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Poverty in Haiti

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Pål Sletten¹ and Willy Egset²

Poverty in Haiti

Introduction

Haiti is today habitually classified as the poorest country in the Western hemisphere, and has experienced a stagnation or even decline in GDP per capita at least since the 150th anniversary of the independence in 1954. In 2004, the year when Haiti should have celebrated its 200th independence anniversary, it was briefly the focus of world media attention as Jean-Bertrand Aristide was chased from the country by armed rebels and civil unrest. Today, Haiti is run by a transition government supported by an international stabilisation force, and new elections are planned for 2005. One of the many urgent problems facing any incoming government is the widespread deep poverty the majority of Haitians live in.

This paper is an abbreviated version of a poverty profile for Haiti. The IMF and the Haitian government had agreed to a staff-monitored program (SMP) in June 2003, which would lead up to an agreement on renewed lending in the form of a Poverty Reduction and Growth Facility (PRGF) in April 2004 (IMF 2003). A PRGF would require at least an Interim Poverty Reduction Strategy Paper (I-PRSP), and a poverty profile was commissioned by the UNDP in Haiti as part of the preparations for the I-PRSP process. The whole process stopped because of

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the unrest that led to the ouster of Aristide, but the IMF and the transition government have recently agreed (June 2004) to a new SMP (IMF 2004). Furthermore, the Interim Cooperation Framework (Republic of Haiti 2004) anticipates a PRSP process as the international financial institutions begin re-engaging with Haiti. Analyses of poverty in Haiti will be necessary as an input to this work, and this paper is an attempt to contribute to this.

We begin by describing the methodology used for the poverty profile: These choices are far from innocent, and we therefore go into some detail on how we have dealt with the technical issues. We thereafter present stylised facts of poverty in Haiti; for the sake of brevity we present a limited number of tables in the paper, and give additional tables in an annex. Poverty rates in rural areas are more than twice those in the metropolitan area, and we show that income differences between rural areas and Port-au-Prince are not caused by differences in household characteristics, nor is rural poverty caused by landlessness. (See Lundahl 1979 for an in-depth analysis of Haiti's rural economy or Egset 2004 for an analysis based on recent data.) We find that poverty in Haiti presents the following three specificities compared to other countries in the region: A larger part of the population falls into poverty than elsewhere in the region; the majority of the poor live in the countryside; and finally, landlessness is not a defining feature of rural poverty in Haiti

Measuring monetary poverty in Haiti

The procedure for measuring poverty has generated a large literature (see e.g. Ravallion 1998 and Deaton 2001 for an overview of the debate). Even when agreeing on the theoretical basis – to use a monetary indicator of well-being, and use an absolute definition of poverty – a bewildering number of technical choices must be made when analysing any given data set. We will outline our own choices here in some detail, in order to facilitate comparisons.

Our starting point is to use a monetary definition of poverty, and apply the \$1 and \$2 per person per day poverty lines that are commonly used for international comparisons. As our data set does not contain consumption expenditures, we are not able to calculate a national poverty line, and the \$1 and \$2 lines provide the best solution.

The reasoning behind monetary measures is that the purchasing power of money gives a certain level of well-being through the consumption of goods and services bought for the money, under standard assumptions of utility-maximising behaviour. Poverty comparisons based on a monetary definition of poverty run in to two distinct but related problems: The problems of comparing between countries, and the problems of comparing within countries.

In order to be able to compare between countries, Purchasing Power Parity (PPP) conversion factors are normally used instead of market-based exchange rates, but this approach has been criticised for several shortcomings (Deaton 2001, Reddy 2002). There are theoretical problems surrounding the concept of PPP itself; there are problems related to the use of PPP conversion factors for converting the value of the consumption of the poorest part of the population; and there are problems related to the quality of data used for computing the PPP factors. The debate is still ongoing, and we have chosen to use the available PPP conversion factors for Haiti for our analysis; using market-based exchange rates would give far higher levels of poverty – but would presumably also render the use of \$1 and \$2 poverty lines impossible.

The second problem is that of poverty comparisons within a country: There is every reason to believe that there are large price differences within Haiti, as transportation infrastructure is poor. A person in Port-au-Prince living on \$1 per day will therefore be able to purchase a different bundle of goods and services than a person living in the inland. In order to account for these differences, we could have used the Haitian consumer price index if it had been available on the sub-national level; this is not the case, and we do not try to correct in any other way for possible price differences. At the moment, it is even impossible to say whether such corrections would lead to an increase or a decrease in poverty. The most important item in the consumption bundle of poor households would be food, and we have not seen data on whether this food is primarily imported or produced in Haiti. Imported food (such as rice) is likely to be cheaper in Port-au-Prince than elsewhere; locally produced food is likely to be cheaper in the rural areas.

