Poverty and Its Determinants in Guinea-Bissau

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CHAPTER 4

Poverty and Its Determinants in Guinea-Bissau

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Given the poor economic performance of Guinea-Bissau over the last few years, including a severe recession toward the end of 2002, poverty is likely to be high and to have risen in recent years even compared to its high postconflict level. The first objective of this chapter is to estimate the share of the population in poverty in 2002, predict how it may have evolved since then, and assess the levels of growth that will be required to reduce poverty measures in the future. The chapter also provides a brief poverty profile and an analysis of the determinants of poverty using the 2002 nationally representative survey, which was recently made available for analysis. Geographic location, demographic structure (both household size and headship), employment (both in terms of sector and type), education, and migration all have potentially large effects on the consumption level and thereby poverty of households.

Political instability, a lack of investment, and the impact of the 1998 conflict on GDP per capita have led to low levels of per capita GDP and high rates of poverty in Guinea-Bissau (as discussed in Chapter 2 of this volume; see also World Bank, 2006). As will be documented in this chapter, close to two-thirds of the population live with levels of consumption per equivalent adult below a purchasing power parity adjusted at $2 per day. One in three persons in poverty today can be said to be poor because of the 1998 conflict, as argued in the second chapter of this book. Yet, there is renewed hope that the economic and political situation will improve. As the country implements its Poverty Reduction Strategy and as it benefits again from important support from donors, it will be important to search for opportunities for growth and broader policies that will lead to poverty reduction.

The objective of this chapter is twofold. In the first section, we provide estimates of poverty in 2002 and how the share of the population in poverty may have evolved since then.

20. The authors are grateful to Momar Sylla for providing the Guinea-Bissau 2002 survey data.

Simulations for the potential impact of future growth rates are also provided, showing that high growth rates will be needed for many years, if only to return to the poverty levels that would have been observed without the conflict. Then, evidence is provided on the main income sources of the population by quintile of per capita consumption and by geographic area, showing that the poor depend in large part on primary sector activities, which include cashew nuts and fishing. Because these are also sectors with potential for growth, it is argued that there is hope for implementing growth policies for the poor in the country through the promotion of these sectors.

In the second section, we provide a brief poverty profile and an analysis of the determinants of poverty using the 2002 nationally representative survey which was recently made available for analysis and three different measures of well-being on the basis of consumption, income, and wealth, respectively. Geographic location, demographic structure (both household size and headship), employment (both in terms of sector and type), education, and migration all have potentially large effects on the consumption level and thereby on the poverty of households (Lourenço-Lindell, 2002).

Poverty Estimates and Income Sources

Estimates of poverty in Guinea-Bissau are based on the 2002 ILAP survey conducted by the National Statistical Institute (the survey was actually implemented between March 2001 and April 2002). The survey's sample size is 3,216 households, of which 672 are located in Bissau and 2,544 in the rest of the country. The estimates of poverty that are provided follow the methodology used for the PRSP. Both the data used for the analysis and the methodological choices are somewhat nonstandard, so that the poverty estimates must be considered as indicative only. In the absence of better data, it is difficult to improve on the estimations in a significant way. Yet at the same time the broad conclusions that emerge from the analysis in this paper seem plausible enough to warrant attention.

Consider first the household consumption aggregate. This aggregate is based on a limited expenditure module with data obtained according to the recall method.

Some of the weaknesses of the data are apparent in Table 4.1. Across quintiles, about 40 percent of household expenditures are allocated to the purchase of food, with another 12 percent allocated to autoconsumption of food items. What is surprising is that these food consumption shares do not decrease with the overall consumption level (per capita) by household. Food consumption as a share of total consumption, in fact, increases when total consumption increases, which is rarely observed in other countries. Also, autoconsumption for energy-related expenditures appears very high, between 20 percent and 28 percent of total expenditures in the first four quintiles. It could be that the unreliable supply of electricity requires that households look for alternative sources of energy, which may indeed be costly. However, the magnitude of the estimates is very surprising, and may again suggest weaknesses in the underlying data set.

The methodology for estimating poverty is also somewhat nonstandard, again because of weaknesses in the data (a limited questionnaire on food consumption, among others). Instead of computing a poverty line based on the cost of basic needs method as is typically done, we follow the PRSP as well as previous work by Sylla (2004) in assessing the value of the international $1 and $2 poverty line in local currency units. It turns out that the extreme poverty

line corresponding to the $1 threshold is CFAF 108,000 per person per year. The poverty line corresponding to the $2 threshold is therefore CFAF 216,000. Again, following the method used for the preparation of the PRSP, the indicator of well-being on which the poverty measures are based is the consumption level per equivalent adult. Household members above 15 years of age are considered as adults, while younger members count for one half of an adult.

