



Nigeria: The Next Generation – Literature Review¹

May 2009



¹ This literature review was undertaken as a part of the Nigeria: The Next Generation project, funded by the British Council Nigeria. The review was prepared by Akochi Agunwamba, David Bloom, Abby Friedman, Marija Ozolins, Larry Rosenberg, David Steven, and Mark Weston.

Table of contents

Introduction.....	4
The Literature Review	7
Geography and Resources	7
Regional Profiles.....	8
North-South Comparison	10
North East and North West Regional Profiles	12
North-Central Regional Profile	14
South East and South West Regional Profiles	15
South-South Regional Profile.....	17
Social Tensions and Violence.....	19
Government and Governance	22
Economy.....	23
Basic Economic Indicators	23
Resources and Industry	25
Poverty and Inequality.....	27
Oil and Gas	29
Environmental Problems	30
Economic Governance.....	32
Doing Business in Nigeria	34
Population.....	36
Population size and trends.....	36
Urbanization, Population Pressure, & Migration	41
Fertility & Population Policy.....	43
Health	45

The Health System.....	45
Overall Health Indicators.....	49
Child Health.....	50
Immunization.....	51
Safe Water Access.....	53
Climate Change	53
Malaria	54
HIV/AIDS.....	54
Tuberculosis.....	57
Other Diseases	57
Gender and Health.....	58
Education.....	63
Conclusion	66
References	67

Introduction

Nigeria is poised to enter a period marked by both opportunities for growth and challenges to overcoming myriad barriers to development. Understanding basic indicators, demographic patterns, and the social and political milieu in Nigeria is critical to recommending effective and appropriate policy. This background report and literature review provides source material for later phases of the *Nigeria: The Next Generation* project, and serves as a working document that will expand as the project proceeds.

This review takes stock of existing academic publications, various media outputs, and reports produced by the Nigerian government and international agencies. Searches were conducted using Google Scholar and a set of published articles assembled by the research team at Harvard University about Nigeria and key concepts related to the project. The review focuses on literature related to economic and social development in Nigeria.

Based on this literature review and other resources, key project personnel will define a focus and produce several significant academic research papers addressing Nigeria's demographic dividend and key aspects of the country's social and political environment. The literature will identify policies that Nigeria could adopt to promote rapid and equitable development while simultaneously stimulating discussion within Nigeria about such policies. This ultimate focus on policy recommendations requires that this review include an objective and thorough analysis of the challenges and troubles that Nigeria faces today, as well as forthright scrutiny of the country's economic, demographic, political, and social climate.

Key findings

- Nigeria is Africa's most populous country, with a population of 148 million in 2007 (World Bank 2008d). Despite a declining fertility rate, the United Nations (UN) projects that the population will increase to 210 million individuals in 2025, and 289 million in 2050. The bulk of these increases will be in the working-age population. The dependency ratio is expected to fall from 0.90 dependents per worker in 2005 to 0.50 in 2050 as the median age rises from 17.2 to 28 (UN Population Division 2006).²
- Nigeria's urban population is growing at 3.78 percent per year, as compared to Sub-Saharan Africa's overall rate of 3.67 percent. As the 2005 proportion of urban dwellers (46.2 percent) exceeds that of Sub-Saharan Africa by more than 10 percentage points, Nigeria may face greater challenges in dealing with rapid urbanization than its neighbors (United Nations Population Division 2008).

² The dependency ratio refers to the total number of individuals under age 15 or over age 65 divided by the number of individuals ages 15 to 64 (i.e., the ratio of the number of individuals not at the traditional working ages to the number of individuals in that age band).

- Current life expectancy estimates for Nigeria differ across data sources, but generally place it around 47 or 48 years (WHO 2008; World Bank 2008d). The most recent World Health Organization (WHO) figures indicate a 2006 infant mortality rate of 99 per 1,000 live births.
- The WHO ranked Nigeria's health system 187 out of 191 countries in 2000 (DFID 2004). Per capita public spending on health was \$10 per year in 2006, well below \$34, the cost of the "set of essential interventions" as calculated by the WHO Commission on Macroeconomics and Health (WHO 2008; WHO 2001).
- In Nigeria, over a million children die each year from preventable diseases (Ngowu et al. 2008). While under-5 mortality is diminishing, down from 206 per 1,000 in 1990 to 191 per 1,000 in 2005, this is among Africa's slowest declines, and the 2005 figure still exceeds the Sub-Saharan average (WHO 2008). As of 2000, the main causes of death in children under-5 were, aside from the 26.1 percent due to neonatal causes (which may or may not have been associated with infections), malaria (24.1 percent), pneumonia (20.1 percent), diarrheal disease (15.7 percent), and measles (6.3 percent) (WHO 2006).
- Gender inequality in Nigeria is among the highest in the world, reflecting an education gap and significant threats to women's health. Contributing to this disparity are widespread sexual violence and battery, female genital mutilation (FGM), and high maternal mortality rates. Low rates of antenatal care, lack of access to skilled birthing practitioners and unsafe abortions contribute to the poor state of reproductive healthcare in Nigeria.
- Net primary school enrollment, for which Nigeria ranks 125th out of 130 countries, was just 63 percent in 2005, with slightly more than 8 million primary school-aged children not enrolled in school (World Economic Forum 2008; World Bank 2008d). Even within schools, illiteracy is high: among primary school children, only 45 percent in urban and 19 percent in rural areas can read a simple sentence (World Bank/DFID 2005).
- Nigeria accounts for 14 percent of Sub-Saharan Africa's GDP, yet over half of the country's population lives on less than US\$1 per day (World Bank 2008; IMF 2007).
- Nigeria is the most oil-dependent country in the world as measured by oil's share in exports. In addition, oil is mostly exported as a crude product, thereby bypassing opportunities for domestic refinement and the creation of value-added industries as well as employment opportunities for Nigerians (CIA 2008).
- Only 35 percent of Nigeria's land is arable, amounting to fewer hectares per person than Sub-Saharan Africa as a whole (World Bank 2008d). The World Bank asserts that "agriculture is critical to any sustained improvements in Nigeria's growth performance." For agriculture to be a sustainable and productive source of