The poverty lines of \$1 and \$2 per person per day are in fact lines of \$1,08 and \$2,16 1993 dollars respectively. (Chen and Ravallion 2000) Our data are on household income for the year 2000, measured in Gourdes. We use the US consumer price index to find the poverty lines in 2000 dollars, and we then use the PPP conversion factors³ for the year 2000 to convert to Gourdes, rather than the market rate⁴. We then convert this to annual figures by multiplying by 365. This gives a poverty line (\$2 per day) of 5,516 Gourdes and an extreme poverty line (\$1 per day) of 2,757 Gourdes per person per year. (These lines will in the following be referred to as H1 and H2.)

³ 5,88 Gourdes for 1 US\$. Source : World Development Indicators Online, <http://www.worldbank.org>

⁴ 21 Gourdes for 1 US\$. Source : International Monetary Fund, International Financial Statistics, <http://ifs.apdi.net/imf/>

The poverty line is thus calculated as follows:

$$H_1 = 1.08\$ \times PPP \times CPI_{1993-2000} \times 365 = 2757Gds$$

Income is measured at the household level, but the poverty line is defined on the individual level. We calculate individual income by dividing income by the number of persons in each household, i.e. we do not take into account scale economies at the household level. This would normally be done through the use of equivalence scales, but without detailed consumption data we cannot estimate these scales for Haiti, and we did not want to apply the OECD scales, as we do not know how well they fit Haiti. The implication of this choice is to increase poverty among large households – these households often have many dependants and few income earners. (See Coulter et al 1992a and 1992b for a survey of the use of equivalence scales.)

Income data have not been adjusted to match data on aggregate private consumption from the national accounts. Such adjustments are more common in Latin American income analyses than in other regions, and the reader should check whether regional poverty comparisons are based on adjusted or non-adjusted data, as non-adjusted data normally produce higher poverty rates (see Székely 2001 for regional poverty estimates using adjusted data).

The poverty profile uses data from the Haiti Living Conditions Survey (HLCS), which were supplied by the Institut Haïtien de Statistique et d'Informatique (IHSI). This multi-topic household survey was carried out over a period of 18 weeks in the period from March to July 2001, using a nationally representative sample of 7812 households. Income data were collected through a series of questions on the income of each household member, using 61 income categories and a recall period of 12 months. Income data show a reasonable correlation with other social indicators collected in the HLCS, and quality tests indicate that the data are of acceptable quality.

Studies of monetary poverty use either income or consumption data, and there are merits to both. Unfortunately, these two types of data often diverge, even when collected by the same survey. (McKay 2000: 96). Poverty estimates based on the 1999 household income and expenditure survey (Enquête Budget et Consommation des Ménages – EBCM) would diverge from the ones presented in this paper, as household consumption measured by the EBCM, is substantially higher than household income, measured by the HLCS. It seems that the most salient features of poverty in Haiti – in particular the predominance of rural poverty – are found when using the EBCM data (Pedersen and Lockwood 2001), but it would nevertheless be useful to validate the findings by analysing the discrepancies between HLCS and EBCM data further.

Poverty in Haiti: Stylised facts

The first observation to be made is that the data confirm Haiti's position as the poorest country in the Western hemisphere. Three quarters of the population are poor and over half – four and a half million persons⁵ – is extremely poor, which is a higher poverty incidence than any other country in the region, and comparable to the poorest African countries. Table 1 gives the poverty headcount index⁶ for the \$1 per day poverty line (extremely poor) and the 2 \$ per day poverty line (poor), as well as the number of persons living below these two poverty lines.

Table 1: Haitian poverty

	Poverty headcount		Number of poor and extremely poor persons		N	Uwn
	Extremely poor	Poor	Extremely poor	Poor		
Haiti	56 %	76 %	4,450,000	6,200,000	8,102,754	7,186

With 56 per cent of the population living on less than 1 \$ a day, Haiti is the poorest country in Latin America. Nicaragua has the second highest headcount index, with 45 per cent of the population living on less than 1 \$ a day, and the rest of the countries in the region have poverty levels far below that of Haiti. (Table 2) (Poverty and GDP data from UNDP 2004, Gini coefficients from World Bank 2003: 401.)

Haiti is not only the poorest country in Latin America, but also the most unequal in a region that is already the most unequal in the world (World Bank 2003). The HLCS data gives a Gini coefficient of 0.65, compared to 0.59 in Brazil, which is the second most unequal country in the region

⁵ Population estimates are based on IHSI projections for the year 2001, based on the 1987 census. The preliminary estimates from the 2002/2003 census show a slightly lower population.

⁶ See Annex A for a brief review of the poverty measures used.

