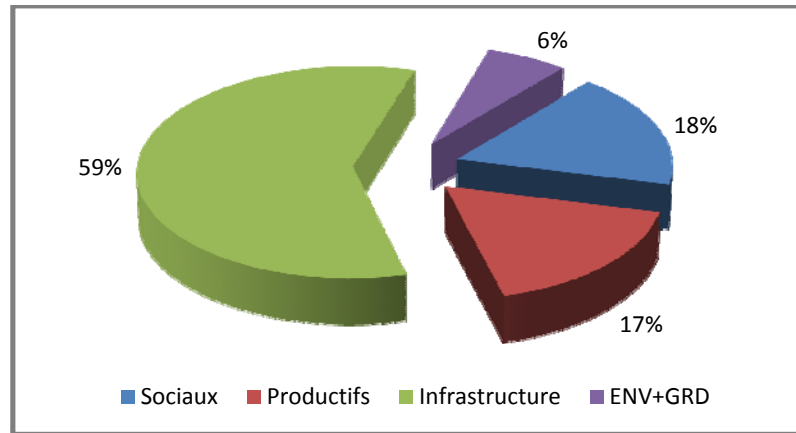
<sup>1</sup> The amount shown as the total value of damage and losses is different from the arithmetical total of evaluations by sector because, during the process, efforts were made to eliminate double accounting between sectors and always use a standard conversion factor of 42.00 between the national currency of the Gourde and the US\$.

million, or 8% of the total), transport and government buildings (\$595 million each) and education and health (with an average of 6% of the total).

**Table 2: Summary of Damage and Losses (US\$ million) <sup>2</sup>**

Themes/ Subthemes	Damage US\$ (million)			Losses US\$ (million)		
	Public	Private	Total	Public	Private	Total
<b>Environment &amp; Disaster Risk Management</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>321.4</b>	<b>175</b>	<b>496,4</b>
<b>Social Sectors</b>	<b>153,8</b>	<b>522,4</b>	<b>676,4</b>	<b>197,8</b>	<b>500,6</b>	<b>698,3</b>
Water and Sanitation	20,9	13,1	34	8,4	193,0	201,4
Health	94,7	101,7	196,4	187,7	86,1	273,7
Education	38,2	395,6	434	1,7	41,5	43,2
Food Security	0	12	12	0	180	180
<b>Infrastructure</b>	<b>621.9</b>	<b>2538.6</b>	<b>3160,5</b>	<b>868.7</b>	<b>520.6</b>	<b>1389,3</b>
Housing	0	2333,2	2333,2	459,4	279,3	738,7
Transport	188.5	118,6	307,1	91,6	197.5	289,1
Telecommunication	66	28	94	24	22	46
Energy	14.6	0	14,6	131,7	0	131,7
Urban and Administrative Infrastructure	352.8	58.8	411,6	162	21,8	183,8
<b>Production Sectors</b>	<b>3,1</b>	<b>394,0</b>	<b>397.1</b>	<b>0</b>	<b>933,3</b>	<b>933,3</b>
Agriculture	3,1	49,9	53	0	96,0	96
Industry	0	74,6	74,6	0	267,7	267,7
Trade	0	148,7	148,7	0	490,6	490,6
Finance et Banking	0	98,2	98,2	0	0.0	0
Tourism	0	22,6	22,6	0	79,0	79
<b>Total</b>	<b>781,8</b>	<b>3455,0</b>	<b>4237,0</b>	<b>1387,9</b>	<b>2129,4</b>	<b>3517,3</b>

