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Unequal Prospects:

Disparities in the Quantity and Quality of Labor Supply in Sub-Saharan Africa

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1. Summary

The starting point for analyzing labor supply in Sub-Saharan Africa is to acknowledge that there are gaping holes in the available data and that published estimates of different international agencies sometimes conflict. A large number of countries in the region have no reliable information on labor supply. Moreover, the data on countries that are covered by labor force surveys and population censuses are often based on estimates and projections that rely on guesstimates about population dynamics and the distribution of the labor force by sector, occupation, and status. In addition, there is remarkably little good quality information that would make possible an accurate monitoring of levels and trends in national HIV prevalence rates. The intersection of inadequate HIV data collection and widespread shortcomings in broader demographic data limits the ability of policymakers to understand accurately and respond effectively to labor supply issues in the region.

Nonetheless, it has been possible to piece together a coherent analytical story about the quantity dimension of labor supply in Sub-Saharan Africa. Most of the analysis in this report is drawn from a sample of 11 Sub-Saharan African countries, which together account for about 87 percent of the estimated population of Sub-Saharan Africa. The overriding theme that emerges is the striking inequalities in labor supply characteristics, both between countries and, in some ways even more important, within countries. This section concentrates particularly on variations across countries, while later sections focus more sharply on inequalities within countries.

Population size varies enormously across countries, and there are significant differences in projected population growth rates. The age structure of the population, and so the proportion of the population of working age, also varies significantly from country to country. In 2000 the estimated median age varied from 15.1 years in Uganda to 22.6 years in South Africa. While only 12 percent of Uganda's population was urban in 2003, 62 percent of Mauritanians lived in urban areas; and the urban population is projected to grow more rapidly in some countries (Kenya, Malawi, Mozambique, and Tanzania) than in others (Côte d'Ivoire, South Africa, and Zambia).

HIV/AIDS will continue to have a profound, though varying, effect on many African countries. The direct impact is especially great on girls and women. Young women (ages 15–24) are estimated to be twice as likely as young men to be living with HIV/AIDS throughout Sub-Saharan Africa, and three times as likely in South Africa. Especially where HIV prevalence is very high, the implications are complex not just for the age composition of the female labor force but also for the quantity and quality of labor supplies across generations. Meanwhile, it is extremely difficult with available data to accurately assess and predict the impact of HIV/AIDS on child labor supplies. It is also difficult to extract this impact from the varying "background" child mortality rates for uninfected children.

The proportion of children who work as a percentage of the age cohort seems to vary considerably across countries, which may suggest some scope for government policies to reduce the incidence of child labor. To some extent children's labor market participation is influenced by levels of poverty; however, other family characteristics also influence child labor supply, and these sometimes appear stronger than income levels. Furthermore, there are dramatic differences between countries in the proportion of the relevant age group that is

orphaned (less than 6 percent in Ghana but more than 12 percent in Mozambique and Uganda) as well as in the absolute numbers of orphans.

The proportion of young people in the working age population of all Sub-Saharan African countries is relatively high compared with other developing regions; this proportion is expected to remain fairly constant between 2000 and 2015, while it is projected to decline in Southeast Asia, for example. Differences in fertility rates clearly affect this phenomenon. However, it is also affected by the fact that more youths stay in education longer in other developing regions. Therefore, education policies may be effective in counteracting the effect of the relatively slow decline in fertility rates in Sub-Saharan Africa. These policies would need to focus on reducing primary school dropout rates and increasing the transition from lower to higher levels of education.

2. Cross-Country Comparative Data on Labor Supply

Despite the data limitations there is little doubt that the basic demographic characteristics that will continue to influence the supply of labor, both the absolute supply and its quality, differ very substantially across Sub-Saharan Africa. This is true not only in the trivial sense that the current working age population is, for example, about 25 times larger in Ethiopia than in Lesotho, Mauritania, or Swaziland. There are also significant differences in the recent and projected growth rates of the population and labor force. For example, between 2000 and 2005 the estimated annual rate of population growth is 3.24 percent in Uganda and higher than 2 percent in Ethiopia, Ghana, Mauritania, and Senegal, but barely positive at 0.14 percent in Lesotho and only 1.6 percent or below in Côte d'Ivoire, Kenya, Mozambique, South Africa, Swaziland, and Zambia (table 1).

Table 1: Total Population in 2003 and Population Growth Rates in 2000–05 in Sample Sub-Saharan African Countries

Country or Region	Total Population 2005 (thousands)	Annual Population Growth 2000–05 (percent) (medium variant)[a]
Côte d'Ivoire	17,165	1.62
Ethiopia	74,189	2.46
Ghana	21,833	2.17
Kenya	32,849	1.45
Lesotho	1,797	0.14
Malawi	12,572	2.01
Mauritania	3,069	2.98
Mozambique	19,495	1.75
Senegal	10,587	2.39
South Africa	45,323	0.59
Swaziland	1,087	0.80
Tanzania	38,365	1.93
Uganda	27,623	3.24
Zambia	11,043	1.16
Sub-Saharan Africa	732,510	2.28

a. Growth projections based on medium variant assumptions; see source for details.
Source: United Nations (2003).

The current age structure and, therefore, the proportion of the population of working age (defined here as the population ages 15–59) is also very different across Sub-Saharan African countries, as is the distribution of the population between rural and urban areas. For example, only 12 percent of Uganda's population was urban in 2003, compared with 62 percent of the population in Mauritania. Differences between countries in recent and projected annual rates of change in the urban proportion of the population are equally stark, with projected rates for 2005–10 of more than 2.4 percent in Kenya, Malawi, Mozambique, and Tanzania, compared with rates of about 1 percent or below in several other countries in the sample (table 2).

Table 2: Urbanization in 2003 and Projected Average Annual Rate of Urbanization in 2005–10 in Sample Sub-Saharan African Countries (percent)

Country or Region	Urban Population as Share of Total 2003	Annual Rate of Change in Urban Population 2005–10
Côte d'Ivoire	45	1.1
Ethiopia	16	1.9
Ghana	45	1.0
Kenya	40	2.4
Lesotho	18	1.2
Malawi	16	2.6
Mauritania	62	1.6
Mozambique	36	2.7
Senegal	50	1.3
South Africa	57	0.8
Swaziland	24	1.0
Tanzania	35	2.5
Uganda	12	1.1
Zambia	36	1.1
Africa (2005)	40	3.4

Note: In this and other tables numbers have been rounded from the original source.
Source: United Nations (2003).

Table 3: The Working Age Population as a Percentage of the Total Population in 2000 and Projected Dependency Ratios for 2005 in Sample Sub-Saharan African Countries

Country or Region	Working Age Population (ages 15–59) as Share of Total Population 2000	Median Age of Total Population 2000	Projected Dependency Ratio (dependents per 100 nondependents) 2005
Côte d'Ivoire	52.3	18.1	78
Ethiopia	49.5	16.9	93
Ghana	53.9	18.8	73
Kenya	52.4	17.7	76
Lesotho	52.6	18.8	79
Malawi	49.2	17.1	101
Mauritania	51.4	18.2	…
Mozambique	50.9	17.8	88
Senegal	51.8	17.6	…
South Africa	60.1	22.6	57
Swaziland	50.9	17.4	87
Tanzania	…	16.8	88
Uganda	46.2	15.1	112
Zambia	51.4	16.7	99
Sub-Saharan Africa	50.9	17.5	87
Asia (five countries)		26.1	49
Eastern Asia	64.9	30.8	
South-Central Asia	57.4	22.4	

Source: Working age and median age, United Nations (2003); dependency ratio, ILO (2004d: 74).

While most economies in Sub-Saharan Africa have a relatively large proportion of young people, reflected in a median age of 17.5 years (compared with a median age of 26 years in Asia), there is a wide disparity in median ages in individual countries. For example, the estimated median age in 2000 was 15.1 years in Uganda, 18.8 years in Ghana and Lesotho, and 22.6 years in South Africa. Thus, in several countries only a low percentage (50 percent or less) of the population is of working age. The ILO has projected the dependency ratio (dependents per 100 nondependent persons in 2005) for 35 African economies, including most of those covered in this report (table 3). Unsurprisingly, the ratio is much higher in Uganda (112) than in Ghana (73) or South Africa (57). The projected percentage increase in the population of working age over the period 2000–10 ranges from 35.6 percent in Uganda to 17.8 percent in Mozambique and 5.2 percent in Lesotho (UNCTAD 2004: table 19).

The HIV/AIDS pandemic will have a major impact on the age and sex composition and rates of growth of the population and labor force of Sub-Saharan African economies. The scale, scope, and timing of the impact on the quantity and quality of labor supplied are extremely difficult to estimate precisely, but will certainly be different in each country. The flowing subsections present evidence on the impact of HIV/AIDS on the quantity of labor supplied in different Sub-Saharan African countries, focusing in turn on the supply of prime age adults, child, and youth labor.

The Impact of HIV/AIDS on the Prime Age Adult Labor Supply

In many of the high HIV/AIDS prevalence countries in Southern Africa less than 40 percent of current survivors to age 15 will celebrate their 60th birthdays (Ngom and Clark 2003: 2).[1] For both women and men of working age higher national HIV prevalence rates increase the probability of dying between the ages of 20 and 60, but the impact on women generally occurs at younger ages and is focused on a narrow age band (Ngom and Clark 2003: 7). Thus, throughout Sub-Saharan Africa young women ages 15–24 years are twice as likely as young men to be living with HIV/AIDS (UNICEF 2004b). Recent South African data indicate even greater gender disparities, with women in this age group being three times more likely to be infected than men (Bradshaw and others 2004: 140). About a quarter of the slightly older young adult women (ages 20–24) are HIV positive in South Africa, compared with 7.6 percent of men in the same age group (RHRU 2004: 29). A smaller survey in Kenya found that more than 27 percent of girls ages 15–19 were infected with HIV while 4.6 percent of boys in the same age group were infected (Glynn and others 2001).

In high prevalence countries such as South Africa, and in areas like Kisumu, Kenya, the death of large numbers of relatively young women has important short- and medium-term implications for the age composition of female labor supplies and for the care-giving obligations of older women, who will devote years of labor to washing, feeding, and nursing the chronically ill (Steinberg and others 2002: 15). There are also important implications for the children of this large group of women, since they will receive fewer than normal years of maternal care. The implication is that the nutritional status and the quality of the future labor force will be adversely affected.[2] Children will be deprived "of those very things they need to become economically productive adults—their parents' loving care, knowledge and capacity to finance education" (Bell, Devarajan, and Gersbach 2003: 92).

These intergenerational productivity effects will probably have more obvious and serious economic consequences than those suggested by the aggregative quantitative changes in labor

supply projected by the ILO. The proportion of the total labor force that will have died as a result of HIV/AIDS by 2005 appears to be quite small in Sub-Saharan Africa as a whole (3.2 percent), according to ILO definitions of the labor force and ILO projections,[3] although this proportion is obviously much higher in some countries than in others (table 4).