Table 2: Regional comparisons

Country	Poverty headcount index (H1)	GDP per capita 2002 (PPP US\$)	Gini coefficient Per capita household income
Haiti	56	1,610	65.0
Nicaragua	45	2,470	55.9
El Salvador	31	4,890	53.2
Honduras	24	2,600	55.0
Peru	18	5,010	49.4
Ecuador	18	3,580	56.2
Guatemala	16	4,080	58.3
67	15	5,380	47.6
Paraguay	15	4,610	56.8
Bolivia	14	2,460	57.8
Trinidad and Tobago	12	9,430	49.5
Mexico	10	8,970	54.6
Colombia	8	6,370	57.6
Brazil	8	7,770	59.0
Panama	7	6,170	56.4
Argentina	3	10,880	52.2
Costa Rica	2	8,840	46.5
Chile	<2	9,820	57.1
Dominican Republic	<2	6,640	49.7
Jamaica	<2	3,980	52.0
Uruguay	<2	7,830	44.6

The majority of the poor live outside Port-au-Prince

Unsurprisingly, poverty is more widespread in rural areas than in the cities. However, the main difference appears to be between the metropolitan area and the rest of the country; other urban areas have poverty levels close to the surrounding rural areas. Since two thirds of the population live in rural areas, this means that 77 per cent of Haiti's extremely poor live in rural areas; in other words, extreme poverty in Haiti is predominantly a rural phenomenon. The income gap ratio is similar in rural and other urban areas, while it is somewhat lower in the metropolitan area. In other words, not only is a larger proportion of the population poor outside Port-au-Prince; those who are poor are on average poorer than the poor in Port-au-Prince.

A breakdown by *Département* reveals, unsurprisingly, that poverty incidence is lowest in Département Ouest, where Port-au-Prince is located, and highest in Département Nord Est, where a staggering 84 per cent of the population of 313,000 persons live on less than \$1 per day. Département Nord Est has the second highest incidence, with 72 per cent living on less than \$1 per day.

Table 3: Geographical distribution of poverty in Haiti

	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	N	Uwn
Metropolitan area	23	45	9	0.45	0.10	1,847,302	1,006
Other urban areas	57	76	14	0.58	0.33	1,118,758	1,182
Rural areas	67	88	77	0.56	0.37	5,136,695	4,998
Ouest	34	57	23	0.47	0.13	2,980,300	1,958
Sud Est	65	87	7	0.49	0.28	493,010	568
Nord	68	85	12	0.58	0.36	828,188	748
Nord Est	84	94	6	0.72	0.58	312,710	411
Artibonite	68	89	17	0.59	0.35	1,113,821	922
Centre	62	85	8	0.48	0.27	553,239	587
Sud	69	87	11	0.57	0.36	699,057	685
Grand Anse	67	88	10	0.59	0.36	691,473	706
Nord Ouest	72	92	7	0.58	0.37	430,955	601
Haiti	56	77	100	0.56	0.31	8,102,754	7,186

No clear demographic distribution of poverty in Haiti

We find that life-cycle effects on the distribution of poverty in Haiti are surprisingly small. The poverty headcount index varies from 50 in the group of households where the main provider is aged 26-35, to 59 in the group with main provider aged 46-55 (Table 4). However, this finding should be treated with caution, as it depends crucially on the procedure for calculating per capita income. We have not used equivalence scales, and households with many children will therefore have lower per capita incomes than if equivalence scales had been used⁷. As can be seen from the table, household size decreases as the age of the main provider increases.

Furthermore, income-based poverty comparisons over the life cycle are conceptually difficult. If households save or borrow to smooth consumption over the life-cycle to keep consumption constant, income data from one period only will not permit an analysis of their well-being as consumption may differ substantially from income. (This is Modigliani's permanent-income hypothesis (Modigliani 1963)). Our data do not permit an analysis of this issue, as savings are not measured. The issue of whether poverty in Haiti is different between persons of different age should therefore be investigated further, although the first indication is that age is not an important dimension of poverty.

⁷ See Annex B for additional tables on the relationship between household size and type, and poverty.

Table 4: Poverty by age of main provider

Age of main provider	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
< 25	53	72	8	0.57	0.30	4.9	708,999	646
26-35	50	72	21	0.55	0.28	5.2	1,868,552	1,542
36-45	58	78	30	0.57	0.33	5.7	2,305,939	1,766
46-55	59	79	20	0.58	0.34	5.4	1,558,917	1,320
56-65	57	80	11	0.52	0.30	4.7	903,532	925
66 +	56	79	9	0.57	0.32	3.6	756,814	987
All	56	77	100	0.56	0.31		8,102,754	7,186

We do not find important gender differences in the overall distribution of poverty. Table 5 shows poverty by sex of main provider, and while the headcount index is somewhat higher among households with a female main provider for both H1 and H2, the difference is small compared to differences between other groups. The specificities of the Haitian economy explain this finding. In rural areas it is common that the man works the land, while the woman has the responsibility for taking the produce to the market. In this case, the woman will be classified as the main provider in the HLCS dataset, although it would probably be more reasonable to see the whole household as one production unit. When examining gender differences within Port-au-Prince, we find more important differences: There, 26 per cent of households with a female main provider are extremely poor, against 17 per cent of households with a male main provider. (Additional tables available from the authors.)

