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The Population Debate in Relation To Development
The Case of Sub-Saharan Africa

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Introduction

Paraphrasing Todaro (1994), development can be defined as a multidimensional process encompassing major changes in social structures, popular attitudes, and national institutions, as well as the acceleration and sustenance of economic growth, the reduction of inequality and the eradication of absolute poverty. It is the sustained elevation of an entire society and social system toward a better or more humane life.

The improvement of human welfare, therefore, constitutes the ultimate goal of development. And this is what every nation strives to achieve through different combinations of varied economic and social instruments.

Generally, development is assessed in terms of economic growth and its impact on income and welfare levels, as well as distribution. There must be economic progress for development to occur. Since developing countries are still in the process of building social infrastructures and self-sustaining socio-economic systems, the rates of economic growth should necessarily significantly exceed population growth rates to ensure any reasonable chance of development occurring.

The relationship between population expansion and economic development is intricate and not a straightforward one. In addition, the historical quantitative evidence is ambiguous. Many social scientists consider rapid population growth in developing countries as a major obstacle to development. However, there are many ways in which population growth may actually be a stimulus to development. There are also quite a few rational reasons why families in the developing world may opt for many children.

Theories

Current proponents of rapid population growth include the Danish economist Ester Oserup, who concluded from her historical studies of agricultural development (1965) that population pressure stimulates agricultural intensification and innovation, as well as technological improvement. Easterlin (1967) suggests that

population pressure can favorably affect individual motivation and lead to changes in production techniques that overcome the adverse effects of the population pressure. Easterlin also claims the young age structure of a population makes it more amenable to change, receptive to new ideas, and willing to shift resources from low to high productivity sectors, all of which may raise per capita income. As for the Australian economist Colin Clark (1967, 1969), population density encourages economic and technological progress. He further contends the world has immense unused agricultural and mineral resources that could support a growing population. He even claims the empirical relationship between the growth rate of a population and that of per capita income is, infact, positive (GILLIS et al, 1982:177). Though a proponent of this view, Stanford economist Julian SIMON seems to have become somewhat cautious with time. For him, a moderate rate of population growth is beneficial in the long run, although it may be harmful in the short run.

Some other supporters of rapid population increase advance arguments laden with political undertones, such as claiming that the outcry against high population growth rates is racially motivated since high population growth rates is an LDC phenomenon while the call for fertility decline originated with the DCs. Others view it as a ploy by the DCs to sustain underdevelopment in the LDCs. Still, some think the DCs are scared the huge populations of the LDCs could invade their high quality of life in one way or the other, particularly given that out-migration to the USA, Canada, New Zealand, and Australia was a major solution to what might have been the population problem of Europe.

The argument against high population growth rates for developing countries hinges on a variety of factors. Opponents of high population growth rates for developing countries seem to consider the arguments of proponents as a derailment of the discourse. The issue is not whether LDCs can handle their populations. Nor whether the globe can feed its burgeoning population. Rather, the issue is the quality of development, welfare, and life that developing countries with rapidly expanding populations can offer their citizens; whether any development achieved is sustainable. Quality as measured by such generally accepted social indicators as the number of people who are adequately fed, become literate, share

equitably in income growth, attain a reasonable level of quality education that enables them to be productively employed. Sustainability with regard to ensuring the net benefits of both economic growth and development are available now and for future generations. For this school of thought, slower population growth facilitates the attainment of development goals as well as makes it more possible to plan and execute more sustainable development.

Thus, depending on the school of thought espoused, varied arguments abound to either defend or condemn rapid population growth. Using sub-Saharan Africa as reference region, this paper shall attempt to shed some light on how rapid population growth can impede development.

Analysis and Findings

Current Demographic Trends in Sub-Saharan Africa

Sub-Saharan African countries, almost without any exception, are characterized by rapidly expanding populations. Since the early 1980s, most of them have been experiencing very low economic growth. Infact, in some cases, the economic growth rate has been negative for quite a number of years.