There is disaggregated evidence to suggest that the risk of HIV-related death is particularly high for young women who have few years of education (UNICEF 2004b). Thus, in South Africa, among women ages 20–24, women who were HIV positive had completed significantly fewer years of education than women who were HIV negative. Condom use was much lower among rural (less educated) than urban (more educated) youth in South Africa. Higher levels of education have often been associated with condom use elsewhere in Sub-Saharan Africa (RHRU 2004: 33).[4] There is also strong evidence that the children of poorly educated mothers are at relatively high risk of malnutrition and illiteracy (Smith and Haddad 1999). The policy implication is that resources need to be focused on girls who are at risk of failing to attend school or of dropping out of school early, who are concentrated in the rural areas of Sub-Saharan Africa. Unfortunately, health and education expenditures are not currently concentrated on these rural young women (section 3); the consequences for the quality of the labor that will be supplied by their children are extremely serious.

Table 4: Estimated and Projected Labor Force Losses as a Result of HIV/AIDS, Selected Sub-Saharan African Countries

Country or Region	Estimated number of people ages 15–-64 in the labor force who are HIV positive 2003	Projected cumulative mortality losses to the labor force as a result of HIV/AIDS as a proportion of the labor force (percent) 2005
Côte d'Ivoire	399,400	5.2
Ethiopia	1,336,766	2.1
Ghana	292,297	1.5
Kenya	1,003,534	4.2
Lesotho	211,300	8.3
Malawi	737,700	6.9
Mozambique	1,128,500	2.4
South Africa	3,698,827	2.5
Swaziland	134,100	4.9
Tanzania	1,401,300	3.3
Uganda	454,242	8.4
Zambia	726,800	10.2
Sub-Saharan Africa (35 countries, weighted)	18,610,517	3.2
Asia (5 countries)	4,886,600	0.2

Source: ILO (2004d).

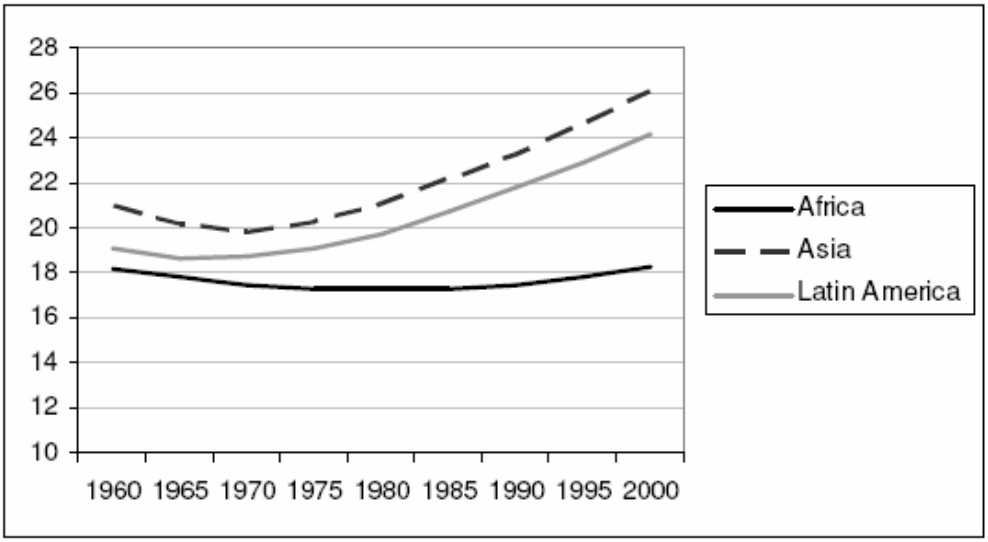
The Impact of HIV/AIDS on the Labor Supply of Youth

The relatively high proportion of young people in the working age population of all Sub-Saharan African economies compared with other developing regions has already been noted (see table 3), as have the important differences in age composition across African economies. Fertility rates in Sub-Saharan Africa are generally declining at a slower rate than in other developing regions, and the share of youth (ages 15–24) in the working age population in Sub-Saharan Africa is projected to remain more or less constant at about 36 percent between 2000 and 2015. This is a much higher share for youth than, for example, in the Southeast

Asian economies, where the share is projected to decline significantly by 2015 (UN 2003; ILO 2004c).

Despite the appalling effects of HIV/AIDS mortality on young people, especially young girls and women, the increase in the size of the youth labor force in Sub-Saharan Africa up to 2015 (28.2 percent) is still projected to be about as great as the increase in the adult (25+ years) labor force. This is in marked contrast to other developing regions, where the youth labor force will increase by less than 3 percent, compared with an increase of more than 26 percent in the adult labor force (UN 2003; ILO 2004c). The median age of the population in Africa has been lower than in Asia or Latin America since 1960, with the gap increasing over time (figure 1).

Figure 1: Median Age of the Population in Africa, Asia, and Latin America



Source: Berthélemy (2004: 25).

The slow rate of increase in the labor supply of youth in some non-African developing regions is attributable not only to more rapidly declining fertility trends there, but also to the fact that more youths are staying in school longer (ILO 2004e: 6). Therefore, in the Sub-Saharan African context, there is scope for policies to reduce the very rapid rate of growth in the number of new young entrants into the labor market. In the short to medium term a reduction in primary school dropout rates and an increase in the transition rate from lower to higher levels of the education system are the recommended supply reducing policies. These policies are much more likely to be efficient in improving the quality of youth labor supplies than attempts to “keep young people off the streets” by offering training for those who have already left school (Godfrey 2003: 18). (Some of the inefficiencies of expenditures on youth training, as well as the pro-rich bias of other policies aimed at improving the quality of young labor market entrants, are discussed in section 4).

3. The Future Quality of the Labor Force: Nutrition, Health, and Education Status

This section provides evidence on inequalities within and across countries in the distribution of education, health, and other services, emphasizing that the labor supplies in some regions and some households will have very different capacities to work productively. It makes the case for policies that prioritize the bottom 20 percent of each country's rural population, which can be identified using robust and readily available asset or welfare indicators. However, it also argues that designing appropriate, country-specific policies will require improved survey data and methods, an argument that is taken up further in section 6.[5]

Cross-Country Comparative Data: Life Expectancy, Literacy, Nutrition, and Mortality

Since productivity is partly determined by years of experience in work, relatively short working lives or a small share of older people in the population (ages 15–64; see table 3) means that low levels of life expectancy are likely to have directly adverse effects on labor productivity. Moreover, life expectancy may also be considered a good proxy for several other aspects of individuals' welfare that will influence their capacity to work productively, including their nutritional and health status (McGillivray and White 1993). Thus, it is important to emphasize the scale of differences in life expectancy across countries and to note trends in cross-country differences in the size of the gender gap in life expectancy, since this gap is likely to have important effects on the quality of future labor supplies. Similar arguments apply to differences in literacy rates across countries and to differences in the size of the gender literacy gap, although the data on literacy is generally considered to be less robust and comparable than data on life expectancy.[6]

For the period 2000–05 the range of estimated female life expectancy across African countries is huge—from about 30 years to about 60 years—and women can expect to live four to five years longer than men in some countries, while in others life expectancies are about the same for men and women (UN 2003). By 2010–15 according to United Nations Population Division estimates, these significant differences between countries are projected to increase. For example, female life expectancy in Ghana will be more than 33 years longer than in Swaziland and female life expectancy will have fallen below male life expectancy in several countries.

These differences across countries may be explained in part by the differential prevalence and stages of HIV/AIDS (see section 2), but there are other indicators of women's status that also vary dramatically and are not closely correlated with national HIV/AIDS statistics. For example, in 2000 over half of young women were illiterate in Ethiopia, Mauritania, Mozambique, and Senegal, while less than 15 percent were in Ghana, Kenya, Lesotho, South Africa, Swaziland, Tanzania, and Zambia (UNESCO 2004).[7] It is safe to predict that the children of illiterate mothers will face higher risks of undernutrition, illness, and inadequate schooling; they will enroll in school later, leave at an earlier age, and perform more poorly on educational attainment tests (Morrisson 2002: 10; Filmer 2003); and as a consequence, their labor productivity will be low.

The scale of the difference in predicted outcomes for children born in different Sub-Saharan African countries is reflected in comparative data on child nutrition and survival rates (table 5). Many studies have demonstrated associations between undernutrition and growth retardation, impaired mental development, and increased susceptibility to infectious diseases

(Caulfield, Richard, and Black 2004: 2004). In addition, micro-level evidence demonstrates a significant relationship between the nutritional status of preschoolers and the number of years of schooling they can complete, as well as their labor productivity as adults (Alderman, Hoddinott, and Kinsey 2003).

Table 5: Current Under-Five Malnutrition and Mortality Rates and Recent Reductions in Mortality Rates in Sample Sub-Saharan African Countries

	Proportion of Children Under Five Suffering from (1995–2002)		Under-Five Mortality Rate (2002)	Mortality Rate (percent)	
Country or Region	Severe Underweight	Moderate or Severe Stunting		Average Annual Rate of Reduction 1990–2002	Reduction Since 1990
Côte d'Ivoire	5	25	176	–1.1	–14
Ethiopia	16	52	171	1.5	16
Ghana	5	26	100	1.9	21
Kenya	6	35	122	–1.9	–26
Lesotho	3	12	87	2.7	28
Malawi	6	49	183	2.3	24
Mauritania	10	35	183	0.0	0
Mozambique	—	44	197	1.5	16
Senegal	6	25	138	0.6	7
South Africa	2	25	65	–0.7	–8
Swaziland	2	30	149	–2.5	–35
Uganda	5	39	141	1.1	12
Tanzania	7	44	165	–0.1	–1
Zambia	7	47	192	–0.1	–2
Sub-Saharan Africa (35 countries, weighted)	8	38	174	0.3	3
South Asia	17	44	97	2.3	24

— is not available
Source: UNICEF (2004a).

Sub-Saharan Africa's development experience since 1945 is often unfavorably compared with the development performance of certain East Asian and Latin American developing economies. Such comparisons too often ignore the fact that the starting points for improvements in human development and labor productivity were by no means comparable, suggesting that considerable caution should be applied before assuming that all Sub-Saharan economies should or could have replicated some of the post-war successes of the newly industrialized countries (Sender 1999: 92; Platteau 1996).

Differentials in Education and Health Status within Countries

If appropriate policies are to be developed, it is not sufficient to highlight enduring disparities in the growth rates of labor supply and in the quality of labor available in different Sub-Saharan economies. It is also necessary to emphasize the degree of differentiation within each economy. A focus on such differences may avoid the dangers of crude Africawide policy prescriptions for improving the quality of labor supply. It might also support arguments for reallocating official development assistance toward particularly vulnerable countries in Africa, ending the trend bias in the 1990s away from the poorest countries (White 2002: 12).

Inequalities in several indicators of human welfare are far greater in rural than in urban areas. For example, the Theil index of education inequality, based on attainment data (the ultimate year of schooling for the population of working age, here defined as ages 15–40), is much higher in the rural than in urban areas of all countries in the sample (table 6).[8] Rural inequality in education attainment is generally high, but far greater in some countries than in

others. Similarly, indicators of the health status of rural and urban populations show significant variations in the size of rural-urban gaps. Theil indices confirm that rural inequality in health is far worse in some countries than in others (table 7).[9]

Table 6: Inequalities in Educational Attainment in Sample Sub-Saharan African Countries, Various Years

Country	Percentage without Any School				Theil Inequality Measure		
(date of DHS)	National	Rural	Urban	Gini Index	National	Rural	Urban
Côte d'Ivoire (1994)	48	57.3	36	0.622	0.777	0.978	0.553
Ghana (1998)	21.1	26.9	11.1	0.378	0.318	0.397	0.185
Kenya (1998)	6.3	7	4.3	0.253	0.135	0.142	0.096
Malawi (1992)	33.2	36.6	14.3	0.522	0.537	0.587	0.245
Mozambique (1997)	33.5	40.8	13.5	0.547	0.582	0.686	0.264
Senegal (1992)	64.3	83.9	38.4	0.796	1.551	2.654	0.871
Tanzania (1999)	18.2	21.8	8.7	0.305	0.265	0.303	0.163
Uganda (1995)	22.2	24.8	8.1	0.431	0.37	0.399	0.168
Zambia (1996)	9.7	15.2	3.1	0.305	0.193	0.259	0.097

Source: Sahn and Stifel (2004: 24).