Table 5: Poverty by sex of main provider

Sex of main provider	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
Male	53	75	52	0.56	0.30	5.2	4,361,462	3,812
Female	58	79	48	0.57	0.33	4.9	3,741,292	3,374
All	56	77	100	0.56	0.31		8,102,754	7,186

The poor do not have access to wage income or transfers

Haitian households derive their income from a number of sources, the most important of which are self-employment (37 per cent of aggregate household income), transfers (25 per cent), wage income (20 per cent), and self-consumption (11 per cent). This composition varies between

urban and rural areas, but the income sources of the poor are different from those of the non-poor in Port-au-Prince, other urban areas, and rural areas. Table 6 shows this breakdown⁸.

In the Metropolitan area, the main difference between non-poor and poor/extremely poor is that the non-poor obtain higher proportion of their income as wages – 30 per cent, against 14 per cent of the income of the extremely poor. The poor and extremely poor depend to a larger extent on transfers – but as their overall income is low, the non-poor receive more transfers in absolute terms. (Additional tables available from the authors.)

In other urban areas, the poor and extremely poor again draw a smaller proportion of their income as wages than the non-poor. Surprisingly, the poor and extremely poor have less access to transfers than the non-poor, both in absolute terms and as part of overall income. Instead, the poor and extremely poor depend to a large extent on self-employment and self-consumption – 55 per cent of the income of the extremely poor comes from these two sources.

The same pattern can be observed in rural areas, although here, even the non-poor depend only to a small extent on wages, and generate most of their income through self-employment. The non-poor are distinguished by a larger dependency on transfers, and a smaller dependency on self-consumption.

Table 6: Income sources by poverty status

	Haiti	Metropolitan area			Other urban areas			Rural areas		
Income sources		Extremely poor	Poor	Non-poor	Extremely poor	Poor	Non-poor	Extremely poor	Poor	Non-poor
Wage income	20	14	19	30	13	15	25	5	6	10
Transfers	25	36	31	30	23	24	35	11	11	20
Property income	3	3	4	4	2	2	2	2	2	2
Other	4	7	7	4	7	5	6	5	4	3
Self-employment	37	39	39	33	46	43	30	45	43	44
Self-consumption	11	0	1	0	9	11	3	32	34	21
Total	100	100	100	100	100	100	100	100	100	100
N	8,102,754	400,806	824,044	1023,257	629,837	839,989	278,769	338,9323	451,1227	625,468
Uwn	7,186	212	425	581	583	819	363	3065	4179	819

⁸ Note that the category “poor” consists of persons below H2, and includes the category “extremely poor”. Both categories are included in the table to show that results are robust to the choice of poverty line.

As the non-poor escape poverty by having access to wage income and transfers, households where the main provider is salaried, are less often poor than other households (Table 7). Only one million Haitians live in such households, while 4.6 million live in households where the main provider is self-employed. Households where the main provider is salaried are larger than other households – 6.8 versus 6.5 in households where the main provider is self-employed – presumably an indication that wage-earners are able to support larger households.

Note that households where the main provider is unemployed experience similar poverty rates to households where the main provider is self-employed. In fact, poverty rates are relatively similar between the three main labour market activities – employed, unemployed, and inactive – and it is only when we distinguish the category of wage-earners that we see the importance of the formal labour market for escaping poverty⁹.

Table 7: Poverty by economic activity of main provider

Economic activity of main provider	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
Salaried	28	49	5	0.47	0.13	6.8	1,020,773	731
Self-employment or employer	59	82	58	0.55	0.32	6.5	4,607,128	4,046
Other non-salaried	67	85	5	0.64	0.43	5.9	331,402	273
Unemployed	57	71	8	0.61	0.35	5.8	789,651	626
Economically inactive	62	80	24	0.60	0.37	5.7	1,568,582	1690

The level of education of the main provider has a clear impact on the risk of being poor: Of those living in households where the main provider has higher education, only 7 per cent are extremely poor, compared to 70 per cent of those living in households where the main provider has no education. The mechanisms that lead to lower poverty among persons with higher education are of course complex; persons with higher education tend to live in the Metropolitan area, be salaried rather than self-employed, and exhibit a range of other characteristics negatively correlated with poverty. Nevertheless, it seems reasonable to read the figures as confirmation that higher education is a type of human capital that can be deployed for income-generating purposes so that poverty can be avoided.

⁹ See Annex B for a table of the relationship between labour market status of main provider and poverty.

Table 8: Poverty by education of main provider

Education of main provider	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
No education	70	90	62	0.58	0.40	6.1	4,029,313	3,954
Primary	52	74	26	0.55	0.29	6.5	2,280,226	1,902
Secondary	31	54	11	0.50	0.15	6.4	1,611,776	1,218
Higher	7	20	0	0.53	0.04	5.2	181,438	112

A different type of human capital gives access to transfers. As mentioned above, transfers make up 25 per cent of aggregate household income in Haiti; of this nearly three-quarters are external transfers, coming primarily from the Haitian diaspora – *le dixième département*. As Table 9 shows, poverty rates are lower among those that have relatives abroad, and an even stronger difference exists between those that receive external transfers and those that do not: In the first group, 36 per cent are extremely poor, compared to 63 per cent in the latter. Interestingly, poverty rates are also lower among those that receive internal transfers than among those that do not – in other words; neither internal nor external transfers target the most destitute.