Household-based poverty measures suggest a head count of poverty of 58.9 percent and a head count of extreme poverty of 16.8 percent. When population weights are taken into account (that is, when we count individuals instead of households, thereby taking into account household size), the incidence of poverty is estimated at 65.7 percent, while that of extreme poverty is 21.6 percent (see Table 4.2). In what follows, we will rely mostly on population-based estimates. There are noticeable differences in the poverty measures by region. First, as expected, the share of the population in poverty is higher in rural areas (70.3 percent) than in urban areas (52.6 percent). Next, according to the survey, some 79.1 percent of the population lives in rural areas (versus 20.9 percent in urban areas). This would mean that out of the 65.7 percent of the population in poverty, 52.1 percent live in rural areas. Said differently, 79.3 (= 52.1/65.7) percent of the poor would be living in rural areas. For the extreme poor, the proportion would be even larger, since out of 21.6 percent of the population in extreme poverty, 19.0 percent live in rural areas (that is, 88 percent of the extreme poor are living in rural areas according to the survey's weights).

Table 4.1 Expenditure Shares by Quintile, 2002
(in percentage of total consumption)

Type/Quintiles	Poorest	2	3	4	Wealthiest
Food	36.24	42.08	41.64	42.55	43.00
Food (Autoconsumption)	13.20	11.62	12.91	12.95	11.83
Energy	4.19	4.09	3.99	3.91	3.42
Energy (Autoconsumption)	28.08	23.91	22.86	20.78	11.27
Education	1.30	1.27	1.26	1.35	1.49
Sanitation	4.43	3.78	3.57	3.65	4.05
Sanitation (Autoconsumption)	0.14	0.19	0.17	0.30	0.25
Health	2.37	2.81	2.75	2.55	3.30
Clothing	5.39	5.83	5.40	5.52	5.97
Accommodation	1.36	1.69	1.92	2.68	7.69
Ceremonies	2.82	2.30	3.07	3.36	5.91
Transfers	0.33	0.25	0.33	0.30	1.55
Other	0.15	0.16	0.13	0.10	0.27
Total	100.00	100.00	100.00	100.00	100.00

Source: Authors' estimates using 2002 ILAP.

There are, however, two reasons that suggest that the above estimates of the share of the extreme poor living in rural areas are overestimated. First, one could argue that part of the reason why we observe such a high concentration of poverty in rural areas is because of the fact that we use a single poverty line for poverty measurement. To the extent that the cost of living is higher in urban areas than in rural areas, we may underestimate poverty in

Table 4.2 Population-based Poverty Measures by Region and Areas, 2002

	Poverty (US$1)			Extreme Poverty (US$2)		
	P_0	P_1	P_2	P_0	P_1	P_2
Bissau	52.6	17.5	7.6	9.8	2.0	0.6
Bafata	73.2	30.5	16.0	27.2	7.5	3.1
Gabu	67.0	25.7	12.8	20.4	5.6	2.5
Cacheu	64.7	27.9	15.2	28.4	7.8	3.1
Oio	80.4	34.8	18.6	35.3	9.0	3.6
Biombo/Bolama	63.9	22.4	10.0	14.5	2.8	0.8
Quinara/Tombali	70.3	27.4	13.9	23.1	6.5	2.5
Rural areas	70.3	28.5	14.7	25.7	6.8	2.7
Urban areas	52.6	17.5	7.6	9.8	2.0	0.6
Total	65.7	25.7	12.9	21.6	5.5	2.2

Source: Authors' estimates using 2002 ILAP.

urban areas and overestimate it in rural areas. Second, some estimates indicate that only 66 percent of Guinea-Bissau's population may live in rural areas,[21] instead of 79 percent as suggested by the survey. These differences may be because of definitional issues and population dynamics and are difficult to describe given the lack of actualized data and the conflict that the country experienced in 1998. Yet overall, even if we were using different poverty lines and rural population shares, we would probably still find a much higher number of the poor in rural as compared to urban areas, as observed in other West African countries where better data have made such estimations easier.

Beyond the urban/rural comparison, Table 4.2 suggests the existence of large differences in poverty measures according to Guinea-Bissau's main regions. The coastal towns of Bissau and to a lower extent Biombo/Bolama and Cacheu have the lowest levels of poverty, whereas the interior areas of Bafata and especially Oio have much higher levels of poverty. Yet in comparison to some other Sub-Saharan African countries, and especially given the fact that we are using a common poverty line for the country as a whole, the differences in poverty between regions are in fact somewhat limited. That is, poverty seems to be widespread everywhere in the country.

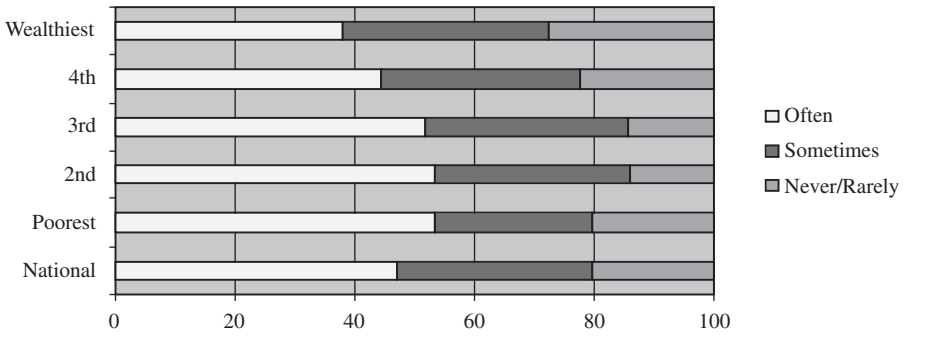
It is also worth noting that the annual consumption per capita recorded in the survey is CFAF 164,061 and the consumption per equivalent adult is CFAF 211,927. Since poverty is estimated using expenditures per equivalent adult, the value of CFAF 211,927 is the reference figure, and it is below the level of the poverty line, at CFAF 216,000. In countries such as Guinea-Bissau where the average consumption level is below the poverty line, it is clear that, broadly speaking, growth policies are key for poverty reduction, and more important than redistribution policies.