<sup>2</sup> Last update : March 8 2010

**Figure 2: Damage and Losses by main themes**

ENV : Environment  
GRD : Disaster Risk Management

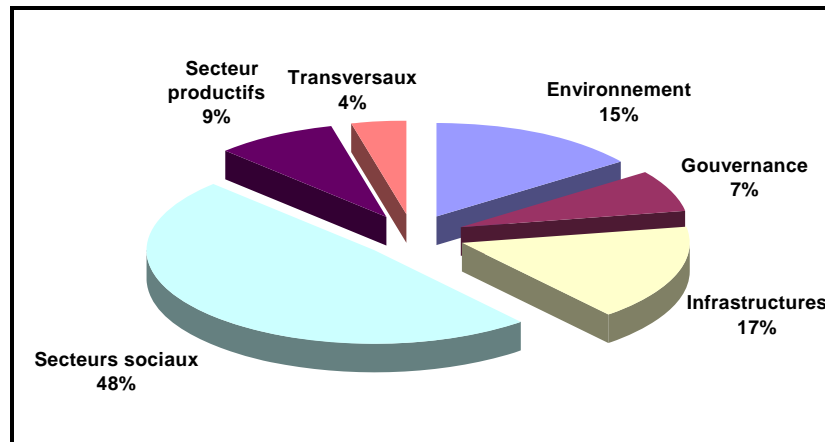
***Recovery and Reconstruction Needs based on the results of PDNA Working Groups***

The total value of needs is US\$11.5 billion and is distributed as to half in social sectors, 17% in infrastructure, including housing, and 15% in the environment and risk and disaster management. The estimate of needs is made as described above, based on a consolidation of the eight thematic teams' work. (These estimates have not yet been cleared, nor prioritized or ratified by government. This only represents the first step in a much more detailed work in preparation of the donor conference scheduled in New York on March 31, 2010.)

Table 3: Summary of Needs (US\$ million)

<b>Theme/ Subtheme</b>	<b>6 months</b>	<b>18 months</b>	<b>3 years</b>	<b>Total</b>
	Avril 2010- Sept 2010	Oct. 2010- Sept. 2011	Oct. 2011- March 2012	
<b>Governance</b>	<b>155,0</b>	<b>206,8</b>	<b>444,9</b>	<b>806,7</b>
Justice	40,0	100,0	210,0	350,0
Democratic Process	40,0	6,8	28,3	75,1
Administrative Governance and Public Services	75,0	100,0	206,6	381,6
<b>Environment &amp; Disaster Risk Management</b>	<b>138,6</b>	<b>257,3</b>	<b>1 343,3</b>	<b>1 739,2</b>
Pollution	87,8	175,6	571,3	<b>834,7</b>
Disaster Risk Management	24,7	29,3	379,5	<b>433,5</b>
Environmental Governance	6,0	12,0	12,5	<b>30,5</b>
Land and Natural Resources Management	20,2	40,3	380,0	440,5
<b>Social Sectors</b>	<b>847,3</b>	<b>1 099,5</b>	<b>3 624,2</b>	<b>5 571,0</b>
Health	270,2	92,0	184,1	546,3
Education	449,3	465,4	1 685,1	2 599,8
Nutrition	21,0	320,1	719,6	1 060,7
Water and Sanitation	95,4	199,2	776,9	1 071,5
Sports	11,4	22,8	258,5	292,7
<b>Infrastructure</b>	<b>125,2</b>	<b>452,4</b>	<b>1 344,0</b>	<b>1 921,6</b>
Housing	5,2	149,8	505,0	660,0
Urban and Administrative Infrastructure	1,0	103,0	145,5	249,5
Transport	29,7	118,8	448,0	596,5
Energy	83,3	71,8	192,2	347,3
Telecommunication	6,0	9,0	53,3	68,3
<b>Production Sectors</b>	<b>174,6</b>	<b>271,0</b>	<b>541,9</b>	<b>987,5</b>
Agriculture et Fisheries	168,5	183,9	367,8	720,2
Tourism		11,2	22,5	33,7
Trade and Industry	6,1	75,8	151,7	233,6
<b>Cross-cutting</b>	<b>44,9</b>	<b>124,5</b>	<b>292,1</b>	<b>461,4</b>
Youth	42,0	116,0	275,1	433,1
Gender	2,8	8,4	16,9	28,1
Employment	14,9	2,6	6,6	23,1
Vulnerable Groups and Social Protection	0,0	0,0	0,0	0,0
Management of Information	0,1	0,0	0,1	0,2
Culture	0,0	0,0	0,0	0,0
<b>Total</b>	<b>1 485,7</b>	<b>2 411,4</b>	<b>7 590,3</b>	<b>11 487,4</b>