Table 7: Rural and Urban Health Inequality in Sample Sub-Saharan African Countries, Various Years

Country (date of DHS)	Gini Index	Theil Measure (NCHS adjusted)	Rural Theil Measure (NCHS adjusted)	Urban Theil Measure (NCHS adjusted)
Côte d'Ivoire (1994)	0.034	1.241	1.4337	0.7108
Ghana (1998)	0.0331	1.0964	1.1325	0.8554
Kenya (1998)	0.0379	1.759	1.7229	1.6867
Malawi (1992)	0.0356	1.4337	1.4096	1.2048
Mozambique (1997)	0.0383	1.8072	1.9036	1.4096
Senegal (1992)	0.0339	1.2169	1.3373	0.8193
Tanzania (1999)	0.032	0.9639	1.012	0.4578
Uganda (1995)	0.0346	1.3735	1.3976	1
Zambia (1996)	0.0355	1.4217	1.5904	1

Note: Health status data have been standardized based on U.S. National Center for Health Statistics (NCHS) values for a healthy population.
Source: Sahn and Stifel (2004: 25).

The data showing large disparities across countries in measures of health and education status, as well as very different patterns and degrees of inequality, derive from research that does not attempt to analyze correlations between education or health status and income or other indicators of social stratification. However, the gaps between the health and education status of poor and better-off households in Sub-Saharan Africa are very substantial and the asset/expenditure levels of African households do appear to be a good, if not perfect, predictor of the health and education status of household members (Houweling, Kunst, and Mackenbach 2003; Gwatkin and Rutstein 2000; Filmer and Pritchett 2001). The prospects for the supply of educated and productive labor, including the domestic labor of women who have the capacity to improve the nutritional status of their children, differ a great deal between different types of households in each Sub-Saharan African economy.

The case for a policy focus on improving the quality of labor supplied by the poorest rural households is reinforced when the growing problem of orphaned children (highlighted in section 2) is considered. Orphaned children, on average, live in poorer households than

nonorphans and are more likely to live in households headed by women or less well educated men. Although the low levels of education achieved by orphans is not due solely to their relative poverty (Case, Paxson, and Abledinger 2002: 3; 22; 29–30), research based on longitudinal survey results stresses that parental deaths have very different impacts across socioeconomic groups (Evans and Miguel 2004: 18). Orphans living in poor households are likely to receive significantly less education than other children. When they enter the labor market, their lack of basic literacy and numeracy is likely to confine them to poorly remunerated segments of the market.

As well as orphans, the children of women who become pregnant as teenagers are also likely to complete few years of schooling and to enter poorly remunerated forms of employment. They are at risk partly because their mothers are likely to have had so little success in the labor market (Sender 2002; Sender, Ova, and Cramer 2004). Both teenage pregnancy and child stunting are much more likely to occur in the poorest 20 percent of households than in the richest in all of the sample Sub-Saharan countries for which data are available (table 8). The labor productivity of women ages 15–49 in the poorest 20 percent of households is likely to be much lower than that of women in the richest 20 percent. This likely occurs in part because these women are more likely to be malnourished (a body mass index of less than 18.5).

There is also evidence to suggest that high total fertility rates have adverse consequences for women’s labor market performance, limiting women's mobility in labor markets, the total number of years of work experience they can gain, and therefore, their wages (Sender 2003: 37; Joshi, Paci, and Waldfogel 1999: 556). In some countries women in the poorest 20 percent of households have total fertility rates well over twice as high as those of women in the richest 20 percent (table 8). The poorest women are also likely to run higher risks of neonatal mortality: they are far less likely than women in richer households to get adequate antenatal care or to have births attended by medically trained personnel (Population Reference Bureau 2004: 2). It has been suggested that African children whose mothers received antenatal care are generally healthier (taller) and do better at school (Morrisson 2002: 9).

Table 8: Selected Indicators of Fertility and Health for Women and Children in the Richest and Poorest Households in Sample Sub-Saharan African Countries (percent unless otherwise indicated)

	Women Ages 15–19 Giving Birth in One Year		Children Moderately and Severely Stunted		Malnourished Women		Total Fertility Rate (lifetime births per women)	
Country	Poorest Fifth	Richest Fifth	Poorest Fifth	Richest Fifth	Poorest Fifth	Richest Fifth	Poorest Fifth	Richest Fifth
Côte d'Ivoire	19	7	34	13	11	6	6.4	3.7
Ethiopia	8	7	53	43	32	25	6.3	3.6
Ghana	13	2	35	10	18	5	6.3	2.4
Kenya	16	6	44	17	18	6	6.5	3.0
Malawi	19	14	58	34	10	6	7.1	4.8
Mauritania	9	5	39	23	17	9	5.4	3.5
Mozambique	19	13	48	22	17	4	5.2	4.4
Senegal	15	4	—	—	—	—	7.4	3.6
South Africa	11	2	—	—	—	—	4.8	1.9
Tanzania	20	8	50	23	12[a]	7[a]	7.8	3.4
Uganda	23	11	43	25	15	5	8.5	4.1
Zambia	19	9	54	32	9	4	7.3	3.6

— is not available
a. 1995–97 DHS (other Tanzanian data from 1999).
Source: Population Reference Bureau (2004:2).

Policy Implications

These trends in life expectancy, education, and health suggest very strongly the need to avoid Africawide policy prescriptions and to reallocate aid flows toward especially vulnerable countries. However, policy design also has to address the substantial inequalities within countries in the distribution of education, health, and other services. The degree of inequality in education attainment, for example, is much higher within rural than urban areas of all countries in our sample. This rural education inequality is also much sharper in some countries (Senegal, for example) than in others. There is an almost complete lack of education opportunities for poor girls in countries like Côte d'Ivoire, Ethiopia, Mozambique, and Senegal, though in some countries poorer girls are more likely to get a basic education. Much the same is true of the distribution of health services.

There is thus a strong case for prioritizing resource allocations toward tackling health and education provision for the poorest rural people. There is also an urgent need to implement policy initiatives to keep children and orphans, especially those living in poorer households, in school. Meanwhile, evidence of the poor health and education status of children of women who become pregnant as teenagers suggests another focus for policy initiatives, to overcome intergenerational traps of poverty and low productivity.

A further implication of the trends highlighted in this section is that effective policy design for improving the prospects for the quality of the labor supply will require more focused empirical research, based on purposive sampling of the poorest 20 percent of the population. This point is taken up in section 6.

4. Improving the Quality of Labor Supply: Constraints and Policy Opportunities

The quality of labor supplied in each Sub-Saharan African economy will be influenced by the capacity to educate and to improve the health and skills of the next generation of workers. This section examines these three aspects of labor quality, beginning with a discussion of capacity constraints in the education sector.[10]

The future quality of African labor will also depend on how the HIV/AIDS epidemic affects the skill composition of the labor force. There is some evidence that HIV prevalence rates differ substantially across skill groups in the labor force and that the epidemic will have a differential impact on labor force growth by skill category. Given the current skill composition of the labor force, projected labor supply losses at lower skill levels far exceed losses at higher skill levels, although the epidemic is also anticipated to exacerbate skills shortages in the region. However, the empirical basis for these projections remains extremely weak (Bennell 2003a).

It is not possible to relate national prevalence data to important socioeconomic status indicators, including indicators of employment status, job categories, sectors of employment, levels of education, training, and work experience (Booysen, Geldenhuys, and Marinkov 2003: 11). In part, the difficulty arises because of a more general problem with labor force surveys that collect only limited information on the work performed by the working age population throughout the year, before lumping them into predetermined, crudely dichotomous categories and sectors. The problem is exacerbated because DHS questionnaires fail to collect sufficient information on the types of work done by HIV positive and negative household members in different socioeconomic strata. As a result, the precise impact of HIV/AIDS on the quality of the labor force, especially on those working in the very large, unenumerated sector in African economies, is poorly understood.

Teachers and Conditional Cash Transfers for Schooling

According to potential employers, new entrants to the labor force require the basic literacy and numeracy ability essential for rapidly acquiring the skills to do their jobs (Godfrey 2003: 13). The capacity to provide such education in schools depends, in part, on the local severity of the HIV/AIDS epidemic and on enrollment and completion rates, which may be affected by several factors, including the available supply of teachers.

The ability to maintain or expand the supply of teachers in rural areas will depend, in part, on teacher training capacity. It may be assumed that the underlying capacity to expand the supply of skilled personnel to the education sector is limited in countries that have low numbers of students enrolled in the tertiary sector. Tertiary enrollment as a percentage of the relevant age group is especially low in Tanzania, Mozambique, Malawi, and Ethiopia. However, the annual average rate of growth of tertiary enrollments appears to have been rather rapid: 16.9 percent in Tanzania, 12.5 percent in Mozambique, and nearly 10 percent in Ethiopia in the years after 1993, and 11.3 percent in Malawi over an earlier period (1985–90) (ADEA 2004). These growth rates suggest that there is scope for policy interventions to achieve quite rapid responses to inadequate capacity or to AIDS-related declines in the numbers of teachers and other key personnel with post-secondary education.

Other policy interventions may be effective in improving the poorest children's access to education or reducing the impact of declining numbers of teachers due to HIV/AIDS. Rural schools typically have high levels of staff turnover and attrition, as well as high pupil-teacher ratios. On aggregate, the supply of teachers may be quite high at the national level, but the distribution of teachers to particular types of school can be influenced by promotion structures, salaries, and other incentives. More important, the ability of the poorest rural children to complete primary schooling has been shown to be determined more by demand side factors than by supply side factors, especially the socioeconomic characteristics of the households in which children live.

The most cost-effective policy intervention in these simulations was to invest in female adult literacy campaigns in rural areas, since having a literate mother greatly increases the probability that a poor rural child will attend school. However, household incomes also influence children's educational attainment, and it should be possible to replicate the success of policies from other developing countries that provide a monthly income payment to mothers on condition that their children attend school (ILO 2004a: 382–84). The relevance of policies targeting such conditional transfers on the poorest African rural women has recently been recognized by the World Bank, which also now recognizes the scope to improve the educational attainment of the poorest rural labor market entrants through much greater efforts to eliminate user fees in primary education. These fees are still widespread in Sub-Saharan Africa (Kattan and Burnett 2004).

Health Workers and a Focus on Basic Health Needs

Recent cross-country research suggests a positive relationship between health worker density and health outcomes as measured by under-five mortality (which is a reasonable proxy for labor quality and productivity). The ratio of physicians, nurses, and midwives to the population has a positive effect on mortality rates over and above the effects of income, education, and poverty levels (Anand and Baernighausen 2004), suggesting that efforts to increase the number of health workers could make a significant contribution to the health status and the quality of labor in countries in Sub-Saharan Africa. However, the total number of health professionals in Sub-Saharan Africa is very low in comparison with other developing regions of the world—estimated at about 600,000, which translates into a density of about 1 health worker per 1,000 people (Joint Learning Initiative 2004: 29). And gaps between the health worker densities across Sub-Saharan Africa can be enormous (table 9).