Currently, Sub-Saharan Africa countries have the highest demographic growth rates in the world. As is evident in Table 1 below, they also have the highest proportion of the less than 15 year-old age group in any population. This means their dependency ratio as per this age group is the highest. The effect of both this population growth rate and its attendant dependency ratio on development and human welfare, both now and in future, considering the low economic growth rates prevailing in these countries as measured by the growth of GDP and GDP per capita presented in Tables 3 and 4 below is self-evident and need not be overemphasized.

Table 1: Population Projections (Millions) 1990-2100

	2000	2025	2050	2100
Africa	822	1432	2001	2646
East Africa	362	651	8938	1285
West Africa	286	520	735	975
North Africa	174	261	328	386

Source: World Bank, Population and Development, 1994.

In Table 1, Africa as a region has, and will continue in the foreseeable future to have the highest annual rate of population growth. Between 1985-90 Western Africa had the highest world annual rate of growth (3.2%). Between 1990-95 Middle Africa will have the highest growth rate (3.1%). In Western Africa, Nigeria accounts heavily for the rate while in Eastern Africa the greatest contributor is Kenya. The projection for Sub-Saharan Africa till 2100 is presented in the following table.

Table 2: Regional Annual Rate of Growth of Population

	Annual Rate of Increase of Popualtion (%)	
	1985-90*	1990-95**
WORLD	1.7	1.6
AFRICA	3.0	2.8
Eastern Africa	3.2	3.0
Middle Africa	3.0	3.1
Northern Africa	2.6	2.3
Southern Africa	2.5	2.3
Western Africa	3.2	3.2

Source: *Demographic Yearbook 1992, p.103
**Demographic Yearbook 1993, p.129

Table 3: Regional Distribution of Population Per Age Group in percentage

Region	Distribution of Population by Age Group						
	<15 yrs		15-64 yrs		65+ yrs		Total
	1990	1995	1990	1995	1990	1995	
WORLD		32		62		6	100
AFRICA	45	44	51	53	3	3	100
Eastern Africa	46	46	50	51	2	3	100
Middle Africa	46	46	50	50	3	3	100
Southern Africa	39	38	56	58	3	4	100
Western Africa	46	46	50	51	2	3	100
Northern Africa	41	39	54	57	3	4	100
LATIN AMERICA	35	34	59	61	4	5	100
NORTHERN AMERICA	21	22	66	66	12	13	100
ASIA	32	32	62	63	4	5	100
EUROPE	19	19	66	67	13	14	100
OCEANIC	26	26	64	64	9	10	100
Former USSR	25	NA	64	NA	9	NA	100

Source: 1992 Demographic Yearbook, p.105 for 1990 data
1993 Demographic Yearbook, p.130 for 1995 data

Table 3, percentage distribution of population per age group, reveals that Africa also has the youngest age distribution. Infact, this percentage is at least double that of Northern America and Europe. We may be reminded here that a high percentage of the active population in Africa (15-64 years) is rural. This can be up to 90% depending on the country (MEIER 1984: 67). Among both the rural and urban populations, unemployment is extremely high. These factors are again indicative of the high dependency ratio in these struggling economies.

2. Current Economic Growth Trends in Sub-Saharan Africa

The GDP and GDP per capita are adequate indicators of the rate of growth of an economy. Development can not, of course, be measured solely by these two indicators. Development also depends on such factors as the available resources for investment and how equitably the benefits of economic growth are distributed. We can, however, gauge the rate of development of an economy from the rate of growth of the GDP and GDP per capita, ceteris paribus.