Figure 3: Suggested Needs by theme (up to 3 years)



## Main Messages

- **Prepare** the hurricane and rainy season 2010 (identify risk areas, secure the affected populations, strengthen the early warning and evacuation systems, rebuild sectors and SNGRD territorial network operational capacities).
- Systematically **include environmental aspects** in all decisions related to the recovery and development process.
- **Include disaster risk and disaster management** measures in the reconstruction process for all sectors (building code, insurance, consolidation and maintenance budget, contingency plans and continuity of operations).
- To establish **an active labor policy** by supporting micro-enterprise, strengthening technical and vocational training, incorporating the principles for labor intensive works and associating Haitian entrepreneurship, local workforce, as well as local communities.
- **To rebuild the State and the economy** for all Haitians.
- **Relieve congestion from Port-au-Prince metropolitan area** by creating incentives for the settling of the population around *poles de croissance*.

## Sector Key Messages

### Governance

Despite a significant improvement of the socio-political stability and security, Haiti continues to experience major difficulties regarding the operation of State services. The impact of the earthquake resulted in a deterioration of security, particularly for population living in camps. The situation is even more precarious for women and children.

Governance in Haiti should be rethought in order to regain public confidence and ensure that the public good outweighs individual interests.

In light of these challenges, the PDNA suggests the following key messages:

#### *Justice and public safety:*

- Restore and enhance the operational capacities of actors in the justice and public safety system.
- Modernize the justice and public safety system and expand services at the territorial level.

*Public Administration:*

- Ensure management of public finances in line with good governance, particularly during the implementation of the PDNA.
- Ensure the payment of wages.
- Reestablish the operational capacities of the public administration.
- Strengthen human resources.

*Democratic Process:*

- Seek a political consensus during the reconstruction period.
- Strengthen of the democratic processes through support to Parliament and Political Parties.
- Support civil society to promote dialogue on public policy.
- Strengthen the capacities of the Provisional Electoral Commis (CEP).
- Support the institutional strengthening of the National Identification Office (ONI).

***Territorial Development***

65% of economic activity in Haiti is located in the Port-au-Prince area while the economic opportunities in other departments are not harnessed. Following the earthquake, over 500,000 people have moved to secondary cities. This new distribution of the population in the territory offers an opportunity to develop other growth poles (*Poles de croissance*) in the country.

In light of these challenges, the PDNA suggests the following key messages:

- Encourage, through reconstruction aid, displaced populations to settle around new growth poles.
- Develop necessary infrastructure and services for the development of economic activities outside Port-au-Prince.
- Accelerate the process of deconcentration and decentralization.

***Environment***

Deep imbalances existed in the natural and human environments in Haiti before the earthquake. An extremely degraded environment and stressed watersheds contribute to its vulnerability. Forests are now less than 2% of the territory and the population is concentrated in the watershed areas. The population faces acute poverty and lives in an economy largely based on subsistence. The geographical, geological, geo-morphological and climatic backdrop exposes the country to a broad spectrum of natural adverse phenomena. The chronic failure of governance systems to ensure effective and sustainable management of resources and space, and control of pollution, both in urban and rural natural or agglomerated, is also causing difficulties. This results in a dislocation and a steady deterioration of the productive space and a growing vulnerability across the country. After the earthquake this condition is exacerbated: some structural problems are amplified, for example, the earthquake produced 40 million m3 of debris.

In light of these challenges, the PDNA suggests the following key messages:

- Take urgent action to reduce pollution and nuisance caused by the earthquake including debris management.
- Implement measures to protect the environment during the reconstruction process.
- Reduce the environmental vulnerability of the affected areas, particularly through integrated watershed, coastal, and marine areas management.