Table 9: Distribution of Health Personnel in Sample Sub-Saharan African Countries, 2003 or Most Recent Year Available

Country	Human Resources for Health Index[a]	Density of Physicians (per 1,000 people)	Density of Nurses and Midwives (per 1,000 people)
Côte d'Ivoire	0.55	0.09	0.46
Ethiopia	0.23	0.03	0.21
Ghana	0.93	0.09	0.84
Kenya	1.03	0.13	0.90
Lesotho	1.12	0.05	1.07
Malawi	0.31	0.05	0.26
Mauritania	0.86	0.14	0.72
Mozambique	0.31	0.02	0.28
Senegal	0.36	0.08	0.29
South Africa	4.57	0.69	3.88
Swaziland	3.38	0.18	3.20
Tanzania	0.39	0.02	0.37
Uganda	0.14	0.05	0.05
Zambia	1.20	0.07	1.13

a. A measure of health worker density based on the total number of doctors, nurses, and midwives per 1,000 people.
Source: Joint Learning Initiative (2004: table A2).

Most of the disease burden affecting the quality of labor in Sub-Saharan Africa is accounted for by communicable disease and could be effectively addressed by community nurses. There is general agreement that it will not be feasible for Africa to achieve a substantial increase in the number of doctors and professional nurses within the next decade. The Joint Learning Initiative (2004: 73), a network of global health leaders, recommends that, "A more appropriate strategy would focus on building up cadres of briefly trained and well-supported auxiliary workers who can perform core basic functions." Yet the emphasis in Africa continues to be on the training of degree-level or registered nurses, despite the fact that the professional nurse training program typically costs 30 percent more than a community health or enrolled nurses program and takes up to twice as long (USAID 2003: 8).

A focus on meeting the basic health needs of the poorest members of the rural labor force would require a major shift in the pattern of both donor and government expenditures on health. Such a shift is unlikely to occur in contexts where the bargaining power or "voice" of poorer workers remains weak, relative to the ability of an elite of health professionals and their relatively rich urban patients to insist on continued state subsidies for high cost facilities.

Vocational Education, Training, and Skills

There is general agreement in the literature that the current provision of technical and vocational education and training, including training provided by employers in the private sector, by nongovernmental organizations (NGOs), and by the state, does not benefit the poorest members of the labor force. The irrelevance of existing provision for poor rural women and youth is particularly striking (Johanson and Adams 2004: 178–9; Bennell 1999: 6, 19; Haan 2002: 79–81).

Thus, although several African governments devote a large proportion of their budget to various types of education, they have few resources available to improve quality and expand the rural primary school system because over half of total expenditures are allocated to

secondary and tertiary education (Berthélemy 2004: 24). The immediate beneficiaries of these expenditures are the children of the wealthiest and best educated parents in Africa, as has been shown in research on the socioeconomic background of recent university and secondary school graduates in Malawi, Tanzania, Uganda, and Zimbabwe (Al-Samarrai and Bennell 2003: 22–23).

One rationale for devoting both government and donor resources to politically vocal young labor market entrants is the belief that there is a growing crisis of youth unemployment in Sub-Saharan Africa, exacerbated by the lack of appropriate skills. Thus, well-publicized efforts have been made to estimate the statistics for youth "unemployment," and these are reflected in the Millennium Development Goals. However, these estimates effectively ignore the labor market problems of the very large number of disadvantaged young people in rural Sub-Saharan Africa who simply cannot afford to be "unemployed" in the standard, internationally comparable ILO definition of open unemployment.[11] There is an emerging, if belated, consensus that "unemployment" is only one indicator of labor market outcomes for youth and that, in all economies with very large agricultural, unenumerated or "informal" sectors, it is usually not the best, or even a particularly useful indicator (Betcherman, Olivas, and Dar 2004: 34).

Of course, some young people in Sub-Saharan Africa are "unemployed" in terms of this standard definition, but they tend to be concentrated in urban areas, to have completed at least some secondary schooling, to have educated parents, and to live in wealthier households (Standing, Sender, and Weeks 1996; Godfrey 2003: 5; Collier and Lal 1986). The ILO (2004e: 8) recognizes that "[i]n several developing countries, young people of higher socio-economic backgrounds are over-represented in the unemployment numbers because it is only they who can afford to spend time looking for work, without incoming wages."

Another rationale for current training efforts, particularly the new concentration in the 1990s on training for the informal sector (Johanson 2002), is the belief that the rate of growth of employment opportunities, especially self-employment opportunities, in this sector is constrained by the lack of entrepreneurial and other skills. But there is insufficient evidence to support the view that there are real opportunities for the poorest, least visible rural labor market entrants to escape from poverty through self-employment.

The poorest Africans are unlikely to escape from poverty unless more vigorous demand is created for the types of *wage* labor that they can supply. There is also an urgent need to devote training resources to increasing the capacity of the most vulnerable members of the wage labor force to organize and to acquire the literacy and numeracy necessary to defend their interests against the least scrupulous and brutal employers (see section 6). For the historical and comparative evidence suggests that an increasingly organized wage labor force might develop the capacity to negotiate with employers in larger–scale enterprises not only to implement health and safety regulations more effectively, but also to improve workplace training that directly improves labor productivity. Few employers in Sub-Saharan Africa provide well-designed training. Efforts in the 1990s to promote partnerships between governments and employers to improve vocational training have not been very successful (Atchoarena and Delluc 2001: 18; Johanson and Adams 2004: 26; Standing, Sender, and Weeks 1996).

Policy Implications

The capacity to educate and to improve the health and skills of the next generation of the African labor supply, particularly targeting the poorest sources of this labor supply, must be a central focus of labor market policy. It remains difficult to appropriately define policy priorities in individual countries because of data shortcomings for example, on schooling.

Schooling, particularly in poor rural areas, is weakened by high staff turnover and high pupil-teacher ratios, thanks to incentive structures. These too should be susceptible to policy reform, of salaries and promotion structures, among others. Raising the quality of future labor supplies will also depend on policies that strengthen demand for schooling, again especially in poor rural areas. These policies should include cash transfers to mothers conditional on their children's school attendance, as well as an end to user fees and uniforms in primary education.

Similarly, it is important to increase the density of health workers in the population and to improve the provision of health facilities in disadvantaged areas. In the light of evidence of the positive effect of the number of physicians, nurses, and midwives per population on mortality rates, the number of health professionals in Sub-Saharan Africa is very low. The health worker density varies across African countries, and donors need to help to address this in countries where the density is particularly low. Furthermore, health workers throughout the region remain excessively concentrated in urban areas and in curative facilities. The disease burden in Sub-Saharan Africa consists principally of communicable diseases that can be dealt with by community nurses. This report strongly recommends a dramatic shift in donor and government health spending toward brief training and effective support systems for community nurses and other auxiliary workers who can address basic health concerns in rural areas.

The evidence reviewed in this section suggests that building up basic education and health delivery systems and adjusting incentives and spending to ensure that these systems more effectively reach into poor rural areas and predominantly rural areas are higher priorities than pursuing further experiments in technical and vocational education and training schemes. There would seem to be a greater need, before prioritizing pre-entry and in-service training schemes, to develop more detailed research on the specific labor market characteristics of disadvantaged youth. There is also a case for allocating resources to improving the capacity of the more vulnerable members of the wage labor force to negotiate with employers, with a view, for example, to securing better workplace training.

5. Characteristics and Determinants of Labor Mobility: Opportunities for Poverty Reduction

This section focuses on labor mobility, arguing that many forms of mobility are important to poverty reduction and that constraints on mobility restrict the growth of labor productivity and efforts to reduce poverty. The roles of violence and direct and indirect forms of coercion in propelling population movements and creating labor supplies are stressed. The policy implications, apart from the urgent need to invest in transport and communications infrastructure, include the need to recognize and record more accurately migrant African laborers as a foundation for interventions to facilitate their mobility and to protect them from abusive relationships.

One estimate of the total number of international migrants, including refugees, suggests that Sub-Saharan Africa contains almost half of all international migrants, despite containing only 10 percent of the world population (Russell and others, cited in Baker 1995). Analysis of patterns of mobility in Africa suggests a few stylized facts. First, the scale of circulation of people within and between African countries as well as between Africa and the rest of the world is massive. Second, the scale of circulation is extremely uneven. Third, population movements can fluctuate quite suddenly—a recent example is the surge in migration within and from Darfur in Sudan. Fourth, patterns of mobility change over time. This involves both shifting spatial patterns of mobility and changes in the characteristics of movement: who is moving (for example, the gender composition), from where, to where, what for, and how. Fifth, there is very little knowledge about the quantitative dimensions of overall labor force circulation. Sixth, the labor market implications of this population circulation are especially poorly understood.

There is a tension between this immense circulation of people and the weak provision of transport infrastructure (see below). This means that the conditions and costs of mobility can be very high and that migration is often undertaken only in extreme stress. Violence is one mechanism regulating this tension between mobility and weak infrastructure, information, and communication. Coercive mechanisms that lie behind much trafficking are also important links between population mobility and labor force participation. The other main mechanism regulating population flows is social differentiation. People with access to information or skills, or the resources to fund migration (transport costs, intermediaries' fees, and the like) are the most successful in migrating great distances. Demographic mobility is highly uneven across Sub-Saharan Africa, and the factors affecting this mobility vary greatly.

Migration, Emigration, and Immigration: Cross-Country Comparative Data

There is very little information on the scale of flows of migrants from Sub-Saharan Africa to the rest of the world. The United Nations (2002) *International Migration Report 2002* estimates a net increase in the number of migrants from Africa to the developed countries during the 1990s. However, statistical analysis of international migration from Africa to the rest of the world and possibly even more acutely within Africa is fraught with data collection problems: censuses are scarce and often outdated, there is a lack of identity documents, false declarations of nationality are rife, to name just a few of the problems.

For illustrative purposes, data on recorded inflows and asylum applications to OECD countries like the United Kingdom help to identify trends. UK evidence also shows that the

largest increases in asylum applications in 2001 over the previous year were all, with the exception of Afghanistan, from Africa (UK Refugee Council 2002). There was a 107 percent increase in applicants from Zimbabwe, a 47 percent increase from Ethiopia, and a 46 percent increase from Sierra Leone.

Empirical estimates of migration between African countries are extremely sketchy. Data published by the Migration Policy Institute suggest that there were as many as 2.34 million international migrants in Côte d'Ivoire in 2000 and 1.3 million in South Africa. However, estimates of the number of unrecorded migrants in South Africa vary from less than 2 million to as many as 8 million.[12] As a percentage of the total population international migrants ranged from 15.6 percent in Côte d'Ivoire in 1990 to 1 percent in 2000 in Ethiopia (table 10).