Tables 4 & 5 below reveal Sub-Saharan Africa has the worst economic performance, using the GDP and GDP per capita as indicators. The annual rate of GDP growth is positive, although low, but the annual rate of per capita GDP growth is persistently negative. Factors such as unfavorable terms of trade, debt burdens and servicing, low world prices of raw materials and cash crops, in conjunction with the high population growth rates account for the low per capita income growth rates. Thus rapid population growth as is exemplified in the economies of Sub-Saharan African countries has adverse effects on development and human welfare. The only other region in the two tables with a sustained negative GDP and per capita income growth rates is Europe (Eastern) and Central Asia. But the reason in this case is the collapse of the former USSR in 1990. This region has also ben facing a slowdown of the productive sectors which includes agriculture, industry and services sectors. It shows that the contribution of all sectors is negative in 1992 and has been declining since 1980 (see tabl 6). This has led to slow economic growth and will increase the level of poverty and unemployment in the region.

Table 4: Growth of GDP Per Annum

Region	Annual Rate of Growth of GDP (%)						
	1981-88	89	90	91	92	93	94
Sub-Saharan Africa	1.8	3.8	1.6	1.8	1.8	3.6	3.1
East Asia	8.7	6.1	6.4	7.1	8.9	8.8	7.1
South Asia	5.4	5.1	5.5	1.8	4.8	4.5	5.1
Middle East & N.Africa	0.4	2.9	2.8	2.2	4.0	NA	NA
Europe & Central Asia	2.9	2.2	-1.7	-8.5	-14.0	-10.9	-3.8
Latin America	2.1	0.9	0.0	3.3	2.3	NA	NA

Source: The World Bank Annual Report 1993, p.28.
N.B: NA = Not available

Table 5: Growth of GDP Per Capita Per Annum

Region	Annual Rate of per capita GDP Growth (%)						
	1982-88	1989	1990	1991	1992	1993	1994
Sub-Saharan Africa	-1.2	0.7	-1.5	-1.3	-1.2	-2.3	-0.7
East Asia	6.9	4.4	4.7	5.4	7.2	7.8	7.6
South Asia	3.1	2.9	3.4	-0.3	2.8	0.7	2.7
Middle East & N.Africa	2.8	-0.2	-0.4	-0.9	1.0	-1.1	-2.2
Europe & Central Asia	2.0	1.4	-2.5	-9.2	-14.6	-8.0	-7.9
Latin America	0.0	-1.0	-1.9	1.5	0.5	1.8	2.0

Source: The World Bank Annual Report 1993, p.29.

Table 6: Agriculture, Industry and Services Contribution to GDP 1980-1992

	Agriculture	Industry	Services
1980	0.7	1.6	1.5
85	0.7	0.2	0.7
86	1.6	0.2	0.6
87	-2	0.	1.3
88	-6	1.5	1.7
89	1.1	0.9	1.5
90	-0.3	0.3	0.8
91	0.6	0.2	0
92	-0.6	-0.3	0.9

Source: World Bank, Population and Development, 1994.

3. Consequences of Rapid Population Growth

The problem of rapid population growth is not simply that of numbers. It is above all a problem of development, and therefore of human welfare. Thus it involves the quality of life and material well-being of the population. Rapid population growth intensifies problems of underdevelopment and makes prospects for development much more remote. Given that development entails improvement in people's level of living, their incomes, health, education, and general well-being as well as encompasses their self-esteem, respect, dignity, and freedom to choose rapid population growth in Sub-Saharan Africa adversely affects development and its sustainability. This is because the available resources, which are characterized by a lower growth rate than that of the populations are utilized more rather to meet the current needs of the larger population than in investments for greater productivity and improved welfare.

Eventhough rapid population growth may not be the "villain" in hindering development, it is certainly a major factor. It has adverse social and economic effects on development. In addition to the economic and social effects, rapid population growth may have negative political effects and interacts negatively with education, health, welfare and the quality of the environment.

Economic Consequences

Sub-Saharan African countries are characterized by a demography with high dependency ratios. The high dependency ratios are principally made up of people less than 15 years old (Table 3), which in some countries account for up to 50% of the population (MEIER 1984:570). There are cases where the number of economic dependents per worker exceeds six whereas in some developed countries (DCs) the ratio of dependency is one person to two workers. Moreover, in many DCs, a significant proportion of the dependents are those who are over 65 (Table 3). This group of dependents have contributed to the economy before and have some savings. This reduces their economic costs on those they depend on, as well as on society as a whole.