- Take into account the adaptation and resilience of ecosystems to face climate change.

### ***Disaster Risk and Disaster Management***

Among all Small Island Developing States (SIDS), Haiti is the country with the highest index of vulnerability to cyclones. Located in the middle of the Caribbean Basin, 96% of the Haitian population lives under the constant risk of 2 or more hazards. In addition to known exogenous shocks (hydro-meteorological, geological and others, such as epidemics, etc), Haiti has been recently identified as one of the most vulnerable countries to climate change. Each event further weakens the national resources and increasing vulnerability in turn increases the impact of the next crisis. Although there are tangible results on the protection of population against hydro-meteorological hazards, much remains to be done on other type of hazards and in the protection of investments exposed.

In light of these challenges, the PDNA suggests the following key messages:

- Affected population: (i) adjust contingency plans (local and national) towards the displaced and homeless population, (ii) evacuate the camps in risk areas, guide reconstruction efforts by earthquake- and hurricane-resistant construction standards.
- Roles and responsibilities: (i) adjust the legal framework of ministries, (ii) empower civil society and private sector for disaster prevention (building code, insurance) and preparation (continuity plans of operation, training first aid, etc)
- Operational preparedness and response capacity: (i) train the line ministries staff and build their capacity, (ii) recruit, train and equip the firefighters, (iii) strengthen the territorial network of DRM committees (equipment, training, warning and evacuation system, etc)
- The capacity of prevention and disaster risk management: (i) build sector capacity of monitoring and disaster risk analysis, (ii) planning, budgeting and implementing sector measures for the investments protection and reconstruction.

### ***Social Sectors***

Before the earthquake, the provision of basic social services was already inadequate and inequitable throughout the country. Access was still precarious and coverage was very limited. It is mainly the non-public sector that provided this service. The rate of maternal and infant mortality in Haiti was significantly higher than those of other countries in the region. More than half the population had no access to formal health or drinking water. Before the earthquake, 30% of children were suffering from chronic malnutrition and it was estimated that 40% of households were living in food insecurity. More than 500,000 children aged from 6 to 12 were not enrolled, 70% of those attending the school had a school delay of more than 2 years and 38% of the 15 years and older population were illiterate. Recreational and sports facilities were inadequate and poorly maintained.

The earthquake aggravated the situation by impacting the social services human resources, destroying many of the facilities and reducing the ability of households to afford these services. Vulnerable populations, including people affected by the earthquake are more affected in their ability to access to social services.

In light of these challenges, the PDNA suggests the following key messages:

### *Health*

- Ensure universal access to health services, particularly for vulnerable and affected populations.
- Strengthen the role of leadership, coordination and regulation of the Ministry of Public Health and its role as facilitator of the decentralized management of the health sector.
- Restore and strengthen human resources in the sector.
- Strengthen governance at central and decentralized levels and ensure the establishment of a solidarity financing-system based on performances.
- Ensure the effective and efficient management of inputs and essential drugs and establish mechanisms to ensure free distribution.

### *Education*

- Promote the return to school by supporting part of schooling costs, including salary compensation over a period of time to be determined, for the private sector education staff and support for the construction of temporary safe shelters.
- Aim to free primary education.
- Reorganize the education system with, in particular, the establishment of an information system, the accreditation of institutions, the revision of the partnership framework with the non public sector, the development a school map.
- Establish ways to ensure the quality of education, in particular, curricula reform and teachers' evaluation policy .

### *Nutrition and food security*

- Prevent an increase of acute malnutrition among children (6 to 59 months) through the distribution of lipid-based supplements.
- Ensure a regular and adequate access to food to children and prevent malnutrition.
- Protect vulnerable populations against the deterioration of their nutritional status.
- Transform the national capacity to promote nutritional gains and food security in the long term for the population.