The poverty measures in Guinea-Bissau are high, in part, because of the choice of the poverty line (which is to some extent arbitrary), but mostly because of structural weaknesses in the economy and the impact of the 1998 conflict. As argued in the first chapter of the book,

21. The last population census was conducted in 1991. Current estimates are based on census data and electoral cadastre. The figures are from the U.S. Census Bureau in 2004.

up to one in three households in poverty today can be said to be poor because of the large negative impact of the conflict on GDP per capita. But even after the conflict, the situation does not seem to have improved markedly. When asked in 2001–02 whether they were better off today as compared to one year ago, some 60 percent of households responded in the negative, and the same holds for their perceptions regarding changes in well-being at the community level. There are few differences between households according to their position in the distribution of consumption in these perceptions. This means that the better off have the same negative perceptions as the poor as to changes in well-being between, say, the year 2000 and the period corresponding to the implementation of the survey. At the time of the survey, close to half of the population declared not being able to meet their food needs, with a higher such proportion in the bottom quintiles of the distribution, as would be expected (see Figure 4.1).

Figure 4.1 Problem Satisfying the Food Needs of Households by Quintile, 2002



Source: Authors' estimates using 2002 ILAP.

How may the poverty measures have changed since 2001–02? To answer this question, we must rely on a number of assumptions in the absence of better data to carry the simulations. First, we will assume that growth in consumption per adult as measured in household surveys follows GDP per capita growth closely as measured in the national accounts. Second, we will assume that growth does not change the relative prices of goods, nor that it has any effect on inequality (at the international level, there is basically no correlation between growth and changes in inequality). Under such assumptions, we may use the household level data from the 2002 ILAP survey to simulate the impact of changes in GDP between 2002 and 2005 on poverty, simply by scaling up the observed consumption levels of households in 2001–02 by the observed level of growth in real terms of per capita GDP between 2002 and 2005, and computing again the poverty measures using the same poverty line.

Real GDP contracted by 7.2 percent by the end of 2002, due in part to bad weather that led to a 15 percent fall in the production of cashew nuts and weak agricultural performance, and also probably in part to the continued suspension of donor-funded policy lending representing about 7 percent of GDP. In 2003, while agriculture grew by about 5 percent, real GDP grew by only 0.6 percent because of a contraction in other sectors and poor fiscal management (including a decision to increase the salaries of the military by more than ten-fold). Growth resumed somewhat at 2.2 percent in 2004 thanks to enhanced fiscal management and

increased donor support. But even that is not enough to reduce poverty in any meaningful way, as population growth rates, which probably had remained almost constant at 2.4 percent from 1970 to 2000, are now estimated for the period 2000–04 at 2.0 percent per year (U.S. Census Bureau 2005). Growth estimates for 2005 are not available, but it is unlikely that substantial progress have been made. In fact, a deterioration (or at least no improvement) in living standards is suggested in the results from the small scale 2005 IPSA survey. In this 2005 IPSA survey, 32 percent of the sampled households estimated that they were better off at the time of the survey than one year prior (which would correspond to 2004), versus 54 percent who said that they were worse off, and 15 percent who declared no change in well-being.

Overall, given a rate of population growth of at least 2 percent per year, there must have been a substantial decrease in GDP per capita from the early months of 2002 (the time at which the household survey was completed) until 2005. According to data from the World Development Indicator (WDI) database (World Bank 2004) and our own calculations, the decrease in per capita GDP may be of the order of 10.9 percent since 2002. Then, under the assumption mentioned above regarding the absence of relative price shifts, changes in inequality, and the link between GDP per capita and consumption per equivalent adult, the share of the population in poverty may have increased from 65.7 percent in early 2002 to 72.3 percent by the end of 2005.

