

# UNCTAD

## **The Least Developed Countries Report 2012: *Harnessing Remittances and Diaspora Knowledge to Build Productive Capacities***

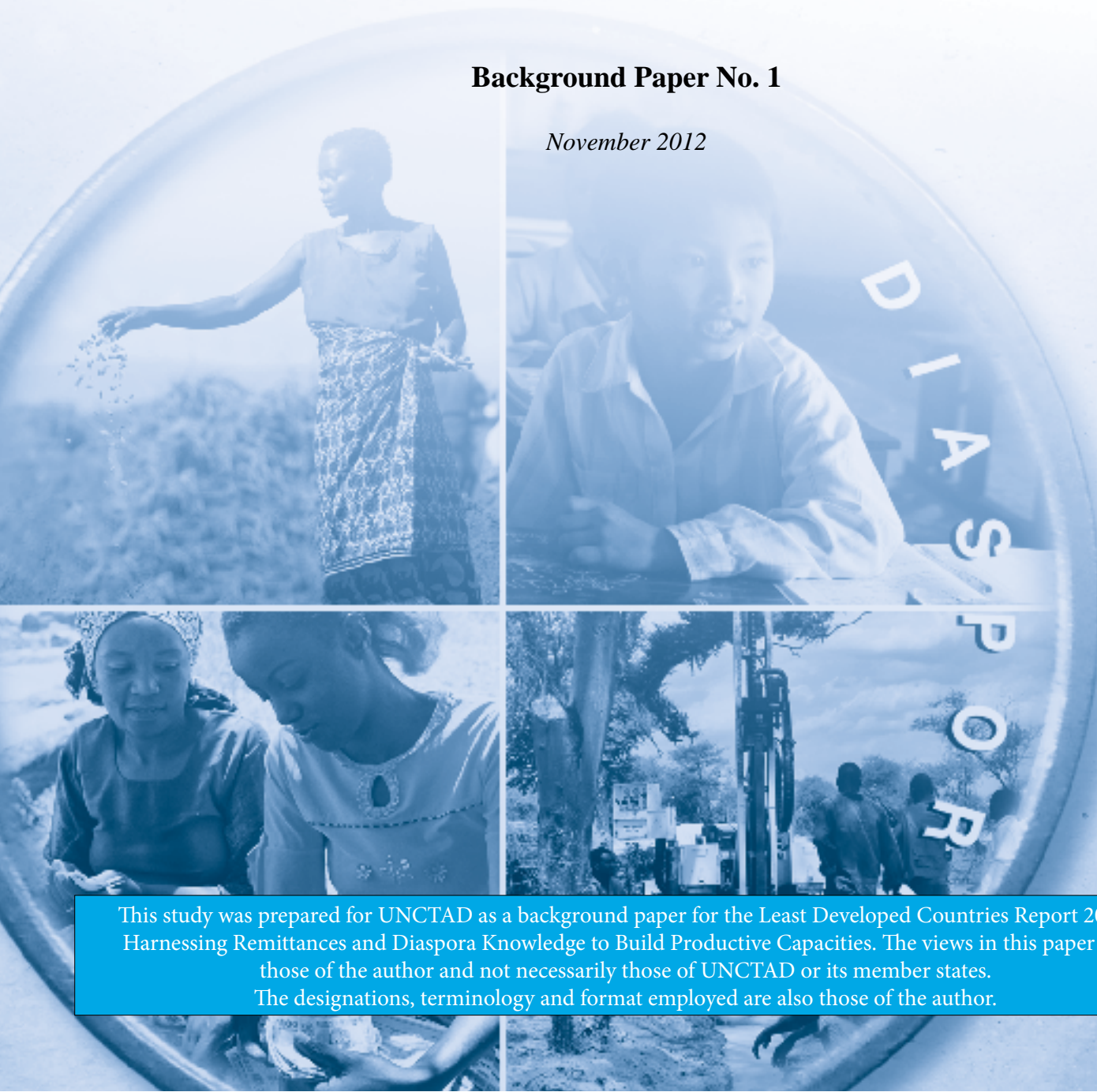
### **Background Paper**

#### *Brain Drain, Brain Circulation and Diaspora Networks in Haiti*

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## 1. Introduction

Haiti's short history as a free republic has been marked by massive emigration of workers since the turn of the 20<sup>th</sup> century, especially with Haitians going to the *Zafra*<sup>1</sup> and later as *braceros* to the Dominican Republic (DR). Emigration subsided in the late 1930s, owing mainly to events in both the Dominican Republic and Cuba against Haitians. The most well known in history is the so called *Operación Perejil* under the Trujillo regime.<sup>2</sup> Wave of Haitian emigration was to start anew in the early 1960s, but this time with greater intensity and to new destinations, such as the newly independent African countries, Canada, United States of America (USA), and France. If the emigration of Haitian workers in the first half of the 20<sup>th</sup> century was primarily motivated by economic hardship, the second wave that initiated in the early 1960s under the Duvalier regime was mostly characterized by domestic political events, which triggered the drain of skilled Haitian professionals from the middle and upper-middle class.

The outflows of skilled workers rank Haiti at this date as the world first exporter of skilled migrants, by population size, with about 84 of the country's college graduates leaving outside its borders (Ratha and Shaw, 2007). Docquier and Rapoport (2007) however controlled for migration year to take into consideration those who were 22 or more at the year of entry and had completed tertiary education level. They found that percentage to decline to 74. Likewise, taking 18 years old as a cut-off point of migration age, the percentage of skilled Haitian migrants with completed secondary education is about 78 per cent.

Irrespective of the true percentage of the so-called brain drain,<sup>3</sup> the main export of Haiti is skilled labor. This may seem ironic at first sight because conventional wisdom would have one to predict the contrary under a classical model of international trade, since

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<sup>1</sup> The term *Zafra* refers to the sugar cane harvest period in Cuba, while *bracero* is used to designate Haitian workers on sugar cane plantations in the Dominican Republic. So, both terms have in the end the same meaning.

<sup>2</sup> *Perejil*, which in Spanish means parsley, was the word that would determine the fate of a black person of dubious nationality to be slaughtered or not by Dominican officials. How well this word was pronounced was the determining factor. Trujillo's movement to get rid of Haitians in the DR was coined "*Operación Perejil* (or under its popular name, *El Corte*)" – The Parsley Massacre.

<sup>3</sup> It is assumed a priori here there exists a brain drain; present data precludes an analysis of a potential brain gain due to emigration of skilled workers, however some conjectures will be attempted.

Haiti is more abundant in unskilled labor. However, such observation of skilled Haitians delocating to OECD countries is in line with the edicts of agglomeration economies through centripetal forces, whereby skilled labor tend to leave peripheral regions to flock to the core where productivity is higher. For instance, Clemens, Montenegro, and Pritchett (2008) estimated that on average Haitians moving to the USA boost their productivity almost seven fold by increasing their income 680 per cent.

Skilled workers emigration has put Haiti in the limelight, particularly after the January 2010 earthquake where it has been speculated that about one third of the remaining university graduates has supposedly left in the aftermath of the temblor.<sup>4</sup> The reason is that skilled Haitians are to be the cornerstone for the development of the country. While this may be partly true, many donor countries collaborating with Haiti seem to get it wrong by putting even more resources in higher education. This matter will be discussed in greater length below.

This report is an attempt to understand the issues surrounding the brain drain, brain circulation, and diaspora networks pertaining to Haiti. The approach to analyzing these matters here is multifaceted. We make use of econometric tools using, in-depth interviews to collect expert opinion, as well as newspaper articles. The report is organized as follows. Section 2 looks at the remittances issue that arise as a consequence of emigration. In Section 3 we contextualize the brain drain debate in Haiti using a simplified emigration probability model as support; this section also looks at certain conditions in the labor market that may explain part of this emigration of skilled labor. Expert opinion and the answers of some interviewees in Appendix 2 also help understand some of the main reasons for skilled workers emigration. Sections 4 and 5 discuss some of the impacts of skilled emigration and point the regions where Haitian migrants are to be found. In Section 6 a non exhaustive list of diaspora networks is provided, while Section 7 analyzes some of the economic impact of the diaspora and its networks on the Haitian economy. Section 8 looks

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<sup>4</sup> No specific figure can be come across through a survey, but according to *Le Nouvelliste* around 10,000 skilled Haitians leave the country every year, and this number has increased substantially after the earthquake. Published in *Le Figaro* on 01/04/2010 by Thierry Portes.

at the characteristics of returned migrants in Haiti and their potential impact on the economy. Finally, Section 9 offers some concluding remarks.

## **2. The remittances issue**

A silver lining can be found in these skilled migrant outflows since emigration is remittances' foyer. A study from Inter-American Development Bank (IDB, 2007) reveals that 45 per cent of Haitian households have a family member living abroad. Of those, 31 per cent receive an average of \$150 USD.<sup>5</sup> Remittances are an escape route from poverty for many Haitian households; non remittance recipient households have about 22 per cent higher vulnerability to poverty than their recipient peers. The former also have a higher incidence of chronic poverty and, without going into an analysis of direction of causality here, it is observed that children in recipient households enjoy better health, are better nourished, and have higher level of schooling than their non recipient counterparts.<sup>6</sup>

This non labor income flow has also infused the country's economy with much needed international reserves. As can be depicted in figure 1 below, remittance flows to Haiti have been growing steadily, although its slope is less steep after 2008. This may be reflecting the beginning of the global economic meltdown that started in the housing market in the USA, which also negatively affected the ability of Haitian migrant workers to send remittances back home to support their relatives and friends. From 2000 and beyond, remittances outpace foreign direct investment (FDI) and the country's export of goods and services. Remittances were also above official development assistance (ODA) until 2009. In 2010 remittances were at about \$1.5 billion USD, while ODA stood at almost \$3.1 billion USD. This shift reflects the international community's commitment to Haiti after the January 2010 dreadful event, but it is conjunctural and therefore is not here to stay.<sup>7</sup>

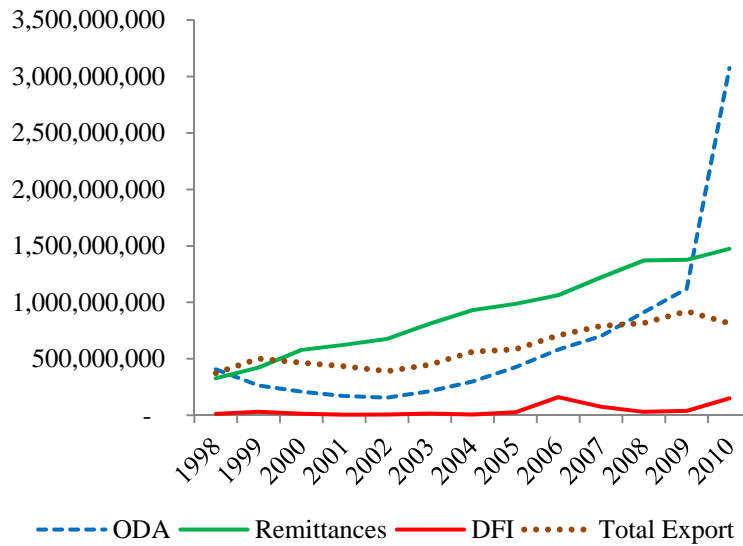
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<sup>5</sup> Remittances from Haitian migrants in the DR are somewhat lower; on average they represent \$ 96 USD (Orozco et al., 2005).