Table 9: Poverty and access to transfers

		Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
Relatives abroad	No	62	83	77	0.58	0.36	6.2	5,561,327	5,051
	Yes	41	63	23	0.52	0.21	6.5	2,541,427	2,135
Receives external transfers	No	63	83	82	0.58	0.37	6.3	5,857,609	5,357
	Yes	36	59	18	0.48	0.18	6.3	2,245,145	1,829
Receives internal transfers	No	59	79	77	0.58	0.37	6.3	5,934,810	5,190
	Yes	48	70	23	0.48	0.18	6.0	2,167,944	1,996

Poverty and access to (public) services

When poverty is defined by low income, the component of well-being resulting from public services is left out. Access to services such as education, roads, clean water and electricity, is in many instances more dependent on where a person lives (and in particular the functioning of the public sector in the place he or she lives), than on this person's income. At the same time, services provided in well-off neighbourhoods may be of better quality than those provided in a shantytown. The well-off have both the agency, the power and the access to make effective claims on limited state resources, which tend to be reflected in the distribution of those.

Education in Haiti is provided both by public and private schools, and access to education therefore depends to some extent on income level. However, partly because of the public schools, and partly because of schools operated by NGOs that do not charge tuition fees,

poor households do have access to education. There is nevertheless a clear difference in access; net enrolment rates for children from non-poor households are 20 percentage points higher than for children from extremely poor households in the Metropolitan area, while the difference is 17 percentage points in rural areas (Table 10). Note that in other urban areas, the difference between extremely poor and non-poor is much smaller. This could be explained by differences between the different geographical areas in the relative price of schooling. (See Lamaute-Brisson 2004 for a survey of education in Haiti.)

Table 10: Net enrolment rate in primary education by poverty status

	Metropolitan area	Other urban areas	Rural areas	Tout Haiti	N	Uwn
Extremely poor	59	72	50	54	807,594	3,629
Poor	64	74	52	56	1,080,555	4,695
Non- Poor	79	79	67	75	227,733	788
Total	72	75	53	60	1,308,288	5,483

When it comes to access to public services such as water and electricity, poverty status is a much less important determinant than place of residence. Electricity supply is available to 19 percent of the extremely poor households in Port-au-Prince, compared to only 3 per cent of the non-poor households in rural areas (Table 11). (Note that access to electricity among poor households in Port-au-Prince may often depend on illegal connections to the EdH network.) Similar patterns hold for other types of infrastructure, but the table should be read with some caution as the number of households in the sample is small: Only 471 households have access to piped water, and as the survey uses a cluster sample, standard errors are likely to be large. There appears to be some differences related to poverty status within each type of residence: In Port-au-Prince non-poor persons have better access to electricity, roads, garbage collection and phones, than do the poor. This effect is likely to be more pronounced in Port-au-Prince as infrastructure is much more developed in certain parts of the city, and because among the non-poor in Port-au-Prince income levels are so much higher that some infrastructure may be privately developed. The overall picture remains that access to infrastructure is more dependent on place of residence than on poverty status, while the opposite is the case for access to education.

Table 11: Percent of households with access to different types of infrastructure by poverty status

		Electricity supply	Road leading to house	Piped water	Collected garbage	Telephone (fixed line)
Metropolitan area	Extremely poor	19	10	2	3	1
	Poor	37	21	5	6	2
	Non- Poor	57	39	9	20	16
Other urban areas	Extremely poor	17	38	6	10	1
	Poor	26	54	9	14	2
	Non- Poor	20	26	7	10	6
Rural areas	Extremely poor	2	20	1	0	0
	Poor	4	28	1	0	0
	Non- Poor	3	7	1	0	0
Total		30	45	7	9	5
N		528,353	802,342	116,053	153,749	91,752
Uwn		1,727	3,292	471	515	303

A closer look at rural poverty in Haiti

As close to four fifths of Haiti's extremely poor live in rural areas, an understanding of rural poverty is essential for planning poverty reduction. We will try to answer two questions about the causes of rural poverty in Haiti: Is the rural population poor because of regional characteristics or because of characteristics of the population itself? And secondly, what are the determinants of income within the rural areas?

Income determinants in Haiti: Poverty in rural areas is not explained by household characteristics, but by geographical characteristics

The first question is whether people living in rural areas are poor because they live in rural areas, or because of individual and household characteristics that influence their ability to earn an income. There are rural areas in Haiti where one would expect income levels to be lower due to climatic conditions, soil erosion, lack of infrastructures, or other factors pertaining to the location, and not to the households living there. On the other hand, it is also the case that certain types of human capital are scarcer in the rural areas (e.g. educational attainments are lower among the rural population), and this could also explain the lower income levels found here. (The following draws on Ravallion and Wodon 1997.)