What would it take to reduce poverty in the future? The same method as that used above for the projections of poverty to 2005 can be used to provide estimates of future poverty as a function of growth in per capita GDP. Table 4.3 provides the number of years that would be required with various annual GDP growth rates to achieve cumulative per capita growth rates of respectively 25 percent, 50 percent, 75 percent, and 100 percent. For simplicity, a single population growth rate was used of 2.5 percent per year, which is below the current level, but takes into account the fact that population growth will decline over time (clearly, in the long run, for some of the large number of years required in the table, the rate of population growth would decrease much more, but the exercise is provided just for giving an idea of what could be achieved in the next 10 years or so, by the 2015 deadline for reaching the Millennium Development Goals in 2015). The results suggest that if the economy were to grow at 4 percent per year, it would take 11 years to achieve a cumulative growth rate of 25 percent, which would in turn reduce the share of the population in poverty from the estimated level of 72.3 percent in 2005 to 58.8 percent by 2020. To give another example, assuming an annual growth rate of 8 percent per year of the economy, the cumulative growth rate would reach close to 75 percent by about 2015 (as shown in the Table 4.3, the number of years required is 9.6). This would in turn lead to a share of the population in poverty of about 36.4 percent. While these simulations are nothing but a number crunching exercise based on very strong assumptions, they do provide an idea of the magnitude of the challenges ahead.

The message from Table 4.3 is somewhat disheartening, as even with much higher growth rates than were observed in the recent past, Guinea-Bissau is not likely to reduce its level of poverty well below the level that would prevail today if the conflict had not taken place (this level is estimated at 43 percent for the headcount index in Chapter 2).

On the other hand, if growth were achieved in sectors in which the poor are engaged, progress toward poverty reduction could be more rapid. Table 4.4, which is also derived from the 2002 ILAP survey, provides data on the main income sources of households by quintiles of the population ranked according to consumption per capita. As will be discussed in the following section, the data on income sources are far from perfect. Yet the data clearly show,

Table 4.3 Number of Years Required to Achieve Cumulative Growth and Poverty Targets

	Share of the Population in Poverty (%)	Number of Years Required to Reach Target				
		4% Growth	5% Growth	6% Growth	7% Growth	8% Growth
Baseline estimate in 2005	72.3	—	—	—	—	—
Per capita GDP growth 25%	58.8	11.3	7.5	5.7	4.6	3.8
Per capita GDP growth 50%	47.5	20.5	13.7	10.3	8.3	7.0
Per capita GDP growth 75%	36.4	28.3	18.9	14.3	11.5	9.6
Doubling of per capita GDP	27.9	35.0	23.4	17.7	14.2	11.9

Source: Authors' estimates using 2002 ILAP.

as expected, that agricultural products and to some extent income from fishing (in the second quintile) are very important for the poor. These are precisely areas where poverty could be decreased if adequate policies were to be implemented.

In Table 4.4, a similar analysis is provided to assess differences in income sources between regions. It is useful to note that all regions are equal in terms of population size. According to the United Nations (2001), Bissau, which includes the capital city, concentrates about 25 percent of the population, followed by Oio (14.6 percent), Bafata (13.8 percent), Cacheu (13.8 percent), Quinara (4 percent), and Boloma-Bijagos (2.3 percent). Table 4.4 suggests that the share of total revenue obtained from private and public sector salaries as well as from nonagricultural products is significantly higher in Bissau than in any other region. In Table 4.5, it is evident that the regions of Bafata, Quinara/Tombali, and Oio derive the highest shares of income from agricultural products, including cashew nut production.[22] As for fish products, they are most important in the areas of Cacheu and Ohio, again two of the poorest regions in the country (Oio is the poorest region and Cacheu the fourth poorest).

Poverty Profile and Determinants of Poverty

It is standard practice to provide a poverty profile in a paper on poverty. Such a profile is a set of statistics giving the probability of being poor according to various characteristics, such as the level of education of the household head or the area in which a household lives (Coudouel and others 2002). Given that a poverty profile is already available in Sylla (2004), we provide here only a few results. In terms of demographic variables, household size is correlated with poverty, with larger households (many of whom live in rural areas) being poorer. The probability of being poor also increases with the age of the household head. In the survey, there are 2,713 male-headed and 503 female-headed households. The level of consumption per equivalent adult is higher for female-headed households than male-headed

22. Even though all these regions are also rice producers, rice farming in Bafata is more modernized than in the other regions. Whereas the other regions use mainly traditional and labor intensive methods, Bafata is a beneficiary of a Chinese pilot program, which uses a combination of animals and tractors for rice cultivation. Hence the 52 percent share of household income from agricultural products in Bafata is mainly from the sale of rice.

Table 4.4 Revenue Shares by Quintile of Per Capita Consumption, 2002

Revenue Shares by Sources, Quintiles	Poorest	2	3	4	Wealthiest
Local drinks	3.67	3.72	2.65	2.90	1.57
Livestock	2.88	2.04	4.12	2.25	1.34
Animal products	0.71	0.19	0.11	0.09	0.17
Fish products	2.57	6.84	3.38	3.31	2.73
Firewood	2.18	0.58	0.95	0.42	0.50
Salary—agric. sector	2.86	1.74	1.29	1.26	0.47
Salary—private sector	8.06	17.14	21.19	19.42	29.28
Salary—public sector	8.00	12.82	19.97	13.92	13.06
Income from equipment rentals	13.07	7.99	9.33	9.60	7.62
Pensions	0.66	1.10	0.75	0.44	1.93
Transfers	5.86	7.67	6.74	13.84	12.49
Nonagriculture	7.31	6.09	5.49	7.89	16.12
Agricultural products	42.18	32.07	24.04	24.67	12.72
Total	100.00	100.00	100.00	100.00	100.00