<sup>6</sup> See Jadotte (2006) for an analysis of poverty, vulnerability, and inequality effects of remittances.

<sup>7</sup> It should be mentioned though that such increase in nominal ODA allotment to Haiti does not mean an increase in real money allocation as Haitian officials complain their total lack of control on how aid money is spend to effectively benefit the Haitian population. The absence of change in physical infrastructure and lack

**Fig 1. Haiti international remittances inflows, ODA, FDI, and total export: 1998-2010.**



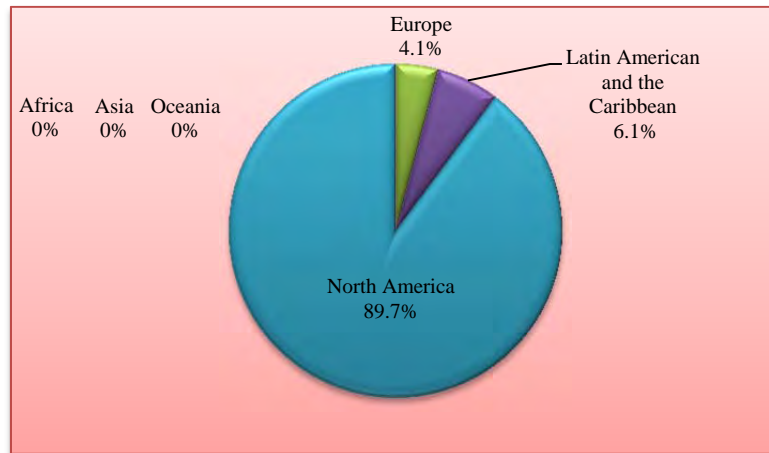
Source: World Development Indicators (2011). The World Bank

Figure 2 below gives an account of where remittances to Haiti originate from. Almost 90 per cent of all remittances come from North America, with a substantial amount of this stemming from the USA. The Latin America and the Caribbean (LAC) region occupies the second position with about 6 per cent of all remittances, while Haitian migrants in Europe contribute 4 per cent of the total.

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of improvement on the human development front, despite the increase in nominal aid money, are reasons to understand the concern of Haitian officials regarding how effectively aid money is spend to benefit the majority of the people of this country.

**Figure 2. Remittances inflow to Haiti by region**



Source: Human Development Report (2009)

As has been established in figure 1 above, remittances are very important to Haiti's economy. Beyond its impact at the micro level in lowering the poverty rates in recipient households, remittances also have macroeconomic bearings, including potential perverse consequences in the labor market<sup>8</sup> (Jadotte, 2009) or the Dutch Disease (through the appreciation of the real exchange rate) which may constrict the economy's ability to export; a complete account of such consequences is beyond the purview of this report. Now, a closer analysis of the antechamber of remittances, i.e. emigration and specifically of the skilled workers, is what we will concentration our attention to.

### **3. Haiti and its diaspora: contextualizing the skilled emigration debate**

Haiti is home to 10.03 million people with an average population growth rate of 1.7 per cent over the decade 1999-2009; 52 per cent of this population still reside in the rural area. More than three quarters of Haitians live on less than two dollar per day. Lack of opportunities permeates Haitians daily life. Innate to human nature is migration to find

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<sup>8</sup> Clemens (2010) rather considers the negative impact of remittances on labor supply in developing countries as a development sign of emigration. The author sustains that this gives remittance recipients greater ability to allocate their time endowment as they wish.

better opportunities elsewhere. To get an understanding of the context within which emigration and possible brain drain in Haiti occur, a good place to start is domestic or internal migration.

Haiti has an internal migration rate of about 24 per cent. However, migration to the Metropolitan Area of Port-au-Prince (MAPaP), the capital city that concentrates the bulk of basic services and economic activity, reaches almost 72 per cent. There, the propensity to migrate increases with education level. The pattern of internal migration in Haiti reveals a very important fact: university graduates have about one third higher probability to migrate than their counterparts with completed secondary education only, while the latter have a 13 per cent greater probability to leave their county of origin than their peers with no formal education (World Bank, 2006: 21). Migration is also one way to shield oneself from hardship and certain risks. Internal migrants in Haiti suffer a 23 per cent less vulnerability to poverty than non-migrants (Jadotte, 2011). International migration follows a similar pattern from what can be observed with internal migration. Table 1 below gives an account of that and makes a comparison with the rest of Caribbean countries sending migrants.

**Table 1. Emigration rate by education level, period 1990-2000**

	Haiti	Caribbean
<b>Primary</b>	3	8
<b>Secondary</b>	28	37
<b>Tertiary</b>	84 <sup>9</sup>	63

Source: Docquier and Marfouk (2005)

Even more remarkable is the fact that 36 and 31 per cent of, respectively, all male and female Haitian migrants to OECD countries have tertiary education. Meanwhile 47 per cent of them have completed secondary education (SICREMI, 2011).<sup>10</sup>

<sup>9</sup> Again, this percentage does not take into consideration year of entry of the immigrant, as is done by Docquier and Rapoport (2007).

<sup>10</sup> SICREMI: *Sistema Continuo de Reportes de Migración Laboral de las Américas*.

So, despite the fact that Haiti has the lowest educational attainment of all countries in the Caribbean and that the country also has the lowest aggregate emigration rate, it is sending far more skilled migrants than any other country of the region. It may sound contradictory, but it is no surprise that there are so many skilled Haitian workers emigrating despite its nominally short supply in the country; skilled labor is more mobile because of its higher marketability, Haiti's labor market does not seem to be able to absorb and employ gainfully its skilled workers. The flat truth is that when conditions in the home country are bad more mobile and marketable workers simply vote with their feet.

The previous assertion should be nuanced however, given the fact that in certain fields there appears to be an increasing demand in Haiti. In information and communication technology (ITC) for instance, waiting time before a graduate can find a job is minimum and the wage is not bad at all. Therefore, people who acquire skills in this field not only tend to stay in Haiti, but are the ones most likely to return after pursuing advanced studies abroad, particularly after the earthquake.<sup>11</sup>

Besides, educational attainment has been increasing steadily in Haiti over the past years and migration flows tend to increase as a consequence. In such a context, emigration will particularly affect skilled prospective migrants due to the globalization process and the accompanying centripetal forces that dominate in agglomeration economies. There, higher productivity is the rule and, as mentioned earlier, this induces better prepared agents to move to such areas where there exists already a good stock of them. Nevertheless, agglomeration economies or not, the case of Haiti may still seem paradoxical because in general countries that lose from skilled emigration tend to have high emigration rates and/or high human capital stocks (Docquier and Rapoport, 2007), such as England, which in absolute terms is the first exporter of skilled workers. In Table 2 below we present the result of a simple migration model to predict the emigration probability in Haiti controlling for various factors, including sector of economic activity, age cohorts, wealth level and network effect. The model estimated is a zero-inflated negative binomial migration decision model. A full account is not within the scope of this report but some findings are worth

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<sup>11</sup> Interview with Patrick Attié, director of the École Supérieure d'Infotronique d'Haiti (ESIH), July 16, 2012.



mentioning. A detail and rationale for choosing such a model are proposed in Appendix 1. The data used for the estimation is the Haiti Living Conditions Survey (HLCS) 2001, which is the latest available household survey for Haiti.

**Table 2. Emigration probability model**

	Coef	z-Stat	$\partial P(y > 0)/\partial x$	z-Stat
Depvar: dependent variable is family members abroad.				
<i>(Omitted variable: no formal education)</i>				
Primary completed	0.2616***	4.50	0.1409***	4.23
Secondary completed	0.4420***	6.08	0.2615***	5.21
University or higher	0.4093**	2.21	0.2530*	1.82
<i>(Omitted variable: Agriculture, Fisheries, and Extractive Industries)</i>				
Manufacturing, Electricity	-0.1950	-1.47	-0.0901	-1.57
Commerce, Hotels, Restaurants	-0.0360	-0.35	-0.0180	-0.35
Community service, Domestic services	-0.0850	-0.59	-0.0411	-0.61
Other services	0.0285	0.28	0.0144	0.27
<i>(Omitted: 15-25 years old)</i>				
26-40	-0.0100	-0.11	-0.0050	-0.11
41-54	0.2156**	2.34	0.1140**	2.23
55-65	0.4492***	4.52	0.2667***	3.85
>65	0.4489***	4.42	0.2679***	3.75
<i>(Omitted variable: MAPaP)</i>				
Semi-urban	0.4449***	5.25	0.2563***	4.58
Rural	0.4606***	5.55	0.2185***	5.84
Wealth	0.2166***	12.52	0.1090***	12.07
Wealth Squared	-0.0077***	-6.23	-0.0039***	-6.22
Network*Household size	0.1964***	7.04	0.0988***	7.06
Returned migrant (1 if there is at least one returned migrant)	0.9371***	11.26	0.7427***	7.54
Intercept	-1.5588***	-9.77		
<i>Logit inflation model</i>				
Log likelihood: -6,848.71				
Farming and fisheries	1.9051***	2.96	-0.1113***	-2.70
Nuclear family	1.1994***	3.12	-0.0649**	-2.08
Intercept	-3.3273***	-5.62		
Ln $\alpha$	0.3114***	4.03		
Number of obs: 7,157				
Nonzero obs: 2,124				
Zero obs: 5,033				
Wald $\chi^2(17)$ :	788.27	(Pr > $\chi^2 = 0.000$ )		
LR test, Ho: ln $\alpha = -\infty$ :	$\bar{\chi}^2(01) = 502.83$	(Pr > $\bar{\chi}^2 = 0.000$ )		
Vuong test:	z = 2.91	(Pr > z = 0.018)		

NBRM	BIC=-49622.081	AIC=	1.924	Prefer	Over	Evidence
vs ZINB	BIC=-49741.920	dif=	119.839	ZINB	NBRM	Very strong
	AIC=	1.890	dif=	0.034	ZINB	NBRM
	Vuong=	8.723	prob=	0.000	ZINB	NBRM p=0.000

\*, \*\*, \*\*\*, imply significance at 10%, 5%, and 1%, respectively.

As expected from the ongoing discussion, the probability to emigrate increases with the level of education. Although there seems to be an inflexion point by the time we reach completed secondary education, we have not found any statistical difference between the parameters for secondary and university level education. Workers with primary education completed have a 14 per cent higher probability to emigrate than their peers without formal education. Likewise, having completed secondary education means an almost 12 per cent higher emigration probability compared to just primary education level. The same applies to university graduates. Workers in their prime age show a higher emigration probability as well. As to branch of economic activity, Other services, which health sector workers are part of, is where a positive sign is found on migration. However, the associated parameter is not statistically significant. A look into the Haitian labor market provides an additional explanation for this higher emigration propensity with skill in Haiti.