Note first that if households could freely choose their location in Haiti (i.e. there is "free migration"), we would expect households to move away from areas where resources and infrastructure are so scarce that incomes are lower than elsewhere, and observed poverty would only be the result of household characteristics. To some extent this is happening: There is a strong pattern of migration from rural areas to towns, and in particular to the capital. But at the

same time, there are obstacles to migration: Personal ties, imperfect information about places one could migrate to, and the risk of falling into more abject poverty after migration. It is therefore plausible that in the short and medium terms, poverty can be linked not only to people, but also to places. (See Øvensen 2004 for a survey of migration in Haiti.)

We follow Ravallion and Wodon's approach, and attempt to analyse the question by running a regression of income on a range of household variables combined with dummy variables for place of residence. The regression is specified as:

$$(1) \quad \ln(\text{inc}_{pc}) = C + \beta X + \delta D + \varepsilon$$

The dependent variable is the log of household per capita income, X is a vector of non-geographic household characteristics, and D are dummy variables specifying whether households live in Port-au-Prince, other urban areas, or rural areas. The non-geographic variables are dependency ratio, sex, age and age squared of main provider, household type, employment status of main provider, education of main provider, and number of relatives living abroad. The results of the regression are reported in Annex C. The regression fits reasonably well for this type of income analysis, with an R^2 of 0.32.

Unsurprisingly, the results indicate a very strong negative effect on income of living in rural areas; living in rural areas reduces expected income by 58 per cent compared to Port-au-Prince, all else equal. Although the estimated standard errors are large, the impact is certainly strongly negative, with the upper bound for the 95 per cent confidence interval is a reduction of expected income of 49 per cent. The coefficients on the geographical dummies are by far the largest, and we conclude that poverty in rural areas is not explained by household characteristics, but by geographical characteristics.

Income determinants in rural areas: Rural poverty is not a result of landlessness

The regression specified above imposes the same structure on the relationship between household characteristics and income for urban and rural households. This assumption is too strong, but useful for illustrating the negative impact of rural residence on income. We now run the regression on only rural households, in order to analyse the mechanisms that generate income differences in rural areas. In particular, we are interested in the impact of land ownership and access to land on income. Landlessness is often seen as one of the major causes of rural poverty, and we wish to explore whether this is the case in Haiti (Khan 2000; Griffin 1999). We therefore include an additional variable, namely the size of land owned by households.

Note first that HLCS data indicate that landlessness is uncommon in rural areas. Due to the specificities of Haiti's independence war and the development of the Haitian state, land distribution in Haiti is more egalitarian than in other countries in the region.¹⁰ Close to 80 per cent of rural households have access to land, and 70 per cent of all rural households cultivate land (Table 12). The data also show that plots are small and the distribution egalitarian.

Table 12: Access to land

Access and utilisation of plots	Ouest	Sud Est	Nord	Nord Est	Arti-bonite	Centre	Sud	Grand Anse	Nord Ouest	Rural
No access to land	38	5	24	22	16	7	16	20	12	20
Cultivation of land	49	85	65	66	76	86	75	69	82	70
No utilisation of land	4	6	7	12	6	4	6	9	5	6
Lease out all land	8	3	4	-	1	2	3	1	1	3
Unknown status	<1	<1	-	-	1	<1	<1	<1	-	<1
Total	100	100	100	100	100	100	100	100	100	100
N	252,864	104,302	130,795	405,30	185,127	102,132	136,630	129,546	100,837	1,182,762
Uwn	824	488	517	280	664	485	587	591	562	4998

In addition to the size of land, we include a dummy variable for whether there is a road to the dwelling. This may both be interpreted as a proxy for the general state of infrastructure in the area the household is living in, as well as being an indicator of the ease of access to markets for the household. Finally, we also include dummies for each Département, in order to capture other geographical differences¹¹.

The results of the regression are found in Annex C. This model fits less well than the overall model; R^2 falls to 0.21. This was to be expected: The main reason the overall model fit so well was that it captured the geographic disparities.

There are still clear geographical effects, with lower expected income in all Départements compared to Ouest; however, this effect is not significant for all Départements. This negative effect varies between 22 and 41 per cent, except for the poorest Département, Nord Est, where the expected per capita income in a rural household it is 80 per cent lower than in Ouest, all else equal. As noted above, such negative effects could be caused by a number of factors; climatic conditions, soil quality, access to markets, infrastructure, etc. Having a road to the dwelling has no significant effect on per capita household income; here, it is possible that the infrastructure effect is captured by the geographical dummies, as this type of infrastructure varies quite a lot between the Départements.

¹⁰ See Egset 2004 for an overview of the history of Haiti's land distribution.

¹¹ Rural households are found in all Départements, including Ouest, where Port-au-Prince is located

Land ownership has a modest positive impact on income in rural areas: All else equal, owning one more hectare of land increases household income by 2 per cent. However, most households own very little land – 95 per cent own less than 6 hectares, which would increase their income by 12 per cent all else equal, and 99 per cent own less than 14 hectares, corresponding to an increase of 28 per cent. The income differences caused by differences in land ownership are therefore relatively small.