Table 10: Population and Migration Characteristics of Sample Sub-Saharan African Countries, 1990 and 2000

	Mid-Year Population	Estimated Number of International Migrants at Mid-Year (thousands)		International Migrants as Share of the Total Population (Percent)	
Country	**2000**	**1990**	**2000**	**1990**	**2000**
Côte d'Ivoire	15,827	1,953	2,336	15.6	14.8
Ethiopia	65,590	1,153	660	2.4	1.0
Ghana	19,593	507	614	3.3	3.1
Kenya	30,549	146	327	0.6	1.1
Lesotho	1,785	7	6	0.5	0.3
Malawi	11,370	1,157	280	12.2	2.5
Mauritania	2,645	94	63	4.6	2.4
Mozambique	17,861	122	366	0.9	2.1
Senegal	9,393	293	284	4.0	3.0
South Africa	44,000	1,225	1,303	3.3	3.0
Swaziland	1,044	73	42	8.6	4.0
Tanzania	34,837	574	893	2.2	2.6
Uganda	23,487	550	529	3.2	2.3
Zambia	10,419	323	377	3.9	3.6
Africa total	795,671	16,221	16,277	2.6	2.0

Source: United Nations (2004b). More data are available at: www.un.org/esa/population/publications/migstock/2003TrendsMigstock.pdf.

International Flows of Skilled Labor

Many migrants between states in large countries (like Nigeria), between African countries, and from Africa to Europe and North America are skilled. Many are college educated (Castles and Miller 2003: 139). By one estimate 233,000 South Africans emigrated permanently between 1989 and 1997, most of them skilled (*The Economist,* August 31st, 2000, citing University of Cape Town survey). This has become especially clear in recent years, for example, in the patterns of international migration by health sector workers.

Emigrants often send remittances to their home countries and sometimes return. There are also reverse flows. Sub-Saharan African countries are significant importers of migrant labor from other African countries and elsewhere. Workers' remittances to Sub-Saharan Africa are small fry by international comparisons: in absolute terms no Sub-Saharan African country features in the top 10 developing country recipients of remittances. But remittances are

important as a percentage of GDP in Sub-Saharan Africa, though to varying degrees (World Bank 2003).

At a micro level remittances make powerful contributions to survival. Evidence from West Africa suggests that remittances are allocated to investment in land improvement in some cases, to crucial consumption expenditure in others, and to pay hired labor in agriculture (IMP 2003). The value of remittances lost to Sudan from the repatriation of migrant workers in Iraq as a result of the 1991 Gulf War was estimated at $300 million (Van Hear 1992).

Refugees, Forced Migrants, and Internally Displaced People

At the beginning of 2004 there were an estimated 4,285,100 "asylum seekers, refugees, and others of concern" in Sub-Saharan Africa, including internally displaced people, recently returned refugees and stateless people, as recorded by the UNHCR.

Six of the ten largest refugee flows by origin in 2003 were in Africa: Sudan, Burundi, the Democratic Republic of Congo, Somalia, Liberia, and Angola. Nine of the ten largest refugee arrivals took place in Africa. And two of the largest populations of internally displaced people in 2003 were in Africa: Liberia (531,600) and Côte d'Ivoire (38,000). Africa hosts some 30 percent of the global refugee population (UNHCR 2004b). Tanzania hosts the fourth largest refugee population in the world (after Pakistan, Iran, and Germany). Meanwhile, 7 of the 10 biggest voluntary repatriation flows during 2003 were in Africa, including 133,000 returning to Angola. As with the global trend, so in Africa, more than half the refugees are women and girls.

South African labor markets have long taken advantage of a supply of labor from neighboring countries, through various mechanisms that have included refugees from warfare. For example, during the 1980s and early 1990s there were many illegal immigrants from Mozambique, effectively refugees from the war there, working as wage laborers on commercial farms, as domestic servants in rural areas, and as laborers in urban mining and manufacturing sectors (Sender 2003). More recently, political upheaval in Zimbabwe has generated a reversal in historical patterns of labor migration as Zimbabweans cross into Mozambique, many in search of work in new agribusinesses in Manica Province. In Western Tanzania in the 1990s, when there were large populations of refugees, there was a widening of the market (for bananas, for example) and a larger pool of labor. Local farmers often hired refugees to work as farm laborers, paying them in food and cash (Whitaker 1999).

Trafficking

Trafficking of different kinds—some more coercive than others—is a long-established mechanism for releasing labor supply in Africa. In northern Tanzania there is evidence of trafficked youth being sent back to their villages to recruit new children for work in the tanzanite mines. Parents are often implicated in pushing children into trafficking networks. Research in Togo found that it is not uncommon for parents to accept money from traffickers, for distant relatives to pay intermediaries to find work abroad, or for parents to hand over children on the promise of education or paid work (Human Rights Watch 2003). There is also an overlap between trafficking and refugee flows. For example, there is ongoing research on trafficking of refugees in host countries to mobilize cheap labor (such as from Congolese and Rwandan refugee camps inside Tanzania to agricultural plantations in the country).

Violence and Labor Supply

Populations in Sub-Saharan Africa have experienced high levels of collective and interpersonal violence. Violence in war and peace has broad effects on the formation of the labor force: it affects the rate of growth of the labor force and its absolute size, and it affects the quality of labor.

War is an "amplifier of disease" (USIP 2001). It is widely accepted that HIV prevalence rates are higher than average in military forces—according to some estimates as high as 60 percent in Angola and the Democratic Republic of Congo.
Women have historically been targets of violence during war—as victims of opportunistic violence and as part of the strategy of conflict. The implications of wartime sexual violence have changed with HIV/AIDS. If rape leads to HIV infection this affects morbidity and mortality rates and dependency ratios and conditions within households, with follow-on effects reducing children's access to education.

The effects of violence can include damage to education and health facilities and even their destruction (including schools and health posts but also teachers and health workers), weakened access to such services because of insecurity or broken transport infrastructure, and dramatic depreciation of skills and capabilities through physical, psychological, and relational damage. Accurately estimating such effects is notoriously difficult, for methodological and data availability reasons.

The evidence to date shows that violence is an important factor influencing labor market participation as well as productivity.[13] Women who seek wage employment against the wishes of their husbands are often severely beaten (Sender, Ova, and Cramer 2004). Interpersonal violence can damage labor productivity through psychological harm, physical debilitation, or deprivation of access to education, training, welfare services, and so on. This goes for violence outside and within the workplace. Interpersonal violence—especially perhaps its effects on girls—can reduce educational attainment. And the fiscal costs of interpersonal violence, which can be substantial, may have a follow-on effect on the budgetary scope for investing in decent health and education services and transport and communications infrastructure that support development of the labor force.[14]

Violence against girls in schools affects the quality of the labor supply. Where gender-based violence and coercion are the norm, this raises the risk of girls dropping out and experiencing teenage unintended pregnancies, and it raises the risk of contracting sexually transmitted diseases, including HIV/AIDS. Yet violence and abuse of girls in schools is widespread. Precise data are elusive, but the evidence has been gradually accumulating (Hallam 1994). This violence can be perpetrated by other students and by teachers. Afenyadu and Goparaju (2003) report a survey of 400 in-school and out of school adolescents in Dodowa, Ghana, in which they found that in-school female adolescents were more susceptible to forced sex, with junior secondary school girls being the most susceptible. In a survey in schools in Botswana 67 percent of girls (of 560 students) reported sexual harassment by teachers. Surveys in South Africa and Cameroon, Kenya, Malawi, and Zimbabwe confirm that violence against and abuse of girls in schools is widespread and that there are no government policies to address it (USAID 2004).

Most of the studies of violence against girls in schools claim that there are deleterious educational effects. For example, researchers in South Africa found that girls reported being

unable to concentrate, losing interest in school, and sometimes dropping out, in the aftermath of sexual violence. Other studies confirm these findings (USAID 2004; Leach and others 2003).

There is a range of policy challenges here. Many countries in Sub-Saharan Africa have very little formal legislation. In countries that do have formal laws and procedures designed to restrict and respond to sexual and domestic violence, enforcement is weak (Parenzee and Smythe 2003). Therefore, reducing the effect of violence as a constraint on labor force formation and on labor supply may be a benefit of public investments that, as this report argues, have other labor supply objectives. Other policy initiatives are also necessary. These include investment in public information campaigns through radio and health posts; incentives to police to improve the recording of incidents of gender-based violence; and potentially, following initiatives in parts of Latin America, the establishment of women only police stations.

Transport and Communications Infrastructure

Increased mobility is an important part of the process of poverty reduction, with both private and social returns. Constraints on mobility restrict the potential labor supply in response to geographic labor demand and deprive people of access to information, remittances, and ideas, which contribute to improving labor productivity. Cross-country econometric studies tend to show a clear positive effect of investment in infrastructure on growth; however, some of the poverty reducing effects show through more clearly in studies of different regional performance within large developing countries.

Transport infrastructure helps not just by facilitating labor mobility and labor market participation but also by easing the provision of other services that raise labor market quality. For example, research in Vietnam suggests that the presence of a road in a community brings about sizable improvements in secondary school enrollment and use of public health facilities in poorer provinces, while making a smaller difference in better off provinces (Deolalikar 2001; see also Glewwe, Granolati, and Zaman 2000).[15] Other research reinforces the significance of transport infrastructure spending on poor areas but argues that the return to transport investment is raised significantly when it is combined with spending on education, health, and other services. An additional argument for integrated policies is that they are required to reduce the danger that facilitating labor mobility will also spread HIV/AIDS, as well as other sexually transmitted diseases. Migration is commonly cited as an important factor contributing to the spread of HIV/AIDS (Pison and others 1993; Lurie and others 2003).

Africa's transport infrastructure is notoriously limited. Rural road density has been estimated at an average of 32 meters per square kilometer in Western Africa and 36 meters per square kilometer in Eastern and Southern Africa. Even this provision is highly unequal. In West Africa three countries (Cameroon, Côte d'Ivoire, and Nigeria) account for more than half the rural roads, while in Eastern and Southern Africa four countries (Madagascar, Tanzania, Zaire, and Zimbabwe) account for more than two-thirds.

Moreover, rural roads in much of Africa are of poor quality. Some 10 percent are paved, compared with about 35 percent in Asia. During rainy seasons many roads are impassable. According to one study in Tanzania just 24 percent of roads were in good condition in 1990, compared with 50 percent in Malawi, 40 percent in Zambia, and 32 percent in Kenya.

An important implication is that for many people in Africa the costs of mobility are extremely high and the means are generally basic. Many rural Africans live in a "walking world" because they are too far from roads or because of the lack of transportation services. Living "off road" has critical implications for the quality of the labor force. Access to health care is typically bad: research in Ghana and Uganda suggests, for example, that vaccination programs may miss off-road settlements (Porter 2002). Access to markets and traders is poor. And access to credit institutions and rural banks or post offices is extremely limited.

Communications infrastructure is also highly unevenly distributed across African countries. For example, the distribution of fixed and mobile phone subscribers per 1,000 people varies from 5 in Ethiopia and 11 in Malawi to 55 in Senegal and 353 in South Africa (World Bank 2004). Apart from the need to travel and to communicate, migrant and mobile workers urgently need access to financial services. In particular, they need safe and low-cost money transmission and savings facilities to meet their obligations to the children and women who depend on their remittances in rural areas. Banks and other private sector financial institutions have not found it profitable to establish widespread rural branch networks in Sub-Saharan Africa. The growth of such private networks usually depends on prior state investments, for example in rural post offices, to establish savings habits and create the market for subsequent private financial sector growth.