In Sub-Saharan Africa, the number of young people reaching the age of labor force participation are, of course, also rapidly increasing. This and the high dependency ratio of the less than 15 years age group have serious economic consequences.

A high population pressure not only has an adverse effect on improvement in food supplies, but also intensifies the constraints on development of savings, foreign exchange, and human resources.

High population growth rates coupled with low economic growth rates, a characteristic of most Sub-Saharan African countries, constrain the amount of resources available for investment. This can be seen by looking at table 7 that shows Gross Domestic investment per Capita. Economic and income growth which are components of development and indicators of human welfare are adversely affected as a result. Even countries endowed with natural resources may have serious difficulties developing the human skills and administrative structures needed to exploit these resources.

Table 7 Per Capita Consumption and Per Capita Domesitc Investment

Year	Per capita Private Consumption US Dollar	Gross Domestic Investment per Capita US Dollar
1980		120
1985	360	100
1986	350	100
1987	340	90
1988	330	100
1989	330	100
1990	320	90
1991	320	80
1992	320	80

The per capita total consumption declined from US$ 360 in 1980 to reach US$ 320 in 1992 showing about 11.1% declined (World bank 1994), as shown in table 7.

As we know that domestic investment will be directly affected by the trends in the rate of domestic saving. As a result gross domestic investment to GDP declined from 26.7% to 14.7% during the same period, as shown in table 8. The table indicates a decline in gross domestic investment.

Table 8: Gross Domestic Saving and Gross Domestic Investment / GDP in Sub-Saharan Africa between 1980 - 93

	1980	85	86	87	88	89	90	91	92	93
Gross Domestic Saving/GDP	26.7	17.4	17.6	19.2	18.2	18.7	19.71	16.6	14.8	14.8
Gross Domestic Investment/GDP	23.8	14.9	17.6	18.5	18.8	18.3	17.7	16.6	16:0	15.7

Source: African Development Indicators, 1994-1995.

As stated earlier, most of these countries are characterized by a high dependency ratio. A reduction in fertility, according to an analysis by Coale & Hoover with their Dynamic Model of Population Growth (GILLIS et al.: 1975), will help growth in per-capita income in two ways. First, slower population growth would lower the dependency ratio, thus reducing consumption and increasing saving at any given level. Second, as the labor force growth slows later, given the reduction in the number of workers, more capital per worker could be invested leading to a more efficient work force. These two benefits would be felt both at the family and national levels.

Rapid population growth slows down the growth of per capita income in these countries and tends to perpetuate inequalities of income distribution. The level of savings per capita is depressed because household savings (the largest component of domestic savings) is reduced by high dependency burdens (see table 8). The level of capital investment in the means of production is held down and as a result the GDP growth rate stagnates.

Rapid population growth requires higher food supplies and agricultural production, somehow constraining the allocation of resources to other economic and social sectors. Infact, in some of

these countries, the per capita food supply has so lagged behind the population growth rate that a significant amount of food has to be imported, resulting in a drain on scarce savings and foreign exchange reserves.

Table 9: Food and Agricultural Raw Material Imports for Sub-Saharan Africa in US$ Millions

	Food Imports	Agricultural Raw
1980	7283	888
1985	5473	652
1986	5344	807
1987	5128	926
1988	6305	1102
1989	6264	1121
1990	6232	1165
1991	6481	1204
1992	6961	1321

Source: World Bank, 1994.

The above table indicates that Sub-Saharan Africa for imports surged from US$ 5473 million in 1985 to US$ 6961 million in 1992 representing about 30.3% increase, coupled by the rapid increase in agricultural raw materials imports. This will lead to drain the foreign exchange earning due to the availability of agriculture sector to supply the level of food supply.