Source: Authors' estimation from 2002 ILAP survey.

households. Similarly, the probability of being poor at the household level is 61 percent for male-headed households versus 51 percent for female-headed households. One reason for this finding is that women have been active in the informal sector as small traders, a sector that may have been less affected by adjustment policies and the conflict than the male-dominated public sector. Also, an increasingly larger number of women in rural areas are

Table 4.5 Revenue Shares by Type of Activity and by Region, 2002

Sources	Bissau	Bafata	Gabu	Cacheu	Oio	Biombo and Bolama	Quinara and Tombali
Local drinks	1.34	1.32	0.29	6.32	2.23	7.08	3.75
Livestock	0.08	7.04	9.93	0.91	8.68	1.62	1.81
Animal products	0.00	0.45	1.15	0.47	0.26	0.27	0.10
Fish products	0.61	0.61	0.18	8.86	6.32	17.59	5.72
Firewood	0.58	0.14	0.28	0.46	3.05	0.52	0.39
Salary—agric. sector	0.66	0.35	1.83	2.18	1.54	1.44	2.29
Salary—private sector	33.15	9.58	21.59	5.19	9.15	4.64	15.48
Salary—public sector	20.92	2.78	4.52	4.78	5.05	5.84	6.27
Rentals	6.40	6.56	3.63	26.73	4.42	13.03	7.70
Pensions	2.00	0.20	0.45	0.02	0.56	0.48	0.39
Transfers	13.03	13.81	9.69	6.85	6.94	4.93	6.80
Nonagriculture	14.77	4.67	15.89	4.12	4.27	7.76	4.01
Agricultural products	6.47	52.49	30.57	33.10	47.53	34.81	45.30
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' estimation from 2002 ILAP survey.

involved in the processing of cashew nuts. According to the ministry of agriculture, the planting and processing of cashew provides work for 82 percent of the rural workforce, 49 percent of which are women.

Table 4.6 provides statistics on poverty and the distribution of the poor according to quintiles for a few employment and education variables. Consider first the distribution of the poor as compared to population shares (first six columns in table 4.6). The first column in Table 4.6 provides the population shares in the various categories. For example, 53.96 percent of the population belongs to households whose head works in the agriculture sector. Yet as expected the proportion is much higher, at 72.81 percent, for the share of population in the first quintile of consumption per equivalent adult that belongs to households with a head engaged in agriculture (in the wealthiest quintile, the proportion of the population in agricultural households is lower than the national average, at 42.05 percent).

The table also gives data on the percentage of the population with a head in various categories (last column in Table 4.6). The share of individuals in poverty is highest, at 69.6, percent among individuals who belong to a household whose head is in agriculture. Perhaps surprisingly, the poverty rate among households with a head employed in public administration is high at 56.6 percent, but this is related to the fact that a large numbers of household heads in public administration are actually working in low-skill jobs, for example as drivers, technicians, cleaning personnel, etc. Individuals in households with a head working in the private formal sector have a lower incidence of poverty, whereas those who are self-employed (private, informal) have a high incidence of poverty. Finally, there is also a correlation between the level of educational attainment of the household head and the probability for the household to be poor. The proportion of individuals living in households where the head has no education at all is highest among the bottom quintiles of the distribution of consumption, as expected. Regarding the headcount index of poverty, it is at 32 percent in households where the head has a tertiary education, a fairly high value but a rate still well below that of 71 percent among households where the head has no education at all.

Poverty profiles are informative, but they also have limits. The main drawback is that they cannot be used to assess the determinants of poverty. For example, the fact that some household group is poor (say, agricultural workers) may be due in large part to other characteristics of this group (say, the educational level of the group's members). In order to provide more insights into the determinants or correlates of poverty, we provide in Table 4.7 the results from a regression analysis of the determinants of well-being with three dependent variables: the logarithm of the per capita consumption of households (we could have used consumption per equivalent adults and this would probably not have made a large difference, except for the demographic variables); the logarithm of the income per capita of households; and the logarithm of an assets index that aims to capture the wealth of households. Separate regressions are provided for the full sample and for rural and urban areas separately. The main independent variables that are used to explain the levels of the dependent variables include: (1) family structure variables and their square (number of infants, children, and adults), (2) the characteristics of the household head (the gender of the head, the age group the head belongs to, the marital status of the head, the migration status of the head, the head's level of education, his/her employment status, his/her sector of activity, and whether he/she works in the public or private sector); (3) the region where the household is located; and (4) household access to basic services such as potable water, schools, public transportation, food markets, and health facilities.