From a conversation with representatives of the Chamber of Commerce and Industry of Haiti (CCIH), about 200,000 people enter the labor market every year. Yet, labor demand does not even represent 10 per cent of this supply. One of the consequences of this mismatch between demand and supply in the Haitian labor market is that people tend to study more in order to secure an entry point. As the pool of the educated gets bigger the higher the demand for higher education tends to be, since employers will tend to use the level of education as sign of ability to perform any given task. Under this scenario, the result is an ever increasing level of unemployment with schooling because the higher the screening of employers for ability, the greater the demand for higher education will be so as to secure an entry point in the labor market.

What we observe in Haiti corroborates the previous thesis. Unemployment rate increases with education level to reach its maximum level at about 37% for people with

completed secondary education. Those with university studies have a higher probability to find a job than their peers with secondary level education (ISHI, 2010). Nevertheless, their employment probability remains below those with education level lower than completed secondary. This lack of opportunities for skilled workers in the Haitian labor market is then one of the major reasons behind this delocalization in favor of the OECD countries principally.<sup>12</sup> Moreover, almost half of individuals with more than 65 years old continue to work; this figure is even higher among men where 60 per cent of them are still active in the labor market (*supra*). As a consequence, a crowding out of young workers labor is under way if demand is stable or lower than supply. The lack of a well functioning retirement pension system explains in part why older workers need to stay so long active in the labor market and also the reason why many young people choose to leave the country. Table 3 below presents information of labor demand from a major jobs advertisement webpage in the country and makes evident the mismatch we talked about earlier.

**Table 3. Jobs offered in the Haitian labor market 2008-2010 (cumulative)**

Field	Number	Percentage
Management, Finance, Accounting, Commerce	873	51
Healthcare sector and Social Work	242	14
Human and Social Sciences	194	11
Engineering	177	10
Secretary	124	7
Computer Science	105	6
<b>Total</b>	<b>1,715</b>	<b>100</b>

Source: [www.Jobpaw.com](http://www.Jobpaw.com)

Jobpaw sustains that only 30 per cent of jobs are not advertised on their website. So, according to them total formal labor demand for the three years spanning from 2008 to 2010 was about 2,230. Well, one might rightly object that the vast majority of jobs in Haiti are not advertised since people use informal channels to both search jobs and to employ. Making the highly inconceivable assumption that only 5 per cent of the jobs available are advertised, this would bring the total number of jobs to 44,600 for the three-year period. This demand would still not match a supply of 600,000. In such a context of unmatched labor supply, especially skilled labor, there are only two options: resort to informality,

<sup>12</sup> Table 2.4 in Appendix 2 also supports this view.

which is already the main sector of employment in the country,<sup>13</sup> or emigrate. Indeed, Orozco (2006) points that close to 90 per cent of Haiti's skilled emigrants did so due to lack of job opportunities. While the interviewees in our survey are a very select group and are not representative of the Haitians that emigrate, 25 out of 32 mention lack of opportunities or bad conditions as the reason for being outside of Haiti (see Table 2.4 in Appendix 2).

According to the president of the Haiti Chamber of Commerce and Industry (CCIH), the main cause of Haiti's brain drain is the mismatch between the country's development needs and its labor market demand and the curricula of the universities and vocational training centers. He sustains that the universities and training centers are providing to their students certain skills for which there is no demand presently in the labor market. He proposes a better coordination among the State, the Chambers of Commerce of the country, and the universities and vocational schools to regulate the curricula according to present and immediate future's market demand for labor. While there are some initiatives that have been adopted, such as the creation of the Haitian Apparel Center (HAC),<sup>14</sup> he said that the void is so big that much more has to be done and quick to correct past mistakes.<sup>15</sup>

The director of higher education department of the Ministry of Education in Haiti, Florence Pierre-Louis, declares that on many occasions her department has granted scholarships to staff members to go to Canada or France to get doctorate degrees. Yet, she knows that they will most likely stay after their studies because they have seen those who chose to return in the impossibility to make a decent living in Haiti and their knowledge is not being put to use gainfully. She understands that this is real dilemma. Paraphrasing the chief of staff of the Ministère des Haïtiens Vivant à l'Étranger (MHAVE), it is not rare to bump into a Haitian taxi driver on the streets of Brooklyn, Montréal, New York, or Paris. Yet, many have completed state sponsored university studies back in Haiti. That is a complete brain waste.<sup>16</sup>

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<sup>13</sup> 57 per cent of employment is covered by the informal sector in Haiti (IHSI, 2010). Productivity tends to be low in this sector.

<sup>14</sup> The HAC is a training center to support the garment industry, which the main export sector of Haiti today.

<sup>15</sup> Interview with Hervé Denis, president of CCIH. July 24, 2012.

<sup>16</sup> Communication with Serge Fernandez, chief of staff of (MHAVE). July 25, 2012.

Ironically though, many of those in charge of higher education in Haiti are constantly pushing the government to raise the share of the budget allocated to higher education so as to expand the capacity of public universities. In a Niskanenian sense of budget-maximizing bureaucrats,<sup>17</sup> this is quite rational a stance. However, increasing the share of budget allocated to higher education in order to expand the capacity of universities will only make matters worse, i.e. further exodus of skilled Haitians. One just needs to look at how people vote with their feet. If individuals that are receiving higher education in Haiti deem that they should leave the country after completing their studies, it is a clear signal that something is wrong between demand and supply of labor. And that is where the problem needs fixing, not by increasing the budget to higher education as a response to demand for higher education of future job demanders. Besides, it is not clear whether returns to higher education in Haiti are lower than the cost of capital or if they are even negative. What is clear though is that putting more resources to higher, at the expense of basic, education may provoke in Haiti, besides the increase in brain drain, a spurt in inequality in a country that is not only the poorest in the Western hemisphere but also the most unequal, and the third most unequal in the world after Namibia and South Africa.

The logic behind the previous claim is simple. The majority of school age children in Haiti do not attend school because their parents cannot send them due to lack of financial resources.<sup>18</sup> Among those who do attend about 90 per cent of them go to private schools. While the quality of teaching in those private schools varies widely, the best ones tend to charge tuition fees that are higher than the average income in Haiti. Because of high opportunity cost (i.e. forgone wages) many children will not be able to go on with secondary schooling. So, a big portion of those who go on to secondary school has to come from relatively well-off households, with income substantially higher than average. The same reasoning of high opportunity cost will prevent quite a few from pursuing university studies after completing secondary school. In the end, the vast majority of those who can

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<sup>17</sup> See Niskanen (1975).

<sup>18</sup> At the time of writing there is a government program, *Lekòl Gratis* (in Haitian creole, Free School), recently launched to allow all school age children to attend schools by providing cash transfers. The controversies surrounding this program and the lack of data make it hard to assess the effectiveness of such program, especially when there exists serious constraint on the supply side (i.e. lack of schools and teachers) to effectively put all children to school.

make it university should be those students from the top quintile of income distribution. So, resources allocation to higher education in a society where basic education is not covered represents a direct subsidy to the relatively well-off, exacerbating therefore inequality and possibly driving polarization further. In that sense, it is more recommendable that the government concentrate scarce resources on basic education and vocational training, building physical and strengthening social infrastructures, supporting employment creation activities and key careers that are crucial for the countries development need (e.g. engineering, medicine and core applied sciences) and let those who wish to pursue university studies in fields not deemed crucial defray the associated expenses. Later, when market conditions allow, state support to higher education within a broad scientization policy should then be welcome. The international community in general and donor countries in particular should act accordingly. That is the only way toward progress and development in Haiti, and this will not only stem the brain drain but eventually attract skilled expatriates to further reinforce the development process.

#### **4. Some consequences of skilled emigration**

The specialized literature on international migration used to focus only on the negative consequences of brain drain. Well, this specious neomercantilist argument of negative consequences of skilled emigration on sending countries had been downthrown long ago by both David Hume and David Ricardo.<sup>19</sup> As Chand and Clemens (2008) put it, the association of skilled workers emigration to an outright loss for the origin country belongs to the Mercantilism litter bin of economic thought. A new strand of the literature contends that a moderate emigration rate may have positive impacts on the sending country (Stark and Wang, 2002; Commander, Kangasniemi, and Winters, 2004; Docquier and Rapoport, 2007; Beine, Docquier, and Rapoport, 2008). In fact, some suggest that skilled workers emigration, whether moderate or not, does have positive impacts on the development prospects of the sending country because, inter alia, it induces more private investment in higher education due to the greater mobility and marketability of skilled

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<sup>19</sup> David Hume (1752: Political Discourses), David Ricardo (1817: Principles of Political Economy).

workers. Meanwhile, not all would-be migrants will get a chance to get a visa to leave the country after completing their education; hence, a brain gain to the country triggered by the emigration possibility. Even when there would be no human capital formation induced by emigration, in many cases the latter represents the most readily available route to break loose from political and economic vagaries. Haiti seems to be a good case in point. Data availability does not allow any unambiguous conclusion regarding potential brain gain due to skilled workers emigration in the case of Haiti. However, given the fact that emigration of skilled Haitian workers has continued unabated at the time that educational attainment has been increasing, it stands to reason to conjecture that there may have been a brain gain. Now, whether this brain gain is due to skilled workers emigration or not is a totally different question since it may simply be disguising a long term trend towards higher level of education of offspring compared to their progenitors. More research with appropriate data will be necessary in order to arrive at unambiguous conclusion in this regard.

Various studies point to a positive effect on prospective migrants' educational choice. For instance, Kangasniemi et al. (2004) found that about one third of Indian physicians interviewed in the United Kingdom declared that their decision to pursue higher education was largely driven by the possibility to emigrate. A similar impact can be found in the software industry of this country (Commander et al., 2004). Lucas (2004) also provides evidence for the Philippines, where higher education investment was driven by international labor demand and migration possibilities. Beine, Defoort, and Docquier (2005) find instead that such human capital gain from skilled migration starts to vanish as countries become poorer. Judging by the responses from the survey, it seems the main motive in Haiti for pursuing university or post-secondary studies is not the prospect of emigration (see Table 2.3 in Appendix 2).

We have mentioned both remittances and potential brain gain on the positive side of skilled workers emigration. To put the debate into perspective, it is important to explore some of the negative consequences skilled emigration may bring about.

The first and most obvious negative impact of skilled workers emigration that is mentioned in the literature is the tax forgone. Typically migrant sending developing

countries spend more per capita wise on tertiary than on primary and secondary education. Sometimes the part of the budget allocated to tertiary education can even be greater in absolute terms compared to other levels of education. For instance, public expenditures on tertiary education per capita in Haiti are about 300 per cent higher than secondary education and outweigh primary education public spending by 82 per cent (see Table 4 below).<sup>20</sup>

**Table 4. Public expenditures per capita on education (in US dollars)**

Primary	136
Lower secondary	65
Upper secondary	69
Tertiary	248

Source: MENFP (2007)<sup>21</sup>

Some authors point to forgone tax revenue in the presence of emigration of skilled workers. It should be remembered however that emigration of skilled workers may be the result of bad education policies in the first place. If the government of a poor country is subsidizing tertiary at the expense of basic education while the economy does not have the capacity to absorb the supply of university graduates, keeping the borders closed to prospective migrants would still result in no tax revenue for the government, unless an income tax can be imposed on the unemployed with a grace period that expires once they start working!