Capital Widening/deepening

In a rapidly growing population, as is the case in Sub-Saharan African countries, capital widening (spreading out of available resources for more people) is needed to maintain capital per person. This can be seen by looking at table 8. This table showed that domestic investment declined by 44.5%, from 26.7% of GDP' in 1980 to 14.8% in 1993. Accordingly, domestic investment also deteriorated from 23.8% of GDP to 15.7% during the same period. This led to a decline in the capital available to increase the productive capacity of the output. This results in low per capita

spending in education, health, and other social services. The most affected are the poor. But a slower population growth would release investable resources for capital deepening thus increasing capital per person. Rapid population growth depresses private savings, necessitates more capital widening and hampers capital deepening that would raise productivity and per-capita income. Even in LDCs with low population densities, rapid population growth can stress scarce capital resources and inhibit capital deepening and efforts to improve public services.

The Labor Force

Capital deepening and the associated absorption of a better skilled labor force into the modern sector enhances economic growth and development. Rapid population growth slows the accumulation of skills that encourage technological advances, and insofar as there are diminishing returns to land and capital, is likely to exacerbate income inequalities. Although technical progress may accompany rapid population growth, slower population growth would make it faster through more rapidly rising average incomes and capital deepening due to the rapid population growth and give that education enhances the labour productivity, therefore we use primary school enrollment as a proxy measure for school enrollment declined from 71% in 1980 to 66% in 1990. The male school enrollment declined from 87% to 79% while female school enrolment reached 64% in 1990 compared to 79% in 1980. If the situation continued in the future will impose a constraint on the labour productivity and hence on GDP growth rate. This may also lead to increase the level of poverty in this region.

The labour force participation rate and age restructure can be useful tools to assess their expected impact on the development process in this region. The age group of 10-19 years declined from 22.5% in 1985 to 21.6% while age group of 20-29 increased slightly by 1% during the same period. The force participation non the other hand declined to 41% in 1990 compared to 44.6% in 1975. This may lead to increase the burden on the economy.

Rapid population growth leads to a rapid growth in the labor force resulting in greater capital widening, the end result of which

includes a poor quality and unskilled labor force characterized by inefficiency and low productivity. Any labor force with a significant proportion that is inadequately educated necessarily has a low productivity. Low productivity contributes to low GDP and per capita income. Rapid labor force growth increases various forms of unemployment, including invisible underemployment consisting of part-time and low-productivity workers whose skills would permit higher productivity and earnings if better jobs were available. This is estimated to be up to 40% in Africa (World Development Report 1984 : 87).

The Labour Fore Situation in Sub-Saharan Africa is shown in tables 9 & 10.

Table 9: Age Structure of the Labour Force

Percentage distribution according to age groups

	1985						1990					
	10-19	20-29	30-39	40-49	50-59	60+	10-19	20-29	30-39	40-49	50-59	60+
SUB-SAHARAN AFRICA	22.5	27.5	20.1	14.1	9.4	6.3	21.6	28.5	20.5	13.8	9.2	6.1
excluding South Africa	22.5	27.5	20.1	14.1	9.4	6.3	21.6	28.5	20.5	13.8	9.2	6.1
excl. S. Africa & Nigeria	22.5	27.5	20.1	14.0	9.4	6.3	21.6	28.5	20.5	13.8	9.2	6.1

Table 10: Labour Force Participation Rate

Percentage of Population of all ages in the labour force

	Total				Female				Male			
	1975	1980	1985	1990	1975	1980	1985	1990	1975	1980	1985	1990
SUB-SAHARAN AFRICA	44.6	43.6	42.3	41.0	35.2	34.1	32.4	30.8	54.8	53.8	52.8	51.7
excluding South Africa	44.6	43.6	42.3	41.0	35.2	34.1	32.4	30.8	54.8	53.8	52.8	51.7
excl. S. Africa & Nigeria	44.7	43.7	42.4	41.1	35.3	34.2	32.6	30.9	54.8	53.9	52.8	51.8

Source: African Development Indicators, 1994-1995.