### *Drinking water, sanitation and hygiene*

- Ensure access to services for all by reducing inequalities in service provision.
- Strengthen institutional capacity for maintenance and management to ensure quality and sustainability of services.

### *Sport and Youth*

- Promote the access to physical activity, sports and culture, considered as a factor of social and economic integration of youth.

## **Infrastructure**

Before the earthquake, the construction sector was characterized by accelerating uncontrolled urbanization. Yet, exposure to natural disasters, such as flooding, landslides and earthquakes, were not properly taken into account in building techniques or housing location choices. The limited road network in Haiti is limited to 3400 km, 800km of which are asphalted; the port and air infrastructure have not been strong drivers of economic growth in the country.

The earthquake has massively affected housing and public buildings. In addition, approximately 70 km of main roads have been damaged, including high traffic ones. The port and airport of Port-au-Prince have been particularly hit. In the port, the north dock has been destroyed and

the south one severely damaged. As for the airport, the control tower has fallen down and the runway has been seriously altered. However, the telecommunication sector has only suffered limited impact.

In light of these challenges, the PDNA suggests the following key messages:

#### *Urban and community infrastructure*

- Set up a reconstruction fund for public buildings.
- Strengthen the role and capacity of community-based organizations and civil society for the reconstruction of community infrastructure.

#### *Housing*

- Set up a reconstruction fund for housing.
- Set up a securitization fund to take into account specific risks due to housing location choices in vulnerable neighborhoods.
- Regulate land titling.
- Provide training in building techniques that reduce risks.

#### *Transport*

- Restore operating capacity for the port and airport of Port-au-Prince
- Restore the road network to its pre-earthquake level.
- Take into account the principles of disaster risk management in the design and maintenance of the transportation network.
- Stabilize population outside of Port-au-Prince with basic infrastructure investments and labor intensive public works.

#### *Energy*

- Complete short-term repairs to guarantee minimum service.
- Increase the level of service and meet the needs of developing areas, taking into account migration and risks, while improving the financial management of *Electricité d'Haïti*.
- Upgrade the legal and regulatory framework.

#### *Telecommunication*

- Complete the recovery of public telecommunication infrastructure.
- Restore international access to the undersea cable and build a new cable landing station. .
- Complete the revamping of the legal and regulatory framework.

### **Production Sector**

There are many obstacles to the effective realization of Haïti's potential in its production sphere. One of them is certainly the lack of regulation to ensure competition; another one is the capital city-centric infrastructure network.

In light of these challenges, the PDNA suggests the following key messages:

- By setting up a recapitalization fund, ensure the continuing ability of the financial sector to support small and medium enterprises in the aftermath of the earthquake.
- Update the legal and regulatory framework for the private sector.

- Boost the competitiveness of the private sector internationally, in the wake of the reconstruction.
- Support the development of the agriculture, tourism, and textile sectors as envisioned in the growth poles.

### ***Cross-cutting themes***

Before the earthquake, the unemployment rate was estimated at 30% for the whole country (45% in Port-au-Prince), 32% for women and 62% for the age category 15-19 years. In addition, the total lack of a formal social protection system exposes vulnerable groups to major risks. Girls and women are particularly at risk of violence.

Based on the decline in GDP due to the earthquake, it is estimated that job losses could be as high as 8.5%. Trade, tourism, transport and communication sectors have been particularly affected. In light of these challenges, the PDNA suggests the following key messages:

#### *Employment*

- Ensure that economic growth create jobs, during and beyond the reconstruction phase.
- Set up an operational and institutional framework which encourages the use of labor intensive works.
- Develop microcredit adapted to the most deprived, in particular women.
- Gradually increase labor standards.

#### *Gender*

- Ensure protection and safety for women and girls in camps.
- Guarantee a better participation of women in the job market, especially during reconstruction activities.