Anyway, assuming that education policy is sound and there is effectively forgone tax revenue due to skilled workers emigration, one can conceive other important negative setbacks skilled migrant outflows can set in motion. There are positive externalities conferred to the rest of the labor force by skilled workers and such positive spillovers vanish with their departure. A good stock of skilled labor induces an emulation effect that has positive impact on the economy as a whole via increased productivity. Skilled labor emigration thus reduces the pressure to emulate, with negative consequences on aggregate productivity.

<sup>20</sup> It should be pointed however that while public expenditure on education in Haiti is among the lowest in the world (1.97 per cent of GDP) households spending on their children's education (6.57 per cent of GDP) and much more and among the highest in the world.

<sup>21</sup> The Haitian Ministry of Education and Vocational Training, in Wolf (2008).



Another negative impact of skilled workers emigration in the source country is the induced welfare loss à la Borjas (1995), which is due to movement of inframarginal workers (i.e. those whose remuneration is below their marginal product, Mishra (2007)). Their emigration raises labor cost and the wage bill, which can in the end trigger a productivity slowdown.

## 5. Haitian migrant workers: where are they?

According to the Global Migrant Origin database of the University of Sussex,<sup>22</sup> as of 2007 there were 751,245 Haitians living abroad. By 2010 this number has climbed up to almost 1.01 million, which represents 9.9 per cent of the country's work force (World Bank, 2011).<sup>23</sup> One could contend that there may be an underestimation of this figure given the number of Haitians living unlawfully in many countries, particularly in the Dominican Republic and in the United States of America. These irregular aliens typically do not show up in the official statistics. So, one could adjust this number upward without being totally off course.

For the USA alone, the Haitian-born population as of 2010 is estimated at 520,186; the number is significant at the 90 per cent over the confidence interval [498,996, 541,376].<sup>24</sup> For the same year, the population of 25 years or more is estimated at 503,622, among whom 19.2 per cent are skilled.<sup>25</sup> Table 5 below gives an evolution of Haitian-born population in the USA between 1960 and 2010.

**Table 5. Haitian-born in the US from 1960 to 2010<sup>26</sup>**

Year	1960	1970	1980	1990	2000	2010
Total	4,816	28,026	92,395	225,393	419,317	520,186 <sup>27</sup>

<sup>22</sup> [http://www.migrationdrc.org/research/typesofmigration/global\\_migrant\\_origin\\_database.html](http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html)

<sup>23</sup> According to CEPAL (2011), 7 per cent of this labor force would be concentrated in the United States alone.

<sup>24</sup> US Census Bureau 2010, American Community Survey.

<sup>25</sup> Ibid.

<sup>26</sup> [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_10\\_1YR\\_S0201&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_1YR_S0201&prodType=table)

As can be observed from the table above, over the span 1960-1980, the population has gone from almost 5,000 to a little more than 28,000. This is a 1,800 per cent increase over two decades only. This huge increase may be corroborating the emigration wave we talked about above, with domestic political events in Haiti in that era as the main driver. For Canada, existing data are not as detailed to the public but the latest census<sup>28</sup> suggests that there are 102,430 Haitians living in this country. We believe these data to be the correct ones, as is expected from census data. So, this concurs with our above contention of an underestimation of Haitians living outside Haiti. One case in point is the Haiti-Dominican Republic corridor that is quite porous as there are no natural frontiers between the two countries. Consequently, it is conceivable that there is at least the same amount of Haitians in the DR as in the USA, many of whom would be in an irregular situation. Thus, taking this factor into account, plus the growing number of Haitians moving to other LAC countries and those in Europe, this would easily put the total number of Haitians living outside Haiti between 1.3 and 1.5 million.

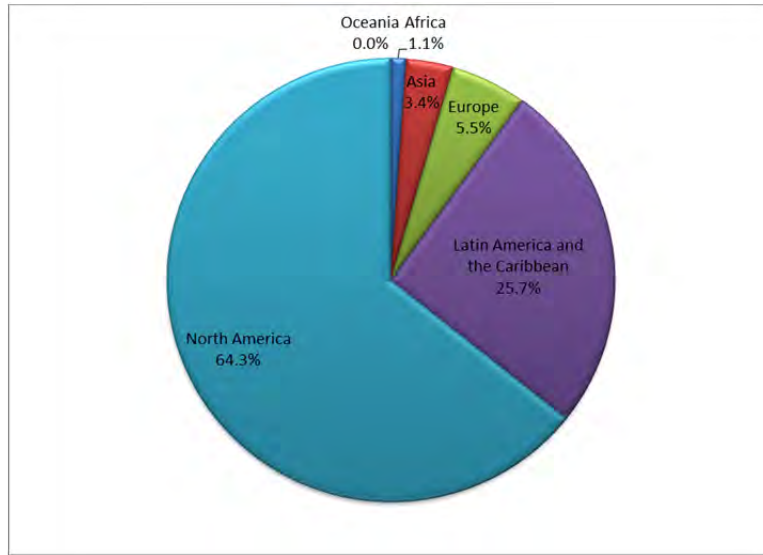
Knowing that internal conditions, both economic and social, are what induce skilled Haitians to leave the country, it is important to know where they are mostly likely to be found, which sector in Haiti is the most affected by their absence, what kind of activities they undertake in the receiving countries, and what sort of linkages they entertain back home. Figure 3 below gives a description of the distribution of Haitian migrants around the globe. 90 per cent of the Haitian migrants are concentrated in two regions: North America, which accounts for a little more than 64 per cent, and the LAC region with almost 26 per cent. In third position is Europe that is home to 5.5 per cent of Haiti's migrants.

**Figure 3. Distribution of Haitian migrants around the globe**

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<sup>27</sup> It should be mentioned that as of 2010 the Haitian diaspora, that is, Haitian-born plus those of Haitian origin not born in Haiti, in the USA amounts to 881,488.

<sup>28</sup> Census Canada 2011.



Source: Human Development Report (2009)

As is expected, skilled Haitian migrants are concentrated in the OECD countries but they are more predominant across the European Union (EU). 46 per cent of Haiti’s skilled workers are to be found in the EU, while the USA is responsible for 38 per cent. However, only 45 per cent have a job that is commensurate with their level of study in the USA (Özden, 2006). This means that the rate of brain waste for Haitians-born males in this country is at the tune of 55 per cent. It is quite plausible to assume that Haitian-born females face the same situation in this country as well.

Although there is no systematic data compilation in this regard, it is tempting to conjecture that the public sector in Haiti is the most affected one by skilled workers emigration. Within that sector, the health sector is perhaps the one facing the most difficulties. In Table 6 below, we present the sectors where Haitian migrants work in the USA and Europe, as data for other regions are not available.

**Table 6. Sectorial distribution of Haitian workers in the USA and Europe**

	Percentage of workers
Manufacturing	5
Construction	2
Commerce and motor vehicles repair	11
Housing and Food industry	11

<b>Health and social work sectors</b>	28
<b>BIORS (see initials below for definition)</b>	15
<b>ECNP (see initials below for definition)</b>	18
<b>AGMTW (see initials below for definition)</b>	10
<b>Total</b>	<b>100</b>

A: Agriculture, Fishing, and Forestry	N: Arts and entertainment industry
B: Banking, finance and insurance sector	O: Office and sales occupations
C: Other care services	P: Public administration and defense; compulsory social security
E: Educational services	R: Real estate
G: Gas, Electricity, Steam, and Air conditioning supply	S: Scientific and technical occupations
I: Information and communication	T: Housekeeping
M: Mining and Quarrying	W: Water supply, sewage treatment, and other waste management services

Source: SICREMI (2011)

As can be observed from the table above, the health sector is where we find the highest percentage of Haitians, with 28 of them working in this field. This may be corroborating our previous finding and conjectures from the emigration probability model in Table 1 above, where the other services sector in which health workers were concentrated was associated with a positive propensity to emigrate; albeit we did not find statistical significance on it.

According to the United Nations (2010), Haiti is one of the six countries in the world with more than 50 per cent of their native-born physicians living abroad while experiencing at the same time critical shortages of health workers.<sup>29</sup> And since about 90 per cent of physicians are concentrated in the Capital city Port-au-Prince, more than 500 Cuban physicians are in rural Haiti to fill the void. The following table gives a sense of the extent of the lag Haiti has in some health indicators.

**Table 7. Health indicators**

	<b>Haiti</b>	<b>Regional average</b>
Life expectancy at birth	62	76
Mortality rate per 100,000 births	300	66
Percentage of births attended by skilled health personnel	26	93
Malaria mortality rate per 100,000	5.5	0.1
Percentage of population using improved sanitation	17	87

Source: World Health Organization, WHO (2011).

<sup>29</sup> The remaining five countries are all in Sub-Saharan Africa.

In 2009, the density of both physicians and nurses in Haiti were 5.9 per 10,000 inhabitants; during the same year, the ratio for community health workers was 6.5 per 10,000 inhabitants. However, in 1998 these densities were 2.5 physicians, 1.1 nurses, and 2.5 community health workers per 10,000 inhabitants (MSPP, 2010:3).<sup>30</sup> For physicians and nurses this represents an increase of 136 and 436 per cent, respectively. Even though the WHO sets the recommended minimum at 25 physicians and nurses per 10,000 inhabitants and Haiti has still to breach a 19.1 gap from this 25 benchmark, the improvement it has made is considerable.

Over the same period (1998-2009), the population has gone from 8,342,233 to 9,864,241 (WDI, 2011); this is an 18.24 per cent increase. To our knowledge, no data are available on the rate of emigration of physicians and nurses for Haiti but there are some indications that the country has been losing its health personnel in favor of certain OECD countries, particularly Canada, the USA, and Spain. In the USA for instance, despite the increase in the total Haitian-born population through the years, the percentage of workers to be found in the health sector (physicians and nurses) has also been increasing and has done so at a faster rate than the rate of growth of Haitian-born US population.<sup>31</sup>

In any event, Bhargava, Docquier, and Moullan (2011) found that the supply of physicians in developing countries only have a human development impact when adult literacy rate is above 60 per cent. Moreover, their results show that the improvement in terms of low child mortality and increase in vaccination uptakes from limiting physician brain drain is very negligible in light of the Millennium Development Goals (MDGs). In 2010, Haiti's adult literacy rate stood at 48.7 per cent (UNDP, 2011). Moreover, Asongu (2012) found that emigration of health personnel is associated with improvements in both human development and economic growth when the starting point is low.

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<sup>30</sup> *Ministère de la Santé Publique et de la Population* (Haiti Health Ministry).

<sup>31</sup> In fact, in 2000 less than 9 per cent of Haitian-born aged 25 years or more had university level education. As of 2010 this percentage is above 19 per cent. Regarding the health sector and other related fields, less than 31 per cent of Haitian-born workforce was working there. In 2009 this percentage was above 35 per cent.