Table 11: Primary School Gross Enrolment Ratio

	Total			Males			Females		
	1980	1986	1990	19/0	1986	1990	1980	1986	1990
SUB-SAHARAN AFRICA	77	66	66	87	75	79	66	61	64
excluding South Africa	77	66	66	87	75	79	66	61	64
excl. S. Africa & Nigeria	70	66	65	79	75	77	59	61	65

Source: African Development Indicators, 1994-1995.

In Sub-Saharan Africa, both the urban and rural populations have been growing rapidly, posing the problem of creation of more productive employment for urban dwellers and absorption of more workers from the rural economy. In 1980, the share of the labor force in agriculture in this region of the world was between 80-90% of the total labor force (World Development Report 1984 : 88).

Table 12: Urbanization

	Total population (millions)			Average annual Percentage growth of total population			Urban population as percentage of total population			Average annual percentage growth of urban population		
	1980	1986	1992	75-79	80-85	86-92	1980	1986	1992	75-79	80-85	86-92
SUB-SAHARAN AFRICA	380.1	453.3	541.4	2.9	3.0	3.0	23.4	26.2	29.4	5.1	4.9	5.0
excluding South Africa	350.5	418.9	501.7	2.9	3.0	3.1	21.3	24.4	27.8	5.6	5.3	5.3
excl. S. Africa & Nigeria	279.4	333.2	399.8	2.9	3.0	3.1	19.8	24.4	25.4	5.5	5.1	5.3

Source: African Development Indicators, 1994-1995.

The transfer of labor out of agriculture, considered one of the steps toward development since it necessarily entails a higher income, more consumption and greater access to more and better social services for the transferred labor force -- is likely going to continue to be very slow, not just because of their initial low shares in the modern sector employment but more so because of high population growth rates and hence of labor force. This situation is going to be worsened by the fact that most of these economies have been growing at a negative or very low rate during the past few years. Moreover, any successes in reducing fertility in the near future will take more than a generation to have a visible impact on

the population growth rate because of the hidden momentum of these populations. With the Structural Adjustment Programs (SAP) currently being implemented in the majority of these countries, most of them are even incapable of maintaining the level of capital widening of yesteryears, let alone conduct capital deepening. This will have a serious effect on school enrollment ratios and particularly quality education, as well as on the quality of future labor force.

In Sub-Saharan African countries, scarce capital has often been subsidized, especially in the state enterprises, ironically indirectly discouraging labor-intensive production which most of these countries have policies to promote as a means of curbing unemployment. Such policies equally indirectly encourage the inefficient utilization of the scarce capital. Rapid population growth also makes efficiency harder to attain because social and political pressure leads to the employment of many unskilled and inadequately educated youths in the public sector and sometimes regulations hindering the private sector from reducing its work force are in place.

Trade

Low labor productivity, rising demand for food, and slow industrialization are some of the factors that distort and degrade the international trade of these LDCs.

In the world of today, evidence indicates countries with export-oriented trade policies and a relatively skilled labor force are those doing well in international trade. In Sub-Saharan Africa with rapidly growing populations, the accumulation of physical and quality human capital through capital deepening to ensure the expansion of export capability is inadequate and will likely become relatively more difficult to achieve.

Population pressure can likely intensify the foreign exchange constraint of any country by placing more stress on the balance of payments, for example, if scarce resources have to be used to pay for the importation of more food and equipment like medical equipment for a larger population.