Policy Implications

The movement of people in Africa and its implications for labor supply are characterized by the same unevenness across and within countries that are a feature of other labor supply trends in the region. Two of the most important mechanisms regulating flows of people are coercion and social differentiation. Most Africans who migrate voluntarily are able to do so because they have advantages compared with others: advantages in wealth, knowledge, status, and contacts. Second, there is a tension between this high labor force mobility and the conditions of transport infrastructure, financial market infrastructure, and communications. The extreme unevenness of infrastructure provision as well as its generally poor provision throughout much of Sub-Saharan Africa reinforce the significance of these two mechanisms in shaping patterns of mobility and labor market participation. Further, the condition of the infrastructure, especially in rural areas, raises the costs for those left behind of education, health care, access to savings institutions, and access to opportunities for migration.

The aim of policy should be both to improve communications and transport infrastructure dramatically and to encourage institutional and policy reforms that recognize and record migrant laborers as a foundation for protecting them from abusive working relationships. Such an approach would facilitate the circulation of remittance money within families; make more people easier to reach with vaccination programs, HIV/AIDS testing and prevention campaigns, and other health and education services; and reduce the scope for violent and exploitative intermediaries to fill the gap in aiding mobility.

There is a case for new forms of policy intervention to manage particular types of labor flows, however. As discussed, there has been a rise in the number of health sector professionals migrating from African countries—to other African countries and further afield. The policy options for tackling this situation include greater sharing of information between countries on vacancies, public sector involvement in labor migration schemes for public sector service professionals, and greater expenditures to increase salaries and improve the

working conditions of nurses and doctors in countries like Ghana and Zimbabwe to stem the heavy leakage in recent years. In OECD countries, most of which fall short of published targets for ODA as a share of gross national income and in many of which there are political complaints about the public cost of care for refugees and immigrants, there should be greater public education on the role of nurses and doctors from Africa. One estimate is that African countries are effectively subsidizing health service provision (public and private) in OECD countries on the order of $500 million a year (Joint Learning Initiative 2004: 102).

6. Some Implications of a New Policy Focus on the Poorest, Most Disadvantaged Labor Force Entrants

The aim of this report has been to begin to isolate the policies that might be especially relevant for the most disadvantaged entrants to the labor force. This section contains more detailed discussion of some of the policy implications of the analysis presented throughout the report. It focuses initially on the urgency of improving the data that should underpin all policy interventions. Encouraging growth in sectors that are intensive in the use of unskilled, particularly female, labor will determine whether many of the poorest labor market entrants can survive. It is also important to increase the bargaining capacity of workers in these sectors, because there is no automatic mechanism linking employment expansion to poverty reduction. Further, concentrating on those sectors will make it easier to make some progress with the other policies recommended throughout this report, including the construction and maintenance of health facilities, the recruitment and motivation of primary school teachers, and the improvement of transport and communications infrastructure.

National Data Gaps

Data on labor supply and employment are difficult to obtain and are less reliable than many other socioeconomic indicators. Gaps in the data are evident in the most basic official tabulations.[16] Donor agencies do not appear to recognize the severity of these problems, since they have not prioritized policies to improve the data on African labor markets.

High labor participation rates and low levels of formal sector recorded employment are a remarkable feature of the published data on Sub-Saharan African labor markets. The typical national household survey shows that agriculture accounts for 60–80 percent of the labor force; most adult household members are classified as independent, own account agricultural producers, or unpaid family workers. These three categories usually account for about 80 percent of the agricultural labor force. However, these categories are residual, in the sense that enumerators assume, without detailed investigation of activity over time, that most people are own-account or family workers in rural areas. If these own-account occupations are taken as given and if few young people are in schools or colleges, labor market participation rates are high by definition.

The concepts and interpretations of employment and unemployment are deeply ambiguous. Depending on how questions are worded and interpreted by survey respondents and enumerators, one or another dimension of unemployment will take precedence, thus making international and even intranational comparisons misleading. Given the definitions in use, it is obvious that unemployment rates in many Sub-Saharan African countries will be *low* by international standards, because of the very low levels of unemployment recorded in rural areas where, as argued, most people are simply assumed to be engaged in some type of activity. If some studies suggest that unemployment is high, especially among groups like urban youth, their results may be explained mainly by differences in sampling, definitions, and in the application of conventions of data collection.[17]

In sum, the insufficient coverage and differences in definitions, years, and sources of data may lead to spurious and misleading comparisons between African countries. Moreover, the concepts and definitions used (employed, economically active population, unemployed) may be inappropriate, since their meaning depends on the level of development and the specific

features of labor markets. Unfortunately, the poorest Africans participate in precisely the labor markets that cannot be understood on the basis of official statistics.

Microeconomic Research on Unregistered or Unrecorded Wage Labor and the Need for New Modules for the Living Standards Measurement Study Surveys

Many recent household sample surveys show only very small proportions of people in wage employment categories. The samples include few agricultural workers, domestic servants, cleaners, porters, bus drivers, migrant workers engaged in road construction, bartenders, workers in food stalls or restaurants, petty salespeople (employed by traders), and the like. However, these wage workers, as well as women working for wages in the sexual services sector, are very numerous in rural and urban areas of Sub-Saharan African countries. The quantitative importance of the wage work of domestic servants has been obscured by the tendency to record non-kin-related residents in households as "unpaid family workers" when it would be more appropriate to classify them as domestic servants, receiving irregular and small amounts of pocket money, food, and lodging as their wage.

Many of these statistically invisible wage workers belong to the poorest 20 percent of rural households; a more disaggregated classification of the different types of irregular wage employment would identify those segments of the unenumerated rural labor market that contain the largest numbers of very poor people. For example, there is micro-survey evidence that suggests that the poorest rural households in Côte d'Ivoire and Kenya are far more dependent on unskilled farm wage income than the richest households. In Rwanda dependence on unskilled wage labor is higher in female-headed and illiterate households (Barrett and others 2001: 12, 26).[18]

The ILO has stressed the lack of reliable statistics on waged agricultural labor and highlights the need for "comprehensive disaggregated statistics," since wage employment in agriculture in poor countries is "invisible" in most conventional databases (ILO 2003: 42). Other empirical studies have highlighted the neglect of rural nonfarm employment in national datasets (Elbers and others 2003; Bryceson 1999), as well as the dynamic nature of casual labor markets in rural areas and the large and growing nonagricultural employment in rural areas of Sub-Saharan Africa (Reardon 1997; Kevane 1994; Sender 2003; Wiggins 2000; Adams 1991). Limited evidence from African micro-surveys (Sender 2002; Sender, Oya, and Cramer 2004), as well as strong evidence from India, suggests that the move from *casual* forms of rural wage employment to more *regular* rural wage employment, implying higher annual real wages, is decisive in reducing poverty (Ghose 2004: 5112). Thus, a key indicator of poverty reduction, largely ignored in official statistical publications, is the rate of growth of real wages in rural areas. The wage rate for female casual agricultural labor is usually the lowest real wage rate in the economy. Monitoring changes in these real wages is particularly relevant for assessing trends in standards of living in the poorest households.

The results of random household surveys, such as the LSMS, are usually presented as the most accurate and complete information concerning the characteristics of poor people, including their employment patterns. However, LSMS sampling techniques and their questionnaires do not take full account of the heterogeneity in rural areas. In African contexts the distribution of all rural resources and opportunities, including access to different types of employment, is extremely uneven (Kevane 1994; Reardon 1997; Bryceson 1999; Sender 2003). Thus, important pockets of various forms of wage employment, which are by no means uniformly distributed throughout the country, may easily be missed in random

surveys. Also, significant movements of labor to and from some dynamic pockets may not be captured because LSMS sampling frames are inaccurate or because standard definitions of *household* and its *residents* are too narrow, leading to a failure to collect information from "nonresidents" concerning migration episodes in search of wage employment.

The risk of failing to include large numbers of disadvantaged labor force entrants in the sample argues for complementary sampling approaches purposively designed to capture the characteristics of specific groups of wage workers, especially those engaged in seasonal, casual, and low-paid jobs outside major urban centers. These people are not usually "resident" in "households". They live and work for long periods in hostels, barracks, construction sites, and illegal squatter settlements, or they have been given some space to sleep at their workplace during the harvest season or while working as domestic servants. These employees are easily missed in conventional samples such as LSMS or DHS, because of their focus on a random, population-census-weighted selection of rural and urban enumeration areas and their choice of "household residents" as the unit of analysis.

There are other problems in the way recent household surveys have been conducted that have resulted in insufficiently detailed labor market information covering specific occupational categories. To overcome these problems, more appropriate, disaggregated and context-specific occupational and status categories are required, in order to understand the complexity of what is often vaguely called "informal" employment.[19] Ideally, more detailed information could be derived from more comprehensive labor force surveys but these are organized irregularly and with substantial lags (World Bank 2004). Instead, LSMS and household budget surveys have become the main source of socioeconomic data in Sub-Saharan Africa. These surveys are driven by a search for extraordinarily detailed consumption data for calculating national poverty incidence rates. The result is that other types of policy relevant socioeconomic surveys that focus on the specificities of rural labor market activity or HIV prevalence, for instance, have been neglected.

The employment sections of LSMS surveys are very brief. They aim to collect very general information for international comparisons. LSMS employment modules ask standard questions concerning employment during a very short reference period (one week). However, in any particular week, a rural person who often works as a casual wage laborer could be engaged in some form of self-employment. Similarly, a person who is often engaged in nonfarming activities could be engaged in farming.

This problem is recognized by the Indian National Sample Survey Organization, which regularly investigates employment patterns every five years, using a much longer reference period of one year. These surveys are richer in content and relevance than the standard labor force surveys or the LSMS surveys conducted in Africa (Ghose 2004). A few countries (including Mozambique) have recently tried to include a question that departs from the standard conventions and covers a reference period that extends across the entire agricultural season, for example, "Has any member of the household been hired out during the last agricultural season?" However, there is still a considerable room to incorporate more detailed questions about people's experience of seasonal and irregular employment in an expanded LSMS employment module. The current LSMS questionnaires rarely gives respondents the opportunity to describe their full array of occupations or to discuss their allocation of labor to different survival strategies in detail.[20]

Merely extending the reference period to capture seasonality does not guarantee the reliability of estimates of economic activity. In an ongoing village-level survey in Mauritania an implausibly high proportion of respondents answered "never" to the question "Have you participated in any kind of remunerated activity over the past 12 months?" in two of three sampled villages. Subsequent responses to other, open-ended questions concerning their activities made it obvious that most people, including children, had in fact undertaken remunerated activities, but their understanding of the initial question and the inability of inexperienced interviewers to capture inconsistencies could have resulted in a low estimates of the number of people who were economically active and an artificially low estimate of the employment-to-population ratio.

Thus, open-ended questions can play an important role in questionnaire design, as can the training and career prospects of enumerators. The problem is that, when implementing the standard modules of large-scale nationally representative surveys, researchers have often found it difficult to include context-specific open-ended questions or to ensure enumerator quality.[21] LSMS surveys have not managed to avoid the problem of unreliable, or even fabricated data arising from inadequate monitoring and training of enumerators, as is well-documented in South African surveys (May 2004: 6). However, it will be difficult to ensure enumerator quality and, at the same time, insist on downsizing public sector employment.