Skilled workers emigration rate in Haiti is high by all standards, and the sector that is perhaps the most affected by this drainage is the public sector. However, the public sector is also prey to a domestic brain drain, with highly skilled personnel migrating to, for instance, non-governmental organizations (NGOs) where wages are higher. The consequences of this domestic brain drain may be even worse for the country than emigration per se because, as will be seen later, Haitian migrants entertain activities in the destination countries and linkages and networks back home that, if properly leveraged, can weigh substantially in the country's development prospects.

## **6. Diaspora networks**

The diaspora can be a source to a society's transformation from abroad by making various contributions, including foreign direct investment (FDI), transfer of knowledge and technology, market development and cultural change. The Haitian diaspora in general, and Haitian migrants in particular, engage in a series of such activities to maintain links back home. For instance, there are many associations involved in philanthropic activities and their actions are geared towards meeting unmet needs in some specific community or locality in Haiti. They are organized mostly in hometown associations (HTAs) and their actions are usually made possible mostly thanks to collective remittances they send, but also through volunteering work by offering their expertise and time *in situ* to help with some *ad hoc* issue. It should be pointed out that the collective remittances made available by Haitian migrant associations are in addition to remittances migrant workers send back home to support their relatives and friends.

There many instances across the region where HTAs collective remittances are leveraged and supported by their respective governments to accompany development processes in their communities back home. One case in point is the *Tres por Uno* (Three for One) program in Mexico, where every dollar sent by Mexican migrant associations is matched by 3 dollars from the government. While in 1994 the Ministère des Haïtiens Vivant à l'Étranger, MHAVE, was created under the Jean Bertrand Aristide Administration

to facilitate and institutionalize the many contributions of the diaspora to the country, we are not aware of a similar initiative by the Haitian government.<sup>32</sup> However, a project launched in September of 2011 and that is now being developed in Haiti is the Leveraging Effective Application of Direct Investments (LEAD) program. LEAD is a Panamerican Development Foundation (PADF) and USAID/Haiti joint initiative.<sup>33</sup> The program targets investors of the Haitian diaspora in the USA (and elsewhere), willing to make their contribution to enhance the capacity and efficiency of already existing Small and Medium Enterprises (SMEs) in three development corridors in Haiti: *Cap-Haïtien*, *Saint-Marc*, and *Port-au-Prince*. The idea under LEAD is to match every dollar invested in a Haitian SME by the same amount. Funding is capped at 200,000 US dollar and eligible businesses have to operate in either of the following sectors: Textiles/garment industry; Construction and infrastructure; Tourism; Storage/warehousing, logistics and transportation; Agricultural production, processing and agribusiness; Alternative energy; Information and communications technologies (ICT). To date, 22 SMEs have been selected under the LEAD program, with the vast majority (14 of them) being in Port-au-Prince.

In the same vein, the IFAD-IDB initiated a program of Remittances and Rural Development with Fonkoze, the leading microfinance institution in Haiti. The idea was to enhance remittances services between Haitian HTAs in the USA and community development projects in Haiti.<sup>34</sup>

Also, a laudable enterprise launched by MHAVE and the French Embassy in Haiti is the co-development project. The aim of this program is to transfer knowledge and co-finance development projects submitted by Haitian migrants residing in France and its Overseas Departments and Territories. However, only 5 projects have been deposited so far

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<sup>32</sup> The diaspora has been given the status of the 11<sup>th</sup> Department of the Republic of Haiti (10<sup>th</sup> Department when the MHAVE was launched).

<sup>33</sup> A previous similar project, the Haitian Diaspora Marketplace (HDM), started in 2009 in a partnership between the USAID and Sogebank Fondation. This project was suspended soon after it was launched. At the end of July 2012, PADF and USAID will determine which projects are to receive support from the LEAD program. Interview with Nathalie Liautaud, manager of the LEAD program, July 10, 2012.

<sup>34</sup> For further detail visit: <http://operations.ifad.org/web/ifad/operations/country/home/tags/haiti>

to search funds through this program and just two of them did receive funding.<sup>35</sup> A similar effort was also undertaken by the USAID under their Emergency Capacity Assistance Program (ECAP), but it is for technology and knowledge transfer to assist Haitian institutions during the post January 2010 earthquake reconstruction effort.<sup>36</sup> At the time of writing, ECAP has attracted 13 Haitian expatriates, mainly from the USA and Canada. The United Nations Development Program (UNDP) in Haiti and MHAVE have apparently tried to attract Haitian experts in the diaspora to help in institutions building and good governance practices via the so called Transfer of Knowledge through Expatriates Nationals (TOKTEN) program. However, the TOKTEN program has not taken off in Haiti.<sup>37</sup>

Going back to the HTAs, we can identify several of such organizations that collaborate in some way or another with localities in Haiti. It is interesting to note that these organizations cater their services mostly to the health and education sector, but they also participate in building basic infrastructure. Presenting an exhaustive list and activities undertaken by the Haitian HTAs is beyond the scope of the present report.<sup>38</sup> However, some are worth mentioning.

In the USA the list is quite long. The *Association des Médecins Haïtiens à l'Étranger*<sup>39</sup> (AMHE, in English, Association of Haitian Physicians Abroad) seems to be the largest and most active Haitian professional organization in the diaspora. The AMHE entertains and supports programs to fight HIV/AIDS and Malaria with the government of Haiti-GoH (Weiss et al., 2009). It also has an internship program to bring students from the medical school in Haiti to the USA for a short stay to acquire more experience in this country. Another US-based organization that may stand out due to its collaborative spirit is the Haitian Resource Development Foundation (HRDF). The HRDF engages in a range of project, the objective of which, according to the organization's mission statement, is to

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<sup>35</sup> Interview with Daniel Suplice, Minister of Haitians Living Abroad. July 26, 2012.

<sup>36</sup> Further information available at: <http://haiti-ecap.com/about-the-program>.

<sup>37</sup> Conversation with Jessica Faieta, resident representative of UNDP-Haiti. No specific data on how many Haitian expatriates the TOKTEN program was able to attract could be shared.

<sup>38</sup> For a list of Haitian associations in Canada, France and the USA, see Fonkoze (2009).

<sup>39</sup> <http://www.amhe.org/>



enable and empower various Haitian locales to further personal and collective independence. Their projects range from drinking water, to school and clinic construction to disaster preparedness. One of the latest projects of HRDF is the eRanger Motorcycle-Ambulance in Aquin (*Département du Sud*).<sup>40</sup> The aim of the eRanger Motorcycle-Ambulance project is to improve emergency medical response capabilities in the area of Aquin.

In Canada, ROCAHD (Regroupement des Organismes Canado-Haïtiens pour le Développement) is a similar effort to coalesce many philanthropic organizations working for the advancement of Haitian communities back home. ROCAHD regroups about 40 Haitian and Canado-Haitian associations, many of which are in the Quebec province. ROCAHD has been able to channel substantial funding through CIDA (Canadian International Development Agency) and the Quebec Ministry of Foreign Affairs. However, for ROCAHD's projects to be eligible the organization has to match funds made available by the sponsoring institutions. ROCAHD intervenes in the field of education, health and sustainable regional development projects. It has been able to implement about 200 projects since its beginning in 1987, but has now 33 ongoing projects in the three areas. Total budget for these projects amounts to \$1,121,164 CAN for 52,800 beneficiaries across Haiti.<sup>41</sup>

In France, there are a number of philanthropic organizations that support development projects. Western Haiti, where the capital city of Port-au-Prince is located, South, South-East, and South-West departments are the main beneficiaries of these projects. 49 per cent of such projects go to support the educational sector, either via scholarships to students or school buildings construction and reconstruction; 19 per cent are in the cultural sector in library construction and book purchases for the libraries; 12 per cent are in the health sector; another 12 per cent towards environmental projects such as villages electrification and reforestation; the remaining 8 per cent are dedicated to information campaigns. Another umbrella organization in France is the *Collectif Haïti de*

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<sup>40</sup> The eRanger project is a joint HOPE and HRDF collaboration. The HOPE project is a private-public partnership with the aim of improving small mango growers in Haiti by connecting them directly to exporters. The project is supported by the IDB, the USAID, TechnoServe, the Coca Cola Company, among others.

<sup>41</sup> For further details, see [http://www.rocahd.org/Les\\_PROJETS/01\\_projetsChiffre.asp](http://www.rocahd.org/Les_PROJETS/01_projetsChiffre.asp)

*France*, which collaborates in investment projects. One such project is the “Manman Bèf” (in Haitian Creole, Mother Cow) program under the auspices of Veterimed, a Haiti-based NGO. The Manman Bèf main objective is, through its “Lèt Agogo” project (in Haitian Creole, Milk in Abundance), to produce milk, yogurt, and other dairy products in order to lower Haiti’s dependency on the import of these goods for domestic consumption.<sup>42</sup> The *Collectif Haïti de France* claims to have invested in this project alone about 185,000 euros between 2004 and 2011, and they intend to invest more.<sup>43</sup> Initiatives of that sort there exist many; another example is Zafèn (in Haitian creole “It’s our business”), which is a social investment program administered by Fonzoze, the largest microfinance institution in Haiti. Zafèn targets retail investors in the diaspora to finance micro, small and medium enterprises in Haiti. The program has been working for two years now and has a loan portfolio of over a million US dollars.<sup>44</sup>

the Haitian diaspora contributes in many ways in establishing indirectly trade transactions between Haiti and their country of adoption, particularly for those in the US and Canada. The bulk of this trade is what Orozco (2008) coins nostalgic trade. Although it is difficult to put an exact number on the volume and value of this kind of trade, some estimation can be arrived at. Tables 8 and 9 below present, respectively, a list of nostalgic trade items US-based Haitians buy and activities Haitian migrants in general maintain in Haiti.

Tourism is another sector where the Haitian diaspora contributes substantially. About 70 per cent of the 254,732 tourists arriving to Haiti are of Haitian origin or Haitian-born (MDT, 2011),<sup>45</sup> with the US, Canada, France, and the Dominican Republic as the leading sources. The amount of money spent during each travel ranges from \$1,000 to \$ 5,000 US dollars per person. So, taking the midpoint, total spending by inbound tourists of Haitian origin is estimated at 535 million US dollars per year.

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<sup>42</sup> According to Veterimed ([www.veterimed.org](http://www.veterimed.org)), milk production in Haiti represents less than 50 per cent of domestic demand, therefore the difference is to be imported at a high cost inhibiting many from having access to this highly regarded product in the Haitian diet.

<sup>43</sup> See <http://www.collectif-haiti.fr/investissement-solidaire-vache.php>

<sup>44</sup> Interview with Katleen Felix, chairwoman of the Haitian Hometown Associations Resource Group and diaspora liaison for Fonzoze, June 15, 2012.

<sup>45</sup> MDT = Ministère du Tourisme-Haiti. Data are as of 2011. That 70 per cent figure is for stay tourists from North America, but since this region represents more than 80 per cent of all stay tourists an extrapolation of this percentage to other regions was made.