Sub-Saharan African countries rely mostly on the export of raw materials and cash crops for foreign exchange. Some of these raw materials such as oil will deplete with time and are being extensively exploited now to meet the needs of an ever growing population. The possibilities of investing in industrial plants that could transform some of the raw materials and cash crops on the spot for more value, as well as create jobs are constrained by the fact that a significant part of the current resources must be allocated to meet current social needs. The terms of trade are thus likely going to continue to degrade. The table (13) shows merchandise export and import for sub-Saharan Africa, it should be noted that the decline in exports can be attributed to a wide range of factors besides population and it will be misleading to see that population is the only cause. The exports of merchandise declined by 20.1% during 1980 to 1993, while imports declined by 9%. This situation will impose a heavily constraint on foreign exchange earnings and will slow GDP growth rate.

Table 13: Merchandise Exports and Imports for Sub-Saharan Africa (Million US$)

	80	85	87	88	89	90	91	93
Export	79428	53484	54277	56086	58881	68609	66606	63475
Imports	61830	39405	43760	49265	49153	56823	58187	56266

Source: African Development Indicators, 1994-1995.

Socio-political Consequences

Large-scale internal migration and rapid urbanization are some of the social effects of rapid population growth. Continuing widespread poverty, one of the hallmarks of rapid population growth, impedes social mobility. Because only a small fraction of the growing population can be eventually absorbed into the modern sector which has a higher income, the gap between the incomes of the rich and the poor will continue to widen. The rural-urban migration which is partly caused by rapid population growth and its attendant increased demands for government provided social services, such as health, education, and welfare increase political and administrative stress.

Political and social conflicts of varied nature worsened by rapid population growth through vying for relatively scarce, misallocated, and misdistributed resources. Demographic factors, such as age structure shifts, migration, and changing ethnic balances will continue to exacerbate political and economic problems in these countries as they struggle to provide adequate resources and services to their growing and changing populations.

Changes in population size and structure will fuel future demand for key resources, including education, health care, employment, and housing. The majority of these countries, if not all, will have difficulty dealing effectively with this increased demand, causing social tension to rise. The emergence of a "youth bulge" (a relatively high proportion of young adults aged 15-24) in most of these countries may contribute to instability if governments are unable to deal with increased demand for education, employment, health, housing, and in some cases land ownership. According to the U.S. Department of State (1994), most countries of Southern, Central, and Eastern Africa have already developed a regional youth bulge that is forecast to reach higher levels and last longer than in any other region of the world.

Although rapid population growth may not be the major causal factor in the increase in violence and aggression, the large proportion of young people, especially the unemployed or those who have little hope for a satisfactory future often constitute a disruptive and potentially explosive political force. This has been quite evident during the recent and on-going clamor for democracy.

With a rapidly expanding population, the need for social infrastructure has to broaden, and public expenditures must be absorbed to provide them. Because the number of children grow even more rapidly than the total population, the need for educating ever larger numbers inhibits improvement in the quality of education. High proportions of children results in capital widening.

The costs, adequacy, and nature of health and welfare services are affected by rapid population growth in much the same way as are those of educational services. At the family level, maternal

mortality and morbidity are increased by high fertility, early and frequent pregnancies, and the necessity of caring for excessive numbers of children. In large families, inadequate nutrition and poverty-associated diseases, as well as deprivation of sufficient adult contact are associated with the retardation of the physical and mental development of children. Rapid population growth intensifies the extent of absolute poverty and the maldistribution of income.

A rapidly expanding population also causes international migration. Receiving countries usually set conditions to meet their own needs. On the other hand, except for those migrating to the rich oil-exporting Gulf states, quite some of those in these LDCs whose services will sell in the DCs and who meet the conditions set by the receiving countries and can afford the finances required for migration, constitute the cream of the professionals. The brain drain, as the phenomenon is known, is more than the loss of expertise the name denotes. The education of these expert professionals was subsidized by the sending countries from their scarce resources. Once migrated, their governments do not have the opportunity to tax the incomes of these skilled individuals nor to utilize their skills for the local economy. Furthermore, the departure of highly skilled workers creates unemployment for their less skilled subordinates.