Table 4.6 Repartition of Poverty by Group and Headcount Index for Selected Characteristics, 2002

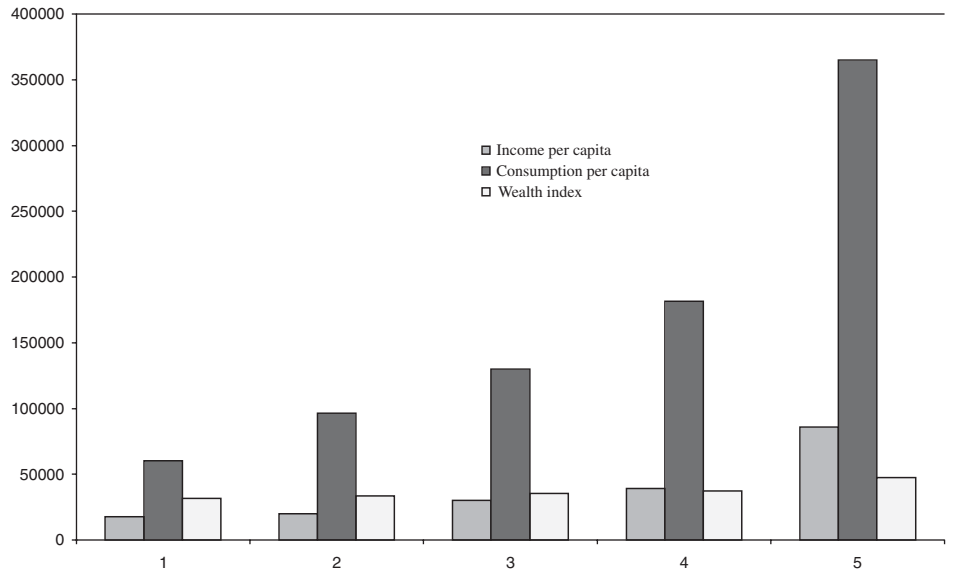
	Repartition of the Poor by Category (Column Sum is 100%)						Headcount Index of Poverty
	All	Poorest Quintile	2nd Quintile	3rd Quintile	4th Quintile	Wealthiest Quintile	
Employment sector							
Agriculture	53.96	72.81	57.36	54.19	52.71	42.05	69.60
Industry	5.66	1.52	7.63	6.19	4.52	7.29	59.30
Construction	6.45	6.77	6.32	7.27	5.38	6.66	65.80
Transport	1.67	1.01	0.63	1.75	1.85	2.49	52.90
Commerce	10.55	5.98	9.33	9.37	11.11	14.31	53.60
Services	7.13	2.94	7.71	6.76	8.31	8.36	61.80
Education	0.73	1.06	0.44	0.85	0.43	0.90	65.10
Health	0.61	0.36	0.42	0.06	0.93	1.01	49.20
Public administration	13.25	7.54	10.16	13.55	14.76	16.92	56.60
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	—
Employment type							
Public	14.90	9.99	12.15	13.87	16.16	19.14	57.90
Private formal	9.20	3.16	7.60	10.50	8.75	13.03	51.70
Private informal	75.90	86.85	80.25	75.63	75.09	67.83	67.30
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	—
Educational							
No level	58.24	69.17	63.27	60.72	55.94	48.44	71.00
Primary	24.42	23.45	25.81	24.37	24.79	23.76	65.00
Secondary	14.75	6.27	10.17	13.86	16.43	22.07	49.00
Superior	2.60	1.10	0.75	1.05	2.84	5.73	32.00
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	—

Source: Authors' estimates using 2002 ILAP.

Yet before presenting the results of the regressions, a word of caution on the data is warranted. As shown in Figure 4.2, there are large differences between the average consumption and income per capita recorded in the survey. Income per capita is clearly underestimated, in part because we do not have good data on production for autoconsumption. Hence the estimates of the impact of household characteristics on consumption per capita are probably better than those obtained for income per capita. Also, we find relatively few differences in assets between households, suggesting that those regressions probably also have limitations. Still, despite the weaknesses in the raw data, it remains useful to estimate regressions for all three measures of well-being to see if the conclusions regarding the determinants of well-being are robust across measures.

We now turn to the results in Table 4.7. Consider first the impact of demographic characteristics: an increase in the number of infants, children, or adults in a household is likely to cause a decrease in per capita consumption. To some extent, this is an automatic result since

Figure 4.2 Mean Values of Well-Being Indicators by Consumption Quintiles, 2002 (in CFAF)



Source: Authors' estimates using 2002 ILAP.

the indicator of well-being depends directly on household size. Note that the negative impact of having more adults is not statistically significant for per capita consumption in urban areas, perhaps because of better employment opportunities there so that adult members could work to meet their consumption needs. Note also that the impacts on income per capita and on assets are much weaker. In fact, a unit increase in the number of adults is expected to have a positive effect on asset accumulation (this variable is not normalized by household size).

In female-headed households in rural areas, consumption per capita and the accumulation of assets is likely to be higher than in households headed by men, all other things being equal. For example, female-headed households in rural areas have average consumption levels that are 20 percent higher than households headed by male counterparts. A similar finding is observed for the accumulation of assets, albeit to a smaller degree. This result is a clear indication that female-headed households are not necessarily worse off than households headed by males, as was already alluded to in previous sections. As for the age of the household head, in most cases the results are not statistically significant. Finally, in rural areas, consumption levels are higher for heads who are single or married (monogamous or polygamous) as compared to heads who are divorced or widowed. In urban areas however, only households headed by those who are single are likely to benefit from higher consumption levels, as compared to the other groups. The relationships between these variables and income per capita as well as assets are weaker.