Regarding foreign direct investment (FDI), it should be pointed out first that the investment environment in Haiti is not very enabling due to security and property rights issues, and heavy bureaucracy. Haiti ranks 174<sup>th</sup> out of 183 countries in the World Bank Doing Business 2012 report, down from the 166<sup>th</sup> position in 2011. It ranks 166<sup>th</sup> in protecting investors, with a 3.0 (out of 10) strength of investors protection index. Additionally, as can be deduced from Table 6 above, Haitian migrants appear to be more professionals than entrepreneurial. All these factors may in part explain the lack of FDI flows to Haiti by its diaspora, despite the fact that they may be more inclined to invest in Haiti than other investors with no emotional tie with the country. In any case, some people believe that the Haitian diaspora have too high expectations and are too demanding when it comes to securing guarantee for their investment in Haiti. Some of them even ask multilateral organizations and the international community in general to be guarantors before they make any investment in Haiti, a privilege that entrepreneurs and local firms already operating in the country do not have.<sup>46</sup>

While the diaspora FDI in Haiti is presumably low, there is no systematic data gathering on that matter. Some initiatives that have led to direct investment are worth mentioning though.

Perhaps the most active group of Haitian investors in the diaspora to this date, by the number of sectors they cover, is SImACT (*Société Immobilière d'Agriculture, de Commerce, et de Tourisme*). SImACT is a New York based organization founded in 1996 by Haitian professionals with the aim of investing in real estate development. So far, the group has investment in various areas of economic activity in Haiti, including agriculture, financial services, mining and tourism. It has also acquired 11 per cent of *Banque de l'Union Haïtienne*. SImACT has a joint venture with Majescor Resources Ltd., a Canadian mining company, to prospect copper and gold and in Northeast Haiti, through SImACT's subsidiary SOMINE (*Société Minière du Nord Est*). Total dollar investment of SImACT in Haiti has not been disclosed, but it is believed that their investment is well in excess of 5

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<sup>46</sup> Interview with Patrick Attié vice president of the French-Haitian Chamber of Commerce, July 13, 2012.

million US dollars and is employing more than a hundred people. SOMINE seems to be wholly-owned now by Majescor Resources, the Canadian mining company. And at the time of writing, discussion is under way between the GoH and mining companies where SOMINE operates it has been proven the existence gold deposits worth potentially 20 billion US dollars.<sup>47</sup>

Yet a more recent project that will definitely have very positive impact on the Haitian economy and in which a group of Haitians in the diaspora have invested as shareholders is the E-power project. E-power, a South Korean-Haitian joint venture, is an electric utility provider in Haiti that was established in 2011 under the initiative of Haitian entrepreneurs. Under this venture E-power receives support from Korea East-West Power Corp and long term loan from the International Finance Corporation (IFC), the World Bank's private sector arm. E-power is a 59.5 million US dollar investment, 25 per cent of which coming from Haitian investors in Haiti and the diaspora. According to the company's management team, E-power generates presently a return on investment in excess of 40 per cent besides the 25 million US dollars per month it allows the GoH to save. By all standards, this 40 per cent return on investment is spectacular and this is realized despite the monopsony deal E-power has with EdH (Électricité d'Haïti), which is a state monopoly for electricity transmission across Haiti.<sup>48</sup>

Another audacious project in which the diaspora has taken part as shareholders is Oasis Group, whose flagship undertaking is Royal Oasis Hotel. Royal Oasis started as a project in 2005 and is scheduled to begin operation during the summer of 2012 in Pétiion-Ville, Haiti, catering principally to business travelers. It expects to create around one thousand direct and indirect jobs. According to a representative of the Oasis Group, the Haitian diaspora investment in Royal Oasis Hotel has been minimal since they are in general not very keen

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<sup>47</sup> The Associated Press. Martha Mendoza: Prospectors ready to tap buried gold. Published in the Miami Herald, May 18, 2012.

<sup>48</sup> This may be giving reason to one of the interviewees who sustained that some groups of the Haitian diaspora need to understand that high return and high risk are two sides of the same coin. Therefore, they should give up entirely these odd ideas of asking guarantee from the international community for their investment in their own country of origin.

in making big investment in Haiti.<sup>49</sup> Oasis Royal Hotel project has also received investment from IFC and the Clinton Bush Haiti Fund.

Yet a more ambitious project, which by all account could be considered the crown jewel development project initiated by the Haitian diaspora along with Global Renewable Energy, a US-based firm, is the La Gônave Development Authority (LGDA). The LGDA would be a 55 billion dollar project the development plan of which is based on the Hong Kong business model. The LGDA is expected to have the ability to provide employment to over 214,000 people in La Gônave and an additional 1.5 million supporting jobs on mainland Haiti. The project has been blocked or discontinued many times due to political instability in Haiti and change of governments, because every time there is new prime minister (the head of government in Haiti) the project has to be submitted again and investors have to wait for the approval of both the Executive power and the Parliament. This eventually deterred investors. Another deterrent to the realization of this project is the long and endless bureaucratic process that potential investors need to go through.<sup>50</sup> Presently, negotiations with the GoH have resumed and they are in the process of establishing the management team in Haiti to see this project through.<sup>51</sup>

An important additional source of development finance that could be explored in Haiti is the issuance of bonds tailored to potential investors in the diaspora. Countries like India and Israel have raised substantial amount of money to partly finance their development projects in the past years and there is no reason why Haiti could not take advantage of such opportunity and tap into this source of external finance, especially when the country's sovereign risk, governance and institutional capacity are not appealing to other regular non Haitian investors. The Haitian diaspora would probably be more willing to pay a premium, accepting a discount on such financial instruments compared to other non Haitian investors,

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<sup>49</sup> Interview with Philippe Jerry Tardieu, chairman and chief executive officer (CEO) of Oasis Group, July 19, 2012.

<sup>50</sup> Interview with James DeBrosse, Board of Advisors for the LGDA. July 24, 2012.

<sup>51</sup> Conversation with Fred Rice, Chairman and CEO of GRE Architect and Master Planner of LGDA. July 23, 2012.

just for the sake of patriotism.<sup>52</sup> The country's credit rating in 2011 is 162 out of 178 countries, up 5 points from last year according to Institutional Investors. The ability of Haiti to tap on this external source of finance could definitely help improve the country's credit rating. Beside the lack of confidence in the business environment, one of the factors that have been holding back investment from the diaspora is the issue of dual citizenship. The recent publication on June 19, 2012 of the amended Constitution of 1987, whereby dual citizenship is granted to Haitians who have acquired other nationality, may represent a first step toward attracting more investment from the diaspora.

## 7. Returnees

When asked, the majority of Haitian migrants will tell you that they want to return home as soon as possible. However, few are those who return home to resettle willingly. From the Haiti Living Conditions Survey (HLCS) 2001, the latest available survey, we estimated the number of returned migrants to be approximately 137,747 people, irrespective of resettlement year. Tables 10 through 16 below give an overview of the returned migrants' characteristics.

**Table 10. Percentage of returned migrants by last country of residence**

	Percentage of returned migrants
Dominican Republic	55.25
Cuba	1.50
Other Caribbean countries	6.42
USA	24.20
Canada	3.21
Latin America	1.93
France and its DOM/TOM <sup>53</sup>	5.78
Other European countries	0.86
Others	0.86

Source: Author's own calculations based on the Haiti Living Conditions Survey (HLCS) 2001.

*Note:* Data unweighted

**Table 11. Percentage of returned migrants according years spent abroad**

<sup>52</sup> Assuming that the guarantee issue is no longer a concern. For further discussion on Haitian diaspora bonds, see Gelb and Ratha (2009) and Keker and Ratha (2010).

<sup>53</sup> DOM = French Overseas Departments; TOM = French Overseas Territories.

Number of years abroad	Percentage
0	16.04
1	11.66
2	5.25
3	16.62
4	9.33
5	3.79
6	15.74
7	5.25
8	3.79
9	4.66
10	1.46
11	1.46
12	1.75
13	0.29
14	0.29
15	0.29
18	0.87
19	0.29
Do not know	0.58
Do not answer	0.59

Source: Author's own calculations based on the HLCS 2001. *Note:* Data unweighted.

**Table 12. Reason for resettling back in Haiti**

	Percentage of returned migrants
Studies completed	0.86
Job loss	1.93
Could not find a job	1.93
Could not get a work permit	2.15
Work permit expired	1.29
Did not get the residence permit	2.15
Residence permit expired	0.64
Personal reasons (family, marriage)	42.70
Was deported	17.38
Do not answer <sup>54</sup>	28.76
Do not know	0.21

Source: Author's own calculations based on the HLCS 2001. *Note:* Data unweighted

**Table 13. Percentage of returned migrants by main activity prior to resettlement**

	Percentage of returned migrants
Work	52.58
Looking for Job	10.09
Student	2.79
Domestic work	2.36
Retired/pensioner	2.36

<sup>54</sup> In this group, 48.85 per cent were residing in the Dominican Republic while 34.35 per cent returned from the USA. It is plausible to assume that their silence may well be revealing a deportation reason for returning. So, this assumption would bring the percentage of deportees to 40 per cent of total returned migrants.

Other	29.40
Do not know	0.43

Source: Author's own calculations based on the HLCS 2001. *Note:* Data unweighted

**Table 14. Percentage of returned migrants by area of economic activity<sup>55</sup>**

Agriculture and fisheries	45.88
Mining	2.35
Manufacturing	4.71
Electricity production	0.35
Construction	4.71
Trade of goods (on the local market)	18.04
Hotels and restaurants	1.96
Transport	2.75
Finance sector	1.18
Real estate	1.57
Public sector	1.96
Education	2.75
Health sector	5.49
Other community services	4.31
Other services	1.96

Source: Author's own calculations based on the HLCS 2001. *Note:* Data unweighted.

**Table 15. Percentage of returned migrants by education level**

	Percentage of returned migrants
No formal schooling	29.90
Primary completed	40.84
Secondary completed	24.84
University level	4.42

Source: Author's own calculations based on the HLCS 2001 *Note:* Data unweighted

**Table 16. Percentage of returned migrants by area of residence**

	Percentage of returned migrants
Metropolitan Area of Port-au-Prince	18.95
Semi-urban	24.84
Rural	56.21

Source: Author's own calculations based on the HLCS 2001 *Note:* Data unweighted

From Table 10 above, we see that returned migrants come mainly from the Dominican Republic and the USA. Also, the vast majority of the returnees from these two countries state personal reasons or deportation as motive for returning, or simply do not respond. While a good percentage of them are long term migrants (Table 11), their overall

<sup>55</sup> For this table only returned migrants aged between 15 and 65 years are taken into consideration, representing 79.16 per cent of the total returned migrants estimated.



characteristics may be revealing that a considerable amount of these returnees do so unwillingly, at least during the survey period (August 2001).

Focusing on those that can potentially be part of the work force (i.e. returnees between 15 and 65 years old), we see that returnees are predominantly male (more than 69 per cent) and about 68 per cent of them are active in the labor market. More than 75 per cent are self-employed and are to be found mainly in the agricultural sector and trade of goods on the local market. These are actually the two sectors of economic activity where less revenue is generated and higher vulnerability to poverty is registered. The vast majority either has no formal schooling or has only completed primary education. While no data on savings of returned migrants are recorded in this survey, it is quite plausible to assume that returnees hardly had considerable amount of savings or financial instruments upon their return, given their “choice” of economic activity of low productivity and low revenue. As regards senior returnees (i.e. more than 65 years old), the vast majority live on rent coming from their leased property. So, given the characteristics of returned migrants, we could conclude that their impact, if any, on the economy is negligible.