Griffin (1999) argues that poverty and landlessness are linked through the rural labour market: Large landowners need to control scarce labour resources so that natural resources (land) can be exploited profitably. The landless constitute a captive work force that must work for low wages allowing landowners to retain a large share of profits. As large landowners are non-existent in Haiti, the landless cannot work on large estates, and a different labour market structure emerges. The results of the regression show that a household whose main provider is economically active is better off than households whose main provider is inactive. But the results also indicate that the tiny minority of rural households whose main provider is an employee – i.e. is working for wages – is much better off than those whose main provider is self-employed. In other words, the rural labour market is primarily a mechanism for escaping poverty, not for creating it.

Does Haiti face the same challenges as neighbouring countries?

Haiti is the poorest country in Latin America, but its poverty also presents different challenges than the ones confronting policy-makers in the rest of the region. This paper has presented a survey of poverty in Haiti, and in guise of conclusion we will list three specificities of Haitian poverty compared to poverty in the rest of Latin America.

First, Haiti is much poorer than any other country in the region. This was to be expected, as PPP-adjusted GDP per capita is less than half that of Bolivia, which has the second lowest GDP per capita in the region. However, as Haiti is also the most unequal country in the region, poverty rates are far above what is found in neighbouring countries; 56 per cent of the population live on less than \$1 per day, compared to less than 25 per cent in all other countries in the region except Nicaragua and El Salvador. Poverty is deeper and more pervasive than in the rest of Latin America.

Secondly, 77 per cent of Haiti's extremely poor live in rural areas. Griffin reports poverty data for 16 Latin American countries; in eight of these less than 50 per cent of the poor live in rural areas, for the other eight the proportion varies from 50 to 65 per cent (Griffin 1999). This

means that poverty in Haiti is to a much larger extent a rural phenomenon, and policy debates must therefore focus on rural poverty alleviation to a much larger extent than elsewhere in the region.

Thirdly, rural poverty is not caused by landlessness: About 80 per cent of rural households have access to land, and 70 per cent cultivate land. This also means that poverty is not created in the market for wage labour: Only 6 per cent of the main providers were employed by someone else, and in this small group, the incidence of extreme poverty was 20 percentage points lower than in the rest of the rural population.

Annex A: Poverty measures

We use the standard Foster-Greer-Thorbecke (FGT) poverty measures throughout the text. (Foster et al 1984) These measures are reported using both the \$1 and \$2 poverty lines.

Let n be the number of households in the population; $y = (y_1, y_2, \dots, y_n)$ a vector of household income in increasing order; z the poverty line; $q = q(y, z)$ the number of poor households. The poverty headcount index is the number falling below the poverty line divided by the number of persons in the population:

$$(A.1) \quad P_0 = H = \frac{q}{n}$$

The poverty gap takes into account not only the number of poor persons, but also how poor they are. It is defined as the distance between the income of poor households and the poverty line, divided by the total number of households in the population:

$$(A.2) \quad P_1 = PG = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]$$

The income gap ratio is defined as the mean distance between the income of poor households and the poverty line:

$$(A.3) \quad I = \frac{z - y_q}{z}, \text{ where } y_q = \frac{1}{q} \sum_{i=1}^q y_i \text{ is the mean income of poor households.}$$

We then have the following relationship between these three measures:

$$(A.4) \quad PG = I \times H$$

In addition, we also report the contribution of different subgroups to poverty. This is defined as the percentage of the poor population that belong to a given subgroup.

Annex B: Additional tables

Additional table 1: Poverty by household size

Household size	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
Single person	30	47	1	0.50	0.15	1.0	166,197	653
2-4 persons	44	68	24	0.52	0.23	3.0	2,435,670	3,147
5-6 persons	58	80	32	0.56	0.33	5.4	2,468,991	1,858
>6 persons	64	82	43	0.59	0.38	8.3	3,031,895	1,528

Additional table 2: Poverty by household type

Household type	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
Single person	30	47	1	0.50	0.15	1.0	166,197	653
Famille nucléaire	63	84	34	0.56	0.35	5.6	2,448,864	1,952
Famille monoparentale	57	78	10	0.58	0.33	4.1	767,255	837
Couple without children	39	65	1	0.51	0.20	2.0	171,910	349
Famille élargie	57	78	45	0.57	0.33	5.6	3,534,777	2,714
Famille complexe	40	62	9	0.54	0.22	6.0	1,013,751	681

Additional table 3: Poverty by labour market status of main provider

Labour market status of main provider	Poverty headcount index (H1)	Poverty headcount index (H2)	Contribution (H1)	Income gap ratio (H1)	Poverty gap (H1)	Household size	N	Uwn
Employed	54	76	68	0.55	0.29	6.5	5,723,322	4,851
Unemployed	57	71	10	0.61	0.35	5.8	789,651	626
Inactive	62	80	22	0.60	0.37	5.7	1,568,582	1,690