There is also tension between prioritizing nationally representative consumption surveys and the need for more reliable data on employment issues. Because of the weakness in capacity and logistical resources of many African statistical institutions, the donor-sponsored focus on the calculation of "the national poverty line" often comes at the expense of the depth, comprehensiveness, and quality of the data relevant for analyzing the dynamics of poverty. At least three steps should be taken to enhance the quality of information on labor supply:

1. Conventional surveys that aim at statistical representativeness must make greater efforts to intensify the training and improve the long-term career structure for a professional enumeration staff, to minimize the biases arising from interviewer-respondent interactions;
2. All large-scale surveys should be prepared to depart from international conventions, recognizing that household questionnaires have to be adapted to take account of the specific local contexts of labor transactions, as well as the household fluidity and variability that is often emphasized in micro-level research;
3. New types of complementary survey should purposively select samples of workers, rather than "households," focusing on workers whom micro-surveys have identified as the most disadvantaged and lowest paid labor market participants.

The results of a new pro-poor statistical research agenda could fill important data gaps and lead to a more realistic discussion of the characteristics of labor markets and (self) employment trends, particularly for the most disadvantaged labor force entrants. These results are also require identifying policies that are affecting and could increase the demand for female and poorly educated labor in the agricultural sector, as well as in the services, transport, and construction sectors in rural areas.

Sectoral Policies for Pro-Poor Investment

The main policy recommendations of this report are complementary, and some serve multiple objectives. The high cost of reaching all areas of a country with investments in social and

economic infrastructure makes this especially important. There is an argument for concentrating policies and expenditures in particular areas, to maximize their gains; this may help over time to generate a stronger material basis for a future spread of investment to other areas. Section 5 showed that the population of Sub-Saharan Africa is highly mobile but that mobility is constrained by financial costs, information barriers, and other obstacles (including, in some countries at some times, political barriers). In practice, this means that the bulk of population movements typically do not involve the poorest Africans. Poorer Africans who do migrate are more likely to move only short distances unless mobilized by violence.

Yet historically and in contemporary Sub-Saharan Africa labor mobility has improved people's material existence. For example, wage remittances by Mozambicans working on the farms and mines in South Africa and other neighboring countries through much of the twentieth century fueled a process of investment and accumulation within parts of rural Mozambique (Newitt 1995). In Ethiopia seasonal labor migration to coffee growing areas contributed to the survival strategies of poor rural northerners from the 1930s onward, as did migration to urban and farming employment opportunities in neighboring Eritrea and Sudan (McCann 1987: 192), till political restrictions on population mobility were imposed during the 1970s and 1980s. Seasonal labor migration within Ethiopia began to revive in the early twenty-first century (CDPR 2004). Thus, a key to the poverty-reducing potential of rural-rural labor migration by extremely poor labor market participants is the necessarily uneven pattern of dynamism in commercial agriculture.

Policies that increase demand for unskilled wage labor on plantations, in agribusiness, and on dynamic medium-scale farms, combined with policies to reduce the costs of migration from areas of concentrated poverty to areas with greater economic prospects, may therefore have significant poverty reducing potential. At the heart of these policies must be greater efforts to concentrate labor-intensive infrastructure investments, focusing on areas where agro-climate conditions are most favorable for economic expansion (above all for expansion of export volumes). This policy has the benefit of rationalizing expenditures in a context of generally high per capita costs for infrastructure investment in Africa.

The poverty reducing impact of concentrating infrastructure investments on areas with strong agro-export potential can be maximized by (re)designing fiscal and other incentives to encourage production of crops that demand relatively high levels of wage labor input. Labor-intensive crops (especially female wage labor-intensive crops) are often precisely those for which there is an export market. Thus, data from Computerized Enterprise Budgets (COMBUD) in South Africa, for example, suggest that irrigated crops require at least five times more labor on average than nonirrigated crops and that crops such as papaya, guava, avocados, tobacco, and chilies use between 4,000 hours and 10,000 hours of labor per hectare, compared with dryland maize, oats, ryegrass, and wheat, which according to COMBUD require less than 15 hours per hectare in many areas (Standing, Sender, and Weeks 1996: 263).

There are obvious complementarities between this policy focus and other priorities, such as the need to manage balance of payments constraints. There are other complementarities too. Improvements in transport infrastructure reduce the costs both of providing and of getting access to social infrastructure, including health and education facilities and services. In selected rural areas it may then prove relatively cheap to maintain and equip primary schools and easier to recruit and retain teachers; it will also be easier to provide rural women with antenatal care, treat sexually transmitted disease and provide condoms, promote public

campaigns to reduce violence against girls in schools, enforce laws against domestic violence, and experiment with women-only police posts. If these policies—educational, health–oriented, export revenue generating, and infrastructural—are conceived as integrated priorities, it may become possible to use improvements in transport infrastructure as a means of slowing HIV transmission rather than accelerating it.

Investments to improve rural infrastructure in the very poorest countries in Sub-Saharan Africa and a focus on dynamic export-oriented agricultural zones—areas like the coffee and horticulture zones of Ethiopia or the highest potential agricultural areas of Mozambique—would have another important benefit. This would make it easier for union officials to generate voice among a critical mass of poor and often female agricultural workers and for donors to encourage government officials to monitor compliance with the international labor standards to which they are signatories.

Voice and the Bargaining Power of Disadvantaged Labor

The education and health status of the poorest labor market entrants and their children is low in absolute terms, but this report has stressed *relative* deprivation within each country, particularly the scale of inequalities between poor workers' access to the services that would increase their productivity and that achieved by more privileged Africans. These inequalities could be explained in political economy terms by the extremely weak bargaining power of the most disadvantaged labor market participants. Pro-poor strategies should make direct attempts to support the political voice or bargaining power of the most vulnerable wage workers.

In many parts of the world and in several African countries trade unions have historically led political struggles for the fundamental rights to which donors have now committed themselves, such as democracy and the universal provision of basic education and healthcare. They are potentially important allies in poverty reduction strategies and in any attempt to improve labor quality, as well as in efforts to promote realistic research on employment and real wage trends. But their potential has yet to be tapped by donor projects, and donors appear to have missed the opportunity provided by the Poverty Reduction Strategy Report (PRSP) process to strengthen the role of workers organizations in policy formulation, implementation, and monitoring.

A review of trade union participation in the PRSP process in 23 countries, including 10 Sub-Saharan African countries, concluded that "no union has reported being engaged in the drafting, implementation, or monitoring and evaluation. In a number of cases, unions have attended meetings on the PRSP but have not been able to make responses due to late delivery of background material, lack of capacity to analyze and present alternative proposals, or simply because they were invited to only one or two such sessions. They have variously classified such a process as 'cosmetic', 'symbolic,' and 'unsatisfactory.'" (Egulu 2004: 10) The same review called for more attention to be paid by donors to capacity building programs to strengthen unions (Egulu 2004: 12).

The need for donors to strengthen their links with the trade union movement and with other organizations that represent workers has also recently been stressed by the UK Secretary of State for International Development. The Department for International Development (DFID) has made the economic case for supporting decent labor standards in poor countries, arguing for the need to raise efficiency by ensuring that women are not excluded from labor market

opportunities, for promoting minimum wage legislation; and for enforcing the obligation to provide decent and safe working conditions, since these standards can reduce wasteful labor turnover and facilitate creativity and cooperation in the workplace. These arguments also make it clear that too few resources are being allocated to improve the capacity of African governments to strengthen the performance of their health and safety inspectorates. DFID therefore argues that "The World Bank could be more active in promoting labor rights…" and has supported the case that the International Finance Corporation should make adherence to core labor standards a condition for loans (DFID 2004: 26).

Trade unions in Sub-Saharan Africa need external support not only to increase their ability to represent the interests of existing members, but also to organize, mobilize, and educate an extremely large pool of poor and casual workers active in the unenumerated sector. Their capacity to reach such unorganized workers, especially in rural areas, is very limited, although unions in some countries have made greater efforts to mobilize new members outside their traditional constituency, including women, than others (Konings 2003; Beckman 2002). The ILO (2004a: 340) has recognized this problem. It emphasizes the institutional and capacity obstacles to the emergence of effective and accountable representative organizations for workers in unenumerated sectors and calls for "voice coalitions" between workers in the informal economy and formal workers and their trade unions. This report supports the recommendations by the ILO and DFID for substantial new initiatives to promote the organization of coalitions between wage workers in Sub-Saharan Africa.

Annex

Data Sources and Inadequacies

Population censuses and labor force surveys are commonly used as primary sources of information on labor supply. These sources are used throughout this section. Very few countries in Sub-Saharan Africa have carried out labor force surveys, and censuses are often outdated (World Bank 2004). Yet many outdated censuses have been used as sampling frames for Living Standards Measurement (Household Budget) Study (LSMS) surveys and for Core Welfare Indicators Questionnaire Surveys (CWIQS), which are increasingly becoming the main source of information used for labor market policy making. More than 45 LSMS and 18 CWIQS have been completed or begun since the mid-1980s[22], whereas only 10 labor force surveys are included in the survey lists published by the World Bank. In 1994 a World Bank study on labor markets and structural adjustment included only three Sub-Saharan African country case studies (Côte d'Ivoire, Ghana, and Kenya), of which just one was based on a labor force survey (Kenya).

Nevertheless, labor force surveys and population censuses remain the primary sources for the International Labour Organization (ILO) database (LABORSTA http://laborsta.ilo.org), providing the data for measures of the economically active population, employment to population ratios, and the growth of the labor force, by gender and age groups (Behrman and Rosenzweig 1994: 161). The response rates for several important indicators in Sub-Saharan Africa are low: zero for employment to population ratios, 2 percent for youth unemployment rates, and 14 percent for unemployment rates (Schaible and Mahadevan-Vijaya 2002: 2).

The gaps in the data, both for individual countries and periods of time, have two implications. First, many countries in Sub-Saharan Africa have no reliable data on labor supply, and practically nothing is known about labor demand and labor market dynamics in these countries. Second, the data shown for the countries covered are often based on estimates and projections that rely on brave assumptions about population dynamics (natural rates of growth, age composition, and migration) and assumptions about the distribution of the labor force by sector, occupation, and status. Trends in the quantity of labor supplied by adults, children, and youth are discussed in subsequent subsections.

It is, therefore, hardly surprising that different agencies publish very different estimates for key labor market statistics. For example, *African Development Indicators 2003* shows interpolated data on the labor force (economically active population) for a complete time series. The ILO database presents data from the primary sources, so not all years are included. For Ethiopia, it is striking to note, the World Bank records a labor force of nearly 17 million people in 1980, while the ILO database records only 14 million economically active people. In a number of random checks for the sample of countries covered in this report similar inconsistencies appear between these two data sources, which is surprising because the ILO is cited as the source for the World Bank series.

It is regrettable that more reliable data are not available, particularly to analyze the impact of HIV/AIDS on labor supplies. The starting point for any analysis of the impact of HIV/AIDS should be recent data on prevalence and mortality rates. There is remarkably little good

quality information available that would enable the levels and thus trends in national HIV prevalence rates to be accurately monitored (Bennell 2003a). No country in Sub-Saharan Africa collects reliable vital registration data on deaths.[23] As a consequence, all figures describing the number of AIDS-related deaths in Africa are estimates of some kind (Ngom and Clark 2003: 3). The Joint United Nations Programme on HIV/AIDS (UNAIDS) warn that their published estimates of HIV prevalence should be viewed as having an accuracy of +/–25 percent (Zaba, Marston, and Floyd 2003: 13).