## **8. Concluding remarks**

This report attempted to address several issues regarding the brain drain, brain circulation and diaspora networks in Haiti. Interviews with stakeholders reveal that one of the main causes of this exodus is the mismatch between universities and vocational training centers' curricula and the derived labor demand from country's development needs. Another underlying cause mentioned by interviewees is the insecurity that pervades the country, especially in the capital city of Port-au-Prince. According to the president of the Haiti Chamber of Commerce (CCIH), the sectors that are mostly affected by this brain drain phenomenon are the health sector and that of electronics since these are probably the only fields in the country where demand for labor exceeds supply. While it has been like that for years, the market mechanism has proven incapable of filling the void by attracting and keeping in the country more workers in those two fields.

Once established in their receiving countries, Haitian migrants engage in various activities to maintain links with their communities back home. Such activities are carried out in great part by HTAs and are directed mainly towards social projects. The HTAs tend to go it alone and sometimes bypass the state institutions for various reasons, and this may have diminished the impact their actions could have had. While the HTAs' endeavors may be a source of livelihood for many households in the beneficiary communities in Haiti, redirecting these resources towards business and wealth creation could have more long lasting effect on the ability of the grantees to escape poverty, become less dependent and build resilience.

There is no specific program or measures adopted by the GoH to leverage the diaspora's scattered actions and investment in the country. One program that is presently underway is the LEAD, which is a joint initiative between PADF and USAID. LEAD uses a grant matching mechanism to leverage the diaspora's support to already existing firms in Haiti, but at the time of writing grants have yet to be assigned to selected firms. We believe that extending this program to new business creation could have substantial positive impact on the Haitian economy.

Regarding the diaspora's direct investment in the country, while there are some scattered investments that we were able to pinpoint, few are those that can be viewed as game changers in terms of quantity of resources mobilized. The diaspora seems to be reluctant in making serious investment in Haiti, advancing political instability, heavy bureaucracy and feckless politicians as the main deterrent. Meanwhile, already established entrepreneurs in Haiti tend to view some sectors of the diaspora as too demanding by placing the bar too high in terms of guarantee for their potential investment. What is true is that the promise by the *Centre de Facilitation d'Investissement* (CFI) to bring the number of days to start a business in Haiti down to one digit, as opposed to the actual 105 days needed, is long overdue. Given the sectors which Haitian migrants are present in the receiving countries, one is tempted to conclude that the Haitian diaspora may be more professionals than entrepreneur. However, their capacity to invest in business and wealth creation in their country of origin should not be underestimated and more initiatives should be taken in order to make that happen to then leverage their actions. Another untapped potential source of development finance that would be interesting to explore is diaspora bonds, which many country including India and Israel have taken advantage of to finance big development projects. Political will is probably what keeps it from happening.

## References

- Asongu, S. (2012). The Impact of Health Worker Migration on Development Dynamics: Evidence of Wealth-Effects from Africa. MPRA Paper No. 38189.
- Bhargava, A., Docquier, F., Moullan, Y. (2011). Modeling the effects of physician emigration on human development. *Econ Hum Biol.* 9(2):172-83.
- Beine, Michel, Frédéric Docquier and Hillel Rapoport (2001): “Brain Drain and Economic Growth: Theory and Evidence”, *Journal of Development Economics*, 64, 1: 275-89.
- Beine M., Defoort, C., and Rapoport H. (2005), “Skilled migration, human capital inequality and convergence”, Manuscript, Université Catholique de Louvain-La-Neuve.
- Beine, M., F. Docquier, and H. Rapoport. (2007). Measuring International Skilled Migration: New Estimates Controlling for Age of Entry. *World Bank Econ Rev* (2007) 21(2): 249-254.
- Beine, M., Docquier F. and Rapoport, H. (2008): Brain drain and human capital formation in developing countries: winners and losers, *Economic Journal*, (2008), 118: 631-652.
- Borjas, J.G. (1995). The Economic Benefits of Immigration.” *Journal of Economic Perspectives* 9 (2): 3–22.
- Cameron, C., and Trivedi, K. (1998). “Regression Analysis for Count Data.” Cambridge: Cambridge University Press.
- CEPAL (2011). *Migración Internacional en América Latina y el Caribe: Nuevas Tendencias, Nuevos Enfoques*. Martínez Pizarro, Ed.
- Chand, S., and Clemens, M.A. (2008). Skilled Emigration and Skill Creation: A quasi-experiment. Center for Global Development. WP No. 152.
- Clemens, M.A. (2010) A Labor Mobility Agenda for Development. Center for Global Development. WP No. 201.
- Clemens, Michael A., Claudio E. Montenegro, and Lant Pritchett. 2008. “The Place Premium: Wage Differences for Identical Workers across the U.S. Border.” CGD Working Paper 148. Washington, DC: Center for Global Development.
- Commander, S., M. Kangasniemi, and L. A. Winters. 2004. “The Brain Drain: A Review of Theory and Facts.” *Brussels Economic Review* 47(1):29–44.
- Commander, S., R. Chanda, M. Kangasniemi, and A. Winters (2004). “Must Skilled Migration be a Brain Drain? Evidence from the Indian Software Industry?”, IZA Discussion Paper Number 1422IZA-Bonn.

Dade, C. (2006). The Role of the Private Sector and the Diaspora in Rebuilding Haiti. In Haiti: Hope for a Fragile State. Shamsie and Thompson, editors.

Docquier, F., and Rapoport, H. (2007). Skilled Migration: The Perspective of Developing Countries. In J. Baghwati and G. Hanson eds., Skilled migration: prospects, problems and policies. New York: Russell Sage Foundation.

Docquier, F. and Marfouk, A. (2005). International migration by educational attainment (1990-2000). In Özden and Schiff (eds), International Migration, Remittances and the Brain Drain, Palgrave-Macmillan.

Fonkoze (2009). List of Haitian Associations Abroad and Support Groups from the US, Canada and France.

Gelb, A., and Ratha, D. (2009). Catalyzing private flows — Thoughts on a Pilot Structured Guarantee. World Bank, Mimeo.

Greene, W. (1994). “Accounting for Excess Zeros and Sample Selection in Poisson and Negative Binomial Regression Models.” Working paper, Stern School of Business, NYU EC-94-10.

IDB (2012). Remittances to Latina America and the Caribbean in 2011. Washington DC, USA.

IDB (2007). “Haiti Remittance Survey.”

IHSI (2010). Enquête sur l’Emploi et l’Économie Informelle. Premiers résultats de l’Enquête Emploi, Phase I. Institut Haïtien de Statistique et d’Informatique.

Jadotte, E. (2011). Chapter 8, “Vulnerability to Poverty: A Microeconometric Approach and Application to the Republic of Haiti”, in Juan Gabriel Rodríguez (ed.) Inequality of Opportunity: Theory and Measurement (Research on Economic Inequality, Volume 19), Emerald Group Publishing Limited, pp.179-216.

Jadotte, E. (2009). “International Migration, Remittances, and Labor Market Outcomes: The Case of Haiti”. UNU-WIDER Research Paper, No. 2009-28.

Jadotte, E. (2006). “Income Distribution and Poverty in the Republic of Haiti”. PMMA 2006-13, PEP WP, Université de Laval, Québec, Canada.

Kekter, S., and Ratha, D. (2010). Diaspora Bonds: Tapping the Diaspora during Difficult Times. Journal of International Commerce, Economics and Policy. Vol. 1(2): 251–263.

Lucas, Robert E.B. (2004): International migration regimes and economic development. Report for the Expert Group on Development Issues (EGDI), Swedish Ministry of Foreign Affairs.

MDT (2011). Quatrième Bulletin Trimestriel des Statistiques du Tourisme. Ministère du Tourisme. BUST II, Volume 2.

MSPP (2010). Plan Intérimaire su Secteur Santé : Avril 2010-Septembre 2011.

Mishra, P. (2007). Emigration and Brain Drain: Evidence from the Caribbean. The B.E. Journal of Economic Analysis and Policy. Volume 7, Issue 1, Article 24.

Niskanen, W.A. (1975). "Bureaucrats and Politicians." Journal of Law and Economics, i8, 617-643.

Orozco, M. (2008). Tasting identity: Trends in migrant demand for home country goods. Micronote, 56. September 30.

Orozco, M. (2006). "Understanding the Remittance Economy in Haiti." Institute for the Study of International Migration, Georgetown University.

Orozco, M., and Burgess, E. (2011). A Commitment Amidst Shared Hardship: Haitian Transnational Migrants and Remittances. Journal of Black Studies, 42 (2): 225-246.

Orozco, M., Lowell, L., Bump, M., and Fedewa, F. (2005). Remittances and their Relationship to Development in Latin America and the Caribbean. Institute for the Study of International Migration, Georgetown University

Özden, C. (2006). Educated Migrants: Is there Brain Waste? In International Migration, Remittances and the Brain Drain, Özden and Schiff, Eds.

Pregibon, D. (1980). "Goodness of Link Tests for Generalized Linear Models." Applied Statistics, 29 (1): 15-14.

Ratha, D., and Shaw, W. (2007). "South-South Migration and Remittances." World Bank Working Paper No. 102.

SICREMI (2011). Migración Internacional en las Américas. Organización de los Estados Americanos. Washington, D.C.

Stark, Oded and You Qiang Wang (2002), Inducing human capital formation: migration as a substitute for subsidies, Journal Public Economics, 86(1): 29-46.

Stark, O and D. Bloom (1985) "The New Economics of Labor Migration." American Economic Review, 75: 173-78.

United Nations (2010). Health Workers, International Migration and Development. Department of Economic and Social Affairs. Population Division. No. 2010/2/E/Rev.

UNDP (2011). Sustainability and Equity: A Better Future for All. World Development Report 2011. United Nations Development Programs.

Weiss, P. Dade, C., Maguire, R., Felix, K., Nicolas, D., Dathis, N., and Maher, K. (2009). Haitian Diaspora Associations and Their Investments in Basic Social Services in Haiti. Georgetown University. Prepared for the Inter-American Development Bank

Wolf, L. (2008). Education in Haiti: The Way Forward. PREAL, Partnership for Educational Revitalization in the Americas.

World Bank (2012). Doing Business: Haiti. The International Bank for Reconstruction and Development. Washindon, DC.

World Bank (2011). Migration and Remittances Factbook. Second Edition. Washington DC.

World Bank (2006). Haiti, Social Resilience and State Fragility in Haiti: A Country Social Analysis. Report No. 36069–HT.

WHO (2011). World Health Statistics 2011. WHO Library Cataloguing-in-Publication Data.

## **Appendix 1**

This section builds on Jadotte (2009) to provide some explanations on the emigration probability model estimated in this report. The simple model is based on the New Economics of Labor Migration (NELM) hypothesis advanced by Stark and Bloom (1985).