Another finding from Table 4.7 is that education is key to increase consumption, income, and asset accumulation. In rural areas, consumption increases by 12 percent for heads with secondary education and by 35 percent for heads with tertiary education, as compared to heads with no education at all. In urban areas the effect is even stronger at

Table 4.7 Impact of Household Characteristics on Welfare, 2002

	Consumption Per Capita			Income Per Capita			Wealth (assets index)		
	All	Urban	Rural	All	Urban	Rural	All	Urban	Rural
Family Structure									
Number of infants	**−0.12**	**−0.18**	**−0.08**	**−0.13**	N.S.	**−0.15**	−0.024	−0.06	N.S
Number of infants sq.	**0.01**	0.02	NS	NS	NS	**0.02**	NS	NS	NS
Number of children	**−0.13**	**−0.20**	**−0.10**	**−0.19**	−0.19	**−0.19**	NS	NS	NS
Number of children sq.	**0.01**	**0.02**	**0.01**	**0.02**	NS	0.02	NS	NS	NS
Number of adults	**−0.12**	NS	**−0.16**	NS	NS	NS	0.024	0.05	NS
Number of adults sq.	**0.01**	NS	**0.01**	NS	NS	NS	NS	NS	NS
Household Head									
Head below 35	NS	NS	0.08	NS	NS	NS	0.04	NS	0.05
Head between 35 and 55	NS	NS	NS	NS	NS	NS	0.04	NS	**0.05**
Female head	0.13	NS	**0.19**	NS	NS	NS	.08	NS	**0.07**
Marital Status of Head									
Single	**0.26**	**0.35**	0.19	NS	NS	NS	NS	NS	NS
Married (monogamous)	0.01	NS	0.15	NS	NS	NS	NS	NS	0.07
Married (polygamous)	0.13	NS	0.16	NS	NS	NS	NS	NS	NS
Temporary migration									
Migrated (at least once)	**0.10**	**0.16**	**0.10**	NS	NS	NS	**0.05**	NS	**0.05**
Education of the Head									
Primary education	NS	NS	NS	NS	NS	NS	**0.06**	0.08	**0.04**
Secondary education	**0.17**	**0.24**	0.12	NS	NS	NS	**0.19**	**0.21**	**0.16**
Tertiary education	**0.51**	**0.53**	**0.35**	**0.55**	**0.70**	NS	**0.48**	**0.48**	**0.43**
Employment (Head)									
Construction/Industry	NS	NS	NS	NS	NS	NS	**0.09**	NS	**0.09**
Transport/Commerce	NS	NS	NS	**0.60**	0.46	**0.47**	**0.21**	0.15	**0.24**
Education/Health/Services	NS	NS	−0.17	**0.54**	NS	0.48	**0.17**	NS	**0.17**
Administration	NS	NS	NS	0.32	NS	NS	0.10	NS	NS
Employment (Head)									
Private sector	NS	NS	NS	NS	0.42	NS	NS	NS	NS
Business owner	NS	NS	NS	NS	NS	NS	NS	NS	NS
Access to Services									
Potable water (<15′)	−0.16	NS	NS	NS	NS	NS	NS	NS	**0.10**
Food market (<15′)	−0.11	NS	NS	**−0.51**	−0.50	**−0.50**	−0.05	NS	NS
Public transport (<15′)	**0.12**	NS	0.12	NS	NS	NS	**0.06**	**0.39**	**−0.06**
Primary school (<15′)	NS	NS	NS	0.25	0.72	NS	NS	**−0.22**	0.05
Secondary school (<15′)	NS	NS	NS	NS	NS	NS	**0.09**	NS	**0.15**
Health facility (<15′)	**0.16**	**0.25**	0.12	NS	NS	0.24	NS	NS	NS

(*continued*)

Table 4.7 Impact of Household Characteristics on Welfare, 2002 (*Continued*)

	Consumption Per Capita			Income Per Capita			Wealth (assets index)		
	All	Urban	Rural	All	Urban	Rural	All	Urban	Rural
Regional Dummies									
Bissau	**0.35**			**0.79**			**0.43**		
Bafata	**0.24**			NS			**0.13**		
Gabu	**0.27**			–0.34			**0.13**		
Cacheu	**0.15**			0.29			**0.05**		
Biobo/Bolama	**0.32**			**0.40**			NS		
Quinara/Tombali	**0.18**			NS			0.06		

Source: Authors' estimates.
Note: NS = not significant. Displayed coefficients are significant with a 10% level of confidence. Underlined coefficients are significant with a 5% level of confidence. Bold coefficients are significant with a 1% level of confidence. Omitted categories: Age Group of Household Head (aged 55 or over); Gender of Head (Male); Marital Status of Head (Divorced/Separated/Widowed); Migration Status of Head (Never Migrated); Education of Head (Never Attended); Sector of Employment of Head (Agriculture); Type of Employment (Government Employee); Access to Basic Services (30 minutes or more); Regional Dummies (Oio).