There is little population-based survey data providing information on age- and gender-specific HIV infection rates by location and socioeconomic background. HIV prevalence estimates rely on the testing of pregnant women who attend public sector antenatal clinics. This is not an accurate method for measuring national, age-specific, or male prevalence levels. Inaccuracies arise because:

- Sentinel surveillance in antenatal clinics has an inherent selection bias against women using modern contraceptives. Women who have adopted consistent condom use are less likely to become pregnant and to attend the clinics.
- In the countries with more mature epidemics, there is some concern that antenatal clinic data may underestimate HIV prevalence, because of falling fertility among HIV-positive women (Whiteside and others 2003: 10–11). If fertility is considerably lower among HIV-positive women, estimates of HIV prevalence may be downwardly biased (United Nations 2004a: 26).
- Rural data are biased toward larger villages and settlements close to towns and roads. Rural samples tend to be small and are often biased toward more seriously affected rural areas (Dyson 2003: 428). Very poor rural women and those living in more remote rural areas are less likely to attend antenatal clinics (Population Reference Bureau 2004: 2).

The inclusion of questions on HIV testing of adults in the more recent Demographic and Health Surveys (DHS) nationwide population-based samples in Kenya, Malawi, and Uganda may provide more accurate estimates of age- and location-specific prevalence. However, both DHS data and antenatal clinic data have to be combined with population census data to estimate national prevalence rates. If the last census is judged to have been unreliable, DHS may be forced to use another sampling frame, such as the electoral lists in Mozambique; but these electoral lists may not be accurate.[24]

Moreover, as noted, the published population census data for many Sub-Saharan African countries (for example, Côte d'Ivoire, Ethiopia, Lesotho, Malawi, Mozambique, and Swaziland) are often five or more years old (US Census Bureau 2004). Large population shifts may have taken place in the intervening years (see section 5), as a result of war, famine and forced migration, and changes in fundamental demographic variables such as fertility rates may have been faster than expected.

There are several other problems with the African population census data used to derive not only estimates of HIV prevalence, but also all labor force estimates. Undercounting may be caused by logistical difficulties, accessibility problems, and risk; misreporting is difficult to correct in the absence of alternative cross-checking lists;[25] and censorship by governments may affect the published estimates of the regional breakdown of the population. In sum, the combination of unreliable prevalence data with unreliable population census data is bound to exacerbate the problem of interpreting the results.

Projections of the impact of HIV on the labor supply need strong assumptions about the distribution of the time of progression from HIV infections to AIDS and from AIDS to death. Very small changes in these assumptions have important effects on projected mortality, but it is acknowledged that there is a great deal of uncertainty about the reliability of the particular assumptions made by UNAIDS and used in the United Nations Population Division's 2004 projections of the impact of HIV (United Nations 2004a: 26).

Similarly, for projections of labor supply, the ILO has made assumptions about the duration of the periods when individuals are first partially and eventually fully unable to work without treatment and before death. Thus, they define a stage during which a person living with HIV/AIDS is bedridden for up to 50 percent of the time and can only work for 50 percent of the time (Stage 3); and another when a person is bedridden for more than 50 percent of the time and cannot work at all. However, the ILO admits that its assumptions are based on "a very small" body of literature on the progression of HIV/AIDS from the onset of symptoms to death (ILO 2004d: 67). The first empirical evidence on the impact of HIV/AIDS on labor productivity, also published in 2004, suggests that pre-AIDS morbidity affects the ability and productivity of infected workers over a substantially longer period of time than has previously been recognized (Fox and others 2004: 323).

The problems in projecting the size and timing of the impact of HIV/AIDS on women, men, and children in different Sub-Saharan African countries are even more complex than suggested in the previous paragraphs (Ngom and Clark 2003; Zaba, Marston, and Floyd 2003; Gregson, Zaba, and Hunter 2002). For example, these projections depend on weakly grounded assumptions about population-specific behavioral factors, such as current and future sexual networking preferences, as well as on assumptions about vertical transmission rates under different treatment regimes in the future. Projections also depend on future trends in conflict and violence in Sub-Saharan Africa, since wars are known to spread infection (section 5). But it is difficult to conceive of a method of predicting the outbreak of wars. As Keynes (1937: 241) noted when referring to the prospect of a European war, "About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know!"

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[1] In Botswana, for example, it is predicted that by 2025 more than half of the population ages 35–59 will have been lost to AIDS (United Nations 2004a: 21).
[2] Household expenditures on child-related goods—in particular on healthy foods—are lower when a child's biological mother is absent (Case, Paxson, and Abledinger 2002: 2).
[3] The ILO defines *labor force* as the sum of all people who are economically active—a formal definition encompassing all people of working age who are in paid employment, gainful self-employment, or unemployed but available for and seeking work. The labor force is quantified by summing the products of economic activity rates estimated by the ILO for each age and sex group and the population weights of the same age and sex groups (ILO 2004d: 4).
[4] Despite the efficacy and low cost of condoms there has been remarkably little effort to increase their supply to poor rural Africans. An average of only 4.6 condoms are available annually per man in the age group 15–59 years in Sub-Saharan Africa. Donor funding of condom supply has not increased in the period since 1995 (Shelton and Johnston 2001)
[5] This report discusses labor productivity, health, and education but does not use the concept of "human capital," which is theoretically problematic and is typically used ahistorically (Fine 1998). Nor does the report cover the literature based on cross-country regressions purporting to account for the contribution of improvements in "human capital" to the growth rate or to the rate of poverty reduction or the similar literature estimating average social rates of return to investments in education (for critiques of which see Bennell 1996; and Freeman and Lindauer 1999; on the inadequacy of time-series data on income distribution and age-specific education stocks in developing countries and in Sub-Saharan Africa in particular, see OECD 2002).
[6] Most of the data on literacy are based on reported literacy rather than on tested literacy and in some cases are derived from other proxy information. Moreover, definitions are not necessarily standardized.
[7] The impact of gender gaps in educational attainment on economic growth and on other variables, including *male* life expectancy, is discussed in King and Hill (1993: chapter 3).
[8] The Theil measure is used because it is decomposable into groups—it can be decomposed into the sum of within and between region (urban or rural) contributions to inequality, to indicate the degree to which a reduction in inequality *between* rural and urban areas would reduce overall inequality. This measure is the basis for the conclusion that the contribution of inequality *within* rural regions predominates in Sub-Saharan Africa (Sahn and Stifel 2004: 22).
[9] Sahn and Stifel (2004) measure inequality in health by the inequality in linear growth of children, since they argue that child height is a useful indicator of well-being. They assess the degree to which inequality of heights in the DHS samples, conditional on gender and age, differs from the inequality observed in the National Center for Health Statistics healthy reference population.
[10] Net enrollment rates are seldom available, because school dropout and repetition rates are inaccurately recorded in many Sub-Saharan Africa countries (OECD 2002; Behrman and Rosenzweig 1994). Alternative indicators of the quality of the labor force also difficult to come by. Reliable and disaggregated information on years of labor experience, an important dimension of labor force quality, are rarely available. Data on training in the workplace are often missing in the available datasets. Firm and establishment surveys, almost the only data sources for this information (Recanatini, Scott, and Xu 2002), contain rather weak modules on employment and the quality of the labor force.
[11] The poorest young people are, of course, "too busy working to have time to enrol on training courses of any kind" (Bennell 1999: 19).
[12] On the unreliability of the South African data, see Standing, Sender, and Weeks 1996: 61.
[13] There are different definitions of violence: some emphasize more narrowly physical damage and intent to hurt or the lack of consent of the victim. Other broader definitions include psychological threats and abuse or even "structural violence," which typically highlights social institutions that repress individuals' scope for choice and fulfillment.
[14] Pfizer (2001, cited in WHO 2004) estimated that crime and violence together cost the equivalent of 5 percent of the GNP of industrialized economies and as much as 14 percent of the GNP of low-income countries.
[15] Nonetheless, it is remarkable how the questionnaires behind survey data on infrastructure and poverty typically fail to ask detailed questions about the labor market implications of infrastructure provision, beyond the issue of labor-intensive infrastructure construction.
[16] For example, the ILO's *Global Employment Trends 2003* presents labor market indicators for 19 African countries, but data for employment growth covering the period 1995–99 are only given for three of these countries, while data for the whole period 1990–99 are available for four countries. Unemployment rates are given for 14 countries in 1999, but only for two countries in 1990. Nevertheless, labor force *growth* estimates are presented for all 19 countries, simply as estimated projections from general population data, available from censuses (ILO 2004c: 138–45).

[17] In spite of efforts to standardize definitions, these still vary between countries; small variations, e.g. in terms of the minimum age accepted for employment questions (as shown in Table A13), can have a significant impact on the comparability of data across countries. Most researchers working with cross-country datasets are unaware of or indifferent to this problem (Behrman and Rosenzweig 1994).

[18] More than 60 percent of rural households in Côte d'Ivoire and Kenya (and more than 44 percent of Rwandan households) earn income from off-farm agricultural wage labor, usually seasonal, casual labor (Barrett and others 2001).

[19] The definition of the informal sector adopted in 1993 by the ILO has significant loopholes and remains vague, leaving room for different interpretations. Estimates of informal employment and activities are often indirect, based on the residual balance technique, which depends on different choices of assumptions. These choices frequently differ between sources (Charmes 1999).

[20] New instruments have recently been developed in KwaZulu-Natal Province of South Africa to overcome the problems evident in the South African LSMS data. Preliminary results from the Risk and Vulnerability in Employment Survey and the Socio-economic Study of the Persistence of Poverty and Inequality are extremely promising and clearly demonstrate the large amount of labor market activity missed in LSM surveys (Lund 2004; Adato, Lund, and Mhlongo 2004: 17). Similarly, the Ministry of Finance in Mozambique has recently completed a large-scale survey of rural wage labor in three provinces, using questionnaire instruments and interviewing techniques specifically designed to improve on LSMS employment modules (Sender, Oya, and Cramer 2004).

[21] For example, Mozambique's 2000/01 Core Welfare Indicators Questionnaire Surveys included two questions on the hiring in and out of seasonal labor. These questions were expected to uncover valuable new information about rural labor market dynamics and poverty. However, a simple check of the database showed that a high proportion of households claiming to farm large areas of land, of 20 hectares and more, also claimed they did not hire in any workers. This is not a credible result and illustrates the possibility of serious measurement errors when implementing large-scale surveys using inadequately trained enumerators.

[22] There are also up to 66 income and expenditure surveys recorded in the African Monitoring Database, but many of these surveys do not include information on employment.

[23] Even in South Africa the registration of adult deaths remains incomplete, there are long delays in publishing official statistics, and there is unreliable certification of AIDS (Bradshaw and others 2004).

[24] In the recent Demographic and Health Survey for Nigeria the sampling frame was the list of enumeration areas developed for the dated and unreliable 1991 Population Census (Nigeria National Population Commission 2004: 211). Other evidence suggests that the quality of data collected in the Nigerian DHS may be low (Case, Paxson, and Abledinger 2002: 6).

[25] Even in countries with sophisticated census facilities, such as South Africa and the United States, "illegal" backyard shack residents or migrant workers are often undercounted (Wittenberg 2004; Lobo 2002). In Sub-Saharan Africa interviewers and respondents can have differing interpretations of the concept of "a person who is usually resident," because of difficulties in defining this concept in contexts where the population is extremely mobile and the complex patterns of household formation do not conform to the stereotype of stable, nuclear families (Chamie 1994).

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