Environmental Consequences

Rapid population growth necessitates rapid increases in agricultural production, both of crops and livestock. In extensive agriculture, the principal practice in Sub-Saharan Africa, this leads to increase in erosion, soil and water deterioration, the destruction of wildlife and natural environment. Pollution caused by the indiscriminate use of pesticides and agri-chemicals has adverse effects on people and animals as well as degrades the environment.

Population pressure can contribute to environmental degradation, especially when combined with certain non-demographic factors. This is accentuated by relatively rapid, poorly planned and sometimes uncontrolled urbanization, coupled in some cases with weak or no

legislation on industrial pollution. Weak or no legislation on industrial pollution could be deliberate so as to encourage national or attract foreign investments as a means of reducing unemployment through the creation of more jobs and increasing revenue through the taxes likely to be generated by the process. This situation is quite current in some Sub-Saharan African countries.

A recent phenomenon in some of the cash-strapped countries of Sub-Sahara Africa has been the acceptance of toxic wastes, for cash, from DCs' waste treating companies. This is environmental pollution of untold magnitude. Nonrenewable resources are being depleted at an accelerated rate without adequate constitution of substitutes.

An unequal access to farmland with better soils helps push growing populations into ecologically vulnerable lands such as erosion-prone hillsides, semiarid savannas, and tropical forests. These phenomena are occurring in Sub-Saharan Africa, even though documented evidence emphasizes deforestation and decertification. In the rural areas, which constitute at least 70% of each of these countries, some of the increase in the demand for energy and farmland is satisfied through deforestation. It must be underscored that greater deforestation is probably caused by logging companies than by rural farmers. The government in some of these countries have very poor legislation on clear-cutting by logging companies which in most cases are foreign companies that are only there as long as there are commercial trees to be felled. Controlling logging is more problematic in some countries when several ministries can issue logging permits but no ministry is adequately empowered to control excessive and environmentally destructive and unsustainable logging.

To meet the rising animal protein needs as the population keeps increasing rapidly there is often overgrazing since the degree of intensive livestock farming is still limited.

The combined effects of these activities are such environmental damage as acidification of farmlands, decertification, and deforestation. The last two effects, which are rampant in Sub-

Sahara Africa, are well known causes of global warming with its attendant effects.

The costs of decertification often include malnutrition, famine, and the dislocation of people. To alleviate these ills, governments often have to divert scarce resources that would have been productively invested in other projects, thus retarding development.

Conclusion

Population and development are intertwined in many ways. Although the effects of rapid population growth may vary, depending on such factors as the institutional, economic, cultural, and demographic setting, the evidence herein discussed reasonably reveals that rapid population growth as exemplified in most countries of Sub-Sahara Africa may not be the "villain" in flowing development but is all the same a likely principal causal factor.

At the family level, high fertility reduces the amount of time and money devoted to each child's development. It is more difficult to fight poverty in a population with rapid growth rates because the poor generally have more children and because when public services cannot keep pace with population growth the poor benefit less from government spending on services they use most such as health and education. This is the likely case in Sub-Saharan African countries, because most of the poor belong to the rural world but a high proportion of government spending in the social sector goes to urban areas. This can easily be verified through a comparison of the school enrollment ratios, number of people to a doctor, number of pupils to a teacher, access to other services and education at the elementary/secondary levels in the rural and urban areas. This unequal development can only exacerbate the situation since it can lead to more rural-urban migration.

At the level of society, rapid population growth erodes macroeconomic performance by making it more difficult to finance investments, human resource development, and infrastructure that would ensure a sustained economic growth which is a prerequisite for development.

The negative rate of growth of the GDP per capita is partially caused by the high population growth rate prevailing in Sub-Saharan Africa. Thus, high population expansion is one of the reasons for which development is occurring with significant difficulty despite the rich endowment of some of these countries in natural resources. Rapid population growth is certainly not the sole factor responsible for the observed GDP and per-capita GDP rates, but it definitely contributes to the situation.

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