24 percent for secondary school educated heads and 53 percent for heads with tertiary education. The impact of education on the accumulation of assets is also high in both urban and rural areas for assets. In urban areas for example, asset holdings increase by 8 percent, 21 percent, and 48 percent respectively for heads with primary, secondary, and tertiary education, whereas, in rural areas, the gains are 4 percent, 16 percent, and 43 percent, respectively. The impact of education on income appears to be limited to urban areas where incomes for households with heads with tertiary education are 70 percent higher than incomes for heads with no education at all.

In contrast, the impact of the sector and type of employment is much weaker, and even surprisingly so. There are only a few statistically significant coefficients in the regressions while in many other countries more differences are observed between different types of occupations. The most notable exception to the lack of statistical significance of most coefficients is the fact that households in rural areas with heads employed in transport/commerce and education/health fields benefit from a 47 percent gain in income per capita as compared to households with heads working in the agricultural sector. In urban areas, the only sector that seems to have a large positive impact on income is transport/commerce. The results also indicate that urban household heads who work in the private sector, are likely to increase income per capita by 42 percent compared to their counterparts who work in government, but the impacts are not found to be statistically significant for consumption and assets.

Another set of variables in the regression, which clearly matters for standards of living, relates to geographic location to health and education facilities. In general, physical capital endowments of households are important determinants of poverty outcomes. Low education has a pervasive effect on poverty because in addition to its impact on income, it has significant spillover effects on other socioeconomic factors, such as the health status of children,

reproductive behavior, infant and child mortality, and employment.[23] In the case of Guinea-Bissau, living nearby a school or a health facility, and means of public transportation tend to be positively associated to consumption, income, and assets.

The role of these endowments increased as the economic recession of the 1980s became more severe. In contrast, those households who live near food markets seem to be poorer, because these tend to take place in poorer neighborhoods. What is more important is the fact that, controlling for all the characteristics discussed above, households who live in Bissau, Bafata, Gabu, Cacheu, Biombo/Bolama, and Quinara/Tombali are better of than households living in the reference category of Oio, the poorest region in the country. For example, living in Bissau is associated with a 79 percent increase in income compared to residing in Oio. More generally, the gains observed for Bissau explain much of the migration patterns observed in the country, and the fact that Bissau itself has relatively high levels of poverty probably in part because of migration.

Finally, temporary migration for more than a month in the last 12 months also leads to gains in consumption, income, and assets. This is important given that during periods of harvests, some people, particularly younger women and youth, seasonally migrate towards the rural areas of the country to offer their labor to farmers, particularly cashew producers (an activity referred to locally as *pirmi*). During this period, they set temporary residence in the country's interior, and live and work with relatives or friends. Others simply work alone, offering their services to small cashew producers. Remuneration is either in cash or in-kind, such as in cashews, and is frequently traded for rice for consumption. Many of the women also extract cashew juice, which is later transported to the cities and sold as wine, providing a major source of income during the cashew season (April to July). Temporary migration therefore serves an important livelihood purpose in rural areas. In addition, those with kin or family in urban areas with sufficient means often send their children to live with their relatives in the towns and cities to enable them to continue with their studies. Some ethnic groups also engage in seasonal migration from one rural area to another, either in pursuit of wage-labor, for trading and commerce purposes, to return to their "native lands" to engage in rice production, or to lead their livestock through transhumance toward more fertile lands. Others have emigrated from the Casamance region of Senegal and have settled indefinitely in the northern areas of Guinea-Bissau. Others again, particularly from the northern and eastern areas of Guinea-Bissau, have permanently emigrated into neighboring countries or to Europe (primarily Portugal and France) to join the ever-increasing numbers of the Guineaspora—Guineans who have left Guinea-Bissau but who remain intimately connected with their homeland in a variety of ways, including through remittances to family and friends.

Conclusion

This chapter has provided poverty measures for Guinea-Bissau as a whole and for the main regions, as well as elements for a poverty profile. Overall, Guinea-Bissau presents determinants of poverty similar to other Sub-Saharan countries: the predominance of poverty in

23. This issue is well documented in Creppy (2003).

rural areas; and the sensitivity of poverty to key household characteristics such as size, level of education, health conditions, and migration status. Some 65 percent of the population of the country may have been living in poverty in 2002, and this percentage may have risen to 72.3 percent since then. High rates of growth sustained for many years will be needed in the future to simply return to the levels of poverty that could have been observed if the 1998 conflict and subsequent political instability had not taken place. Yet if growth were promoted in the sectors where the poor are active, including in cashew production and fishing, faster gains could be achieved.

This chapter has also provided a basic poverty profile and an analysis of the determinants of well-being such as consumption, income, and assets of households. It was found that apart from geographic location, a wide range of variables affect the level of well-being of households. Higher household size is correlated with lower levels of consumption and income per capita. Households headed by women enjoy a slightly higher level of well-being. Education has an important and large positive impact on standards of living, but the impact of employment is less clear. Even if households involved in agriculture are poorer than other households, the differences in poverty levels between categories of employment are lower than expected. Temporary migration also seems to improve standards of living.

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