As we observe that many households in the dataset send more than one migrants abroad, we take advantage of the structure of the outcome variable to estimate a migration model using the count method.

Traditionally, count regression models have appealed to Poisson, which assumes equidispersion of the first and second moments (i.e. the conditional mean and the conditional variance are equal). A Poisson process for the migration ( $M$ ) equation could be represented as in Equation [1] below:

$$[1] \quad \Pr(M_i = m_i) = \frac{e^{-\lambda} \lambda^m}{m_i!}, m = 0, 1, 2, \dots, (E(M) = \lambda \text{ and } \text{Var}(M) = \lambda) \Rightarrow \text{Equidispersion}$$

A test of mean and variance comparison revealed the existence of overdispersion in the data, casting doubt on a true Poisson data generating process of the outcomes.<sup>56</sup> In fact, many households have more than one migrant. The number of households participating in migration amounts to 2124, sending between 1 and 14 close relatives abroad with the counts (0, 1, 2, 3, 4, 5) representing almost 99 per cent of the probability mass of the outcome variable. This represents about one third migration participation rate. Moreover, of those households participating in migration approximately 48 per cent of them send more than one migrant and some 24 per cent have more than 2 relatives living abroad. To account for the fact that certain households have higher counts than others, unobserved heterogeneity can be introduced in Equation [1] via a multiplicative randomness to give more variability to  $m_i$ . This can be done in the following way: let  $\zeta$  be a mixing random (or heterogeneity) variable with mean 1 and homogenous variance, i.e.  $E(\zeta) = 1$  and  $\text{Var}(\zeta) = \sigma^2$ . By substituting  $\lambda\zeta$  for  $\lambda$ , this gives rise to  $M \square \text{Poisson}(M | \lambda\zeta)$ . Then it can be shown that the conditional mean and variance are now, respectively:

$$[2] \quad E(M | \lambda, \alpha) = \lambda$$

$$[3] \quad \text{Var}(M | \lambda, \alpha) = E(M) [1 + E(M)\sigma^2] = \lambda [1 + \lambda\sigma^2]$$

which captures the idea of overdispersion (i.e.  $\text{Var}(M) > E(M)$ ). Under the assumption that  $\zeta$  follows a Gamma distribution,  $\zeta \square \text{Gamma}(1, \alpha)$ , where  $\alpha$  is the variance (dispersion) parameter of the Gamma distribution, the model can be estimated via a Gamma-Poisson

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<sup>56</sup> The overdispersion test (see Cameron and Trivedi (1998)).



mixture model, which gives rise to a type II negative binomial model,  $NB(\lambda, \alpha)$ .<sup>57</sup> Thus, under the negative binomial distribution we can posit the probability of observing a number  $m$  of migrants in household  $i$  in the following manner:

$$[4] \quad \Pr(M_i = m_i | \lambda, \alpha) = \frac{\Gamma\left(\frac{1 + \alpha m}{\alpha}\right)}{\Gamma(\alpha^{-1}) m!} \left[ \frac{\alpha}{\alpha(1 + \alpha \lambda)} \right]^{\frac{1}{\alpha}} \left( \frac{\alpha \lambda}{1 + \alpha \lambda} \right)^m \quad m = 0, 1, 2, \dots$$

where  $\Gamma(\cdot)$  is the gamma integral, with  $\ln \lambda = X' \beta$  and  $X$  a vector of covariates capturing individual, household, and regional characteristics. As can be deduced from Equation [4], when the dispersion parameter  $\alpha$  equals zero (or  $\ln \alpha = -\infty$ ) the model boils down to a standard Poisson. The preference of the negative binomial model over the Poisson was ascertained with a likelihood ratio test.

While a considerable percentage of households that participate in migration have more than one relative abroad, many households do not send migrants. This results in a large amount of zeros in the outcome variable, and these account for about two thirds of the probability mass. So, to account for the excess zero counts we estimate a zero-altered negative binomial model and contrasted with the standard negative binomial model.

To avoid cluttering notation we can drop the covariates, and now let  $f_2(\cdot)$  be the density function of the migration process posited in [4], and let  $f_1(\cdot)$  be the density of a binary process, 0 and 1, which will supplement  $f_2(\cdot)$ . Then, migration  $m_i = 0$  if the binary process takes on the value 0, while if the latter takes on the value 1  $m_i = 0, 1, 2, 3, \dots$  from the migration process density  $f_2(\cdot)$ . So, the occurrence of zeros is both in the binary and the count process, (in the latter case it is conditional on the binary taking on the value of 1,<sup>58</sup> which gives rise to a hurdle type model. Thus, the density of the zero-inflated negative

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<sup>57</sup> The type II negative binomial model arises because of the quadratic variance function as given in Equation [3]. It should be mentioned that the quadratic variance function is just one case among many that can give rise to the type II negative binomial model (see Cameron and Trivedi, 1998 & 2005).

<sup>58</sup> In the latter case it is conditional on the binary outcome taking on the value of 1.

binomial can be represented as follows:

$$[5] \quad f(m_i) = \begin{cases} f_1(0) + [1 - f_1(0)] f_2(0) & \text{if } m_i = 0 \\ [1 - f_1(0)] f_2(m_i) & \text{if } m_i \geq 1 \end{cases}$$

Here a logit model is used to parameterize  $f_1(0)$ . The variables in  $f_1(\cdot)$  and  $f_2(\cdot)$  do not overlap and  $\dim(f_1(\cdot)) < \dim(f_2(\cdot))$ . A Vuong test favoured the zero-inflated negative binomial (ZINB) model over the standard one.<sup>59</sup>

A key issue in estimating Equation [5] is the identification of the migration process. As has been established in several works in the literature, networks development reduces settlement costs (i.e. the expenses associated with migration are less onerous) and therefore makes financing the travel abroad less constraining.<sup>60</sup> Moreover, contact with individuals with a certain experience abroad provides useful information to potential migrants, resulting in lowering the risk and uncertainty that migration involves. Both regional migration rates and the presence of returned migrants in a household are used as regional and household levels network variables for identification of the migration equation.<sup>61</sup> The regional migration rate is derived by finding the ratio of the total number of migrants to the population of a particular region, while for household network we take into consideration individuals that have spent more than three months abroad and have returned. Regional migration rate is interacted with household size so as to assure the former's variability of across households. Finally, the validity of the model's specification to predict the probability of migration was also assessed using Pregibon's (1980) goodness of link test.

Wealth however may be positively correlated with contemporaneous remittances flows, raising therefore the issue of endogeneity with this variable. To try to overcome this

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<sup>59</sup> See Table 1 in the report for the result of the likelihood ratio test and the Vuong test favoring the negative binomial model over Poisson and the ZINB over the standard Negbin. For further discussion on count data models see Greene (1994) and Cameron and Trivedi (1998).

<sup>60</sup> See for instance Massey and Lindstrom (1994); Pedersen, Pytlikova, and Smith (2004).

<sup>61</sup> Correlation between these two network variables is low and the null that it is equal to zero could not be rejected at the 1 per cent level, avoiding therefore potential risk of collinearity between them.

problem we approximate wealth using households' durable goods and access to amenities (e.g. refrigerator, vehicle, running water and access to electrical network, quality of wall, floor and roof of the house, etc.) that can more likely represent a household long term economic status. The approach adopted to construct the wealth index is the principal components analysis (PCA).

## Appendix 2

**Table 2.1 Questionnaire<sup>62</sup>**

Question	
1	Level of education completed and field of studies in Haiti
2	What was the main reason why you decided to pursue post-secondary or university studies?
	a) To increase my possibilities of getting a good job in Haiti.
	b) To increase my possibilities of getting a good job outside of Haiti.
	c) Other (specify) _____
3	Follow-up question (depending on whether interviewee answered b) to question 2 or c) that leads to a follow-up question): Why have you decided to work outside of Haiti now?
4	Does your present job require the same, more or less, knowledge than what you acquired in Haiti?
USA sample (12); Canada sample (9); France sample (6); Spain sample (5)	

## Answers to questions

**Table 2.2 Question 1**

Interviewee	USA	Canada	France	Spain <sup>63</sup>
1	University (Chemistry)	University (Management Science)	University (Sociology)	University (Medicine)
2	University (Business)	University (Accounting)	University (Political Science)	University (Medicine)
3	University (Accounting)	University (Management Science)	University (Fine Arts)	University (Medicine)
4	University (Engineering)	University (Finance)	University (Journalism)	University (Medicine)
5	University (Medicine)	University (Management)	University (Law and Economics)	University (Medicine)
6	University (Ethnology)	University (Project management)	University (Psychology)	
7	University (Odontology)	University (Medicine)		
8	University (Business)	University (Computer Science)		
9	University (Law and	University (Education)		

<sup>62</sup> The author wishes to thank Ramil Julien, Elena Ovalle, and Robert Sylvain for helping with interviewees in Canada, Spain, USA, respectively.

<sup>63</sup> All the Haitian physicians interviewed in Spain received their education in Cuba under an agreement between the Haitian and the Cuban governments.

	Economics)			
10	University (Computer Science)			
11	Vocational School (Electricity)			
12	Vocational School (Masonry)			

**Table 2.3 Question 2**

Interviewee	USA	Canada	France	Spain
1	a	a	a	a
2	b	c (increase knowledge)	a	a
3	a	a	a	a
4	a	a	a	a
5	a	a	c (personal satisfaction)	a
6	a	a	a	
7	a	c (this specialization did not exist in Haiti)		
8	c (personal reasons)	c (increase knowledge)		
9	a	a		
10	a			
11	c (because of my parents)			
12	a			

**Table 2.4 Question 3**

Interviewee	USA	Canada	France	Spain
1	Too many problems in Haiti	To acquire more experience	I had to leave for political reasons	No opportunities in Haiti to practice
2	Not applicable	Bad conditions: Politics, economics and social	My life was in danger	Conditions are bad in Haiti
3	Insecurity in Haiti	Bad conditions: Politics, economics and social	No job opportunities in Haiti	Insecurity in Haiti
4	No job in Haiti	Bad conditions: Politics, economics and social	I life was threatened	I could not practice in Haiti
5	Better work conditions	Professional reasons	No job opportunities in Haiti	Insecurity in Haiti
6	No job in Haiti	To join spouse in Canada	No work	
7	Family issues	To join spouse in Canada		
8	No opportunities in Haiti	Bad conditions: Politics, economics and social		
9	No opportunities in Haiti	Bad conditions in Haiti		
10	Mentally it was too much for me in Haiti			
11	No opportunities in Haiti			
12	Bad work conditions in Haiti			

**Table 2.5 Question 4**

<b>Interviewee</b>	<b>USA</b>	<b>Canada</b>	<b>France</b>	<b>Spain</b>
<b>1</b>	Less	Less	Less	More
<b>2</b>	Less	More	Less	More
<b>3</b>	Less	Less	Same	More
<b>4</b>	Less	More	Same	More
<b>5</b>	Same	More	Less	More
<b>6</b>	Less	Same	Less	
<b>7</b>	Same	More		
<b>8</b>	Less	More		
<b>9</b>	Less	More		
<b>10</b>	More			
<b>11</b>	Less			
<b>12</b>	Less			