#### *Youth*

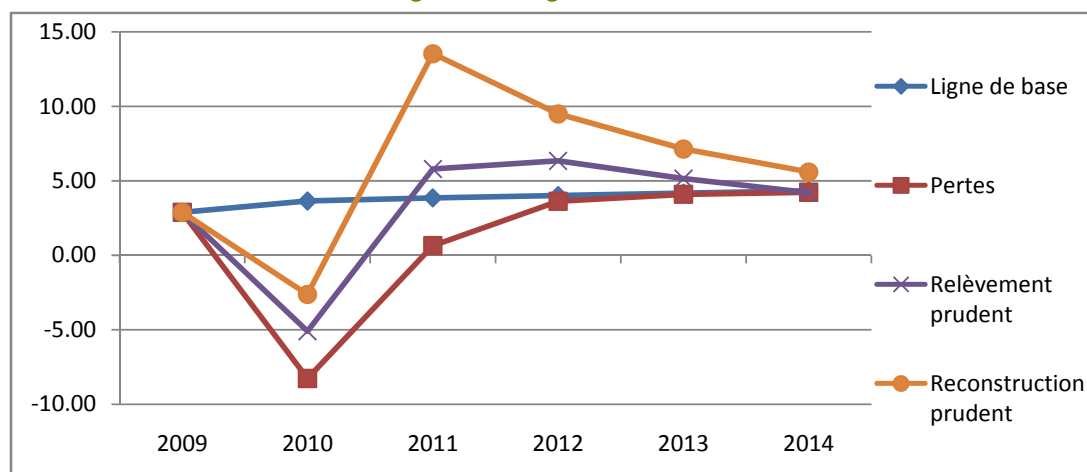
- Invest in young people by ensuring schools reopening for children and allowing young adults to take part in the reconstruction of the country.

## Socio-economic impact

### Macroeconomic impact

The impact of the earthquake on the overall economy represents a decline by 8% in economic growth in 2010, which could be of 2.5 and 3.5% depending on reconstruction scenarios.<sup>3</sup> The most affected sectors are trade, transports, telecommunication and industry. Inflation in 2009 was -4.7% but is estimated at 11% in 2010 due to the decline in supply, rising transportation costs and inflows of international aid.

Figure 1: Change in Haiti GDP



The global deficit of the central Government would increase from 4.4% in the fiscal year 2008-09 to 7.1% of GDP in fiscal year 2009-10, in spite of an increase in national revenue (from 17.9% to 18.7% in GDP terms). This is driven by international aid. Funding needs are estimated at US\$350 millions.

The current account deficit would rise from 3.2% to 6% in GDP terms. In spite of a surplus in the capital and financial account, the balance of payments should be in deficit, which calls for additional financing.

### Impact on employment

Employment is affected in different ways based on the reconstruction scenarios. The estimated losses in existing jobs are 8.5%. Trade, tourism, transport and communication sectors are the most affected. The more ambitious the reconstruction and recovery program, the lesser the impact on employment. For instance, spending a third of resources for reconstruction and recovery in 2010 would limit total job losses to 0.6%.

Given the high participation of male workers in the construction and extractive industry sectors, men could benefit more from reconstruction efforts than women.

### Impact on poverty

In the 2009 World Human Development Report (data are from 2007), Haiti ranked 149 out of 182 countries on the Human Development Index (HDI). Estimated at 0.532 (1 is the maximum and 0 the minimum), this indicator is slightly lower than in 2005 and remains the lowest in the

<sup>3</sup> The first scenario is a 'cautious' scenario under which 1/3 of the recovery and reconstruction is disbursed in 2010.

Caribbean-Central America Region. The Human Poverty Index (HPI) for Haiti is 31.5%. According to this index, the country ranked 97 out of 135 countries in 2007.

In 2001, 76% of the population was living below the US\$2-poverty line and 56% below the US\$1-poverty line. Over the past ten years, it is estimated that poverty declined by more than 8% in the entire country, except in Port-au-Prince where it has increased by 13%. After the earthquake, poverty rates are estimated to go back to their 2001 levels (71% of moderate poverty and 50% of extreme poverty) but this is without taking into account the promising benefits of reconstruction efforts.