Annex C: Regression results

Regression 1: All Haiti, with dummies for area of residence

pweight:	relpond	Number of obs	=	7186
Strata:	stratum	Number of strata	=	23
PSU:	ucnum	Number of PSUs	=	491
		Population size	=	7186
		F(17, 452)	=	79.80
		Prob > F	=	0.0000
		R-squared	=	0.3159

logpc	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]	
res_dum2	.4228281	.0432985	-8.41	0.000	.3457586	.5170763
res_dum3	.4238457	.0356519	-10.20	0.000	.3592716	.5000259
deprat	.5039848	.0331066	-10.43	0.000	.4429528	.5734262
mpsex_rc	.9281408	.0299389	-2.31	0.021	.8711352	.9888768
mpage	.9946759	.0054503	-0.97	0.330	.9840231	1.005444
mpagesq	1.000136	.0000545	2.49	0.013	1.000029	1.000243
htype1	2.338035	.1568395	12.66	0.000	2.049288	2.667468
htype3	1.177055	.069991	2.74	0.006	1.04725	1.322948
htype4	1.64328	.1169534	6.98	0.000	1.428808	1.889945
htype5	.994008	.0407084	-0.15	0.883	.9171484	1.077309
htype6	1.120733	.0675193	1.89	0.059	.9956071	1.261585
emp1	1.690076	.1051337	8.44	0.000	1.495611	1.909826
emp2	1.244752	.0625343	4.36	0.000	1.12774	1.373905
emp3	.8861017	.0907508	-1.18	0.238	.7245712	1.083643
ed_dum2	1.403891	.0618871	7.70	0.000	1.287399	1.530925
ed_dum3	2.031049	.1458171	9.87	0.000	1.763806	2.338783
relno	1.186537	.0187481	10.82	0.000	1.150262	1.223955

Regression 2: Rural areas, same variables plus dummies for Département, access road to dwelling, and land ownership

pweight: relpond	Number of obs =	6075
Strata: stratum	Number of strata =	17
PSU: ucnun	Number of PSUs =	379
	Population size =	5425.2318
	F(25, 338) =	44.93
Subpopulation no. of obs =	4986	
Subpopulation size =	4537.3087	
	Prob > F =	0.0000
	R-squared =	0.2249

logpc	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]	
sud est	.7358543	.0875709	-2.58	0.010	.5823098	.9298857
nord	.5856707	.0736567	-4.25	0.000	.4573442	.7500043
nord est	.1966949	.0258194	-12.39	0.000	.1519442	.2546256
artibonite	.6327981	.1245806	-2.32	0.021	.4296599	.9319777
centre	.7119702	.0786588	-3.07	0.002	.5729348	.8847457
sud	.5846831	.0827746	-3.79	0.000	.4425988	.7723799
grand anse	.5716695	.0697676	-4.58	0.000	.4496911	.7267344
nord ouest	.6033087	.0877743	-3.47	0.001	.4531943	.8031466
deprat	.5233122	.0394988	-8.58	0.000	.451126	.6070491
mpsex_rc	.9590137	.0372731	-1.08	0.282	.8884459	1.035187
mpage	.9854639	.0051419	-2.81	0.005	.9754038	.9956278
mpagesq	1.000208	.0000517	4.03	0.000	1.000107	1.00031
htype1	2.23714	.1739132	10.36	0.000	1.919993	2.606674
htype3	1.110769	.0676859	1.72	0.086	.9853278	1.252179
htype4	1.75821	.1490441	6.66	0.000	1.488236	2.077157
htype5	.9914096	.0464209	-0.18	0.854	.9041979	1.087033
htype6	1.082296	.0794659	1.08	0.282	.9367814	1.250414
emp1	1.611874	.1342898	5.73	0.000	1.368287	1.898825
emp2	1.247932	.0640113	4.32	0.000	1.128192	1.38038
emp3	.7650665	.0947551	-2.16	0.031	.599684	.9760586
ed_dum2	1.376674	.0558741	7.88	0.000	1.271066	1.491057
ed_dum3	1.873491	.1754658	6.70	0.000	1.558344	2.252372
relno	1.151672	.0266528	6.10	0.000	1.100433	1.205297
plotsize	1.024781	.0089919	2.79	0.006	1.00725	1.042618
road_dum3	.952257	.0507978	-0.92	0.360	.8574224	1.057581

List of variables:

Variable code	Variable name
res_dum2	Lives in other urban areas
res_dum3	Lives in rural areas
deprat	Dependency ratio
mpsex_rc	Main provider is female
Mpage	Age of main provider
Mpagesq	Age of main provider squared
htype1	Personne seule
htype3	Famille monoparentale
htype4	Couple sans enfant
htype5	Famille élargie
htype6	Famille complexe
emp1	Main provider is employed
emp2	Main provider is self-employed
emp3	Main provider is unemployed
ed_dum2	Main provider has completed primary education
ed_dum3	Main provider has completed secondary education
relno	Number of relatives abroad
plotsize	Size of land holdings in hectares

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