livelihood, Nigeria must address the problems of land degradation, damage to the environment, and destructive farming methods.

- Oil pollution in Nigeria has resulted in significant environmental degradation and has contributed to social conflict. Although the country's Petroleum Act urges companies to take "all practicable precautions" to avoid polluting, it does not include sanctions against polluters (Akpan 2006).
- While Transparency International ranks Nigeria 121st out of 180 countries in its annual Corruption Perceptions Index, the World Bank reports good progress against corruption in the past four years (Transparency International 2008). The country has been removed from the Financial Action Task Force on Money Laundering list of non-complying countries and is implementing the Extractive Industries Transparency Initiative, which aims to strengthen governance by improving accountability in the extractives sector (World Bank 2008).
- Regional, ethnic, and religious politicization are evident in Nigeria. The extent of religious and ethnic tensions is often attributed to governmental failure to cultivate a strong national identity (Ikpeze et al. 2004; Rotberg 2004; Rotberg 2007).
- The picture of Nigeria as a whole does not always reflect the various realities of each region; natural resources, population dynamics, ethnic and religious distribution, urbanization, wealth, and other factors all vary by geography. Regarding Nigeria as a cohesive unit across which policies can be evenly applied would not only generate inefficient approaches to critical problems, but may also fail to effectively address key challenges in the country's most troubled regions.

The Literature Review

Geography and Resources

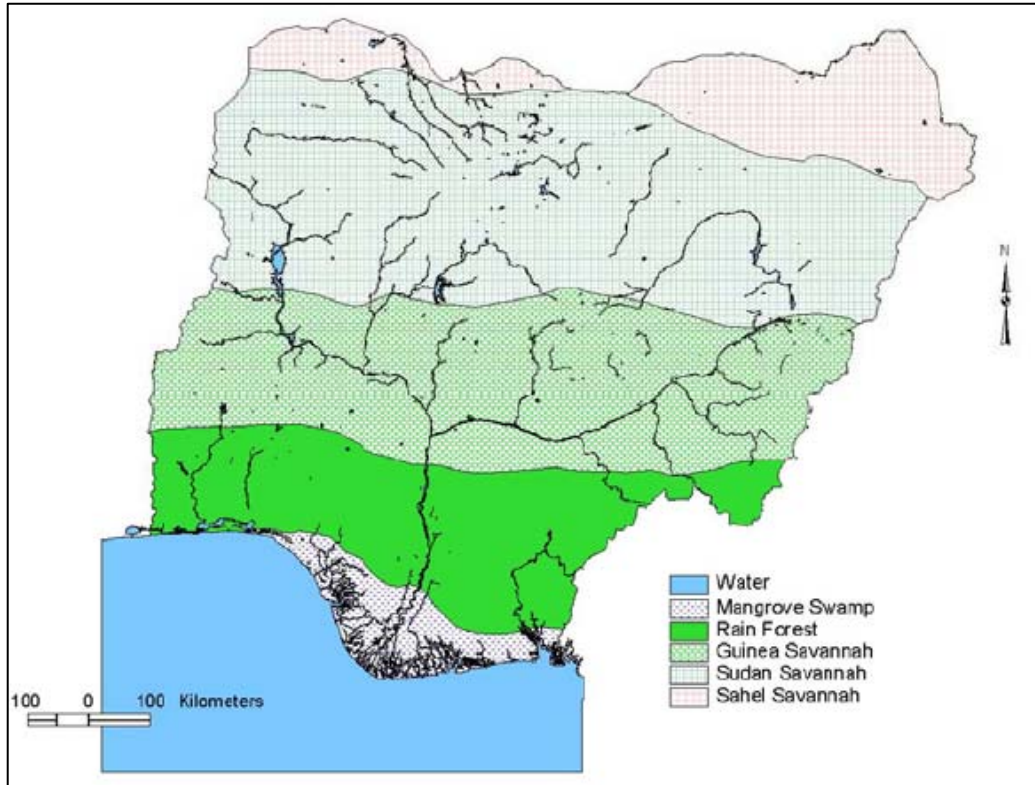
Bordered by Benin, Cameroon, Chad, Niger and 853km of coastline on the Gulf of Guinea, the Federal Republic of Nigeria covers 910,768 square kilometers of land in West Africa. Northern plains contrast with lowlands in the southwest, mountains in the southeast, and central hills and plateaus (CIA 2009a). Abuja, the capital of Nigeria, is located in the country's center, while Lagos, which was Nigeria's capital until 1991, sits on the coast. The latter city remains the country's economic and financial capital, as well as a major port city. It is also Sub-Saharan Africa's most populous city, and projected to surpass Cairo as Africa's most populous city by 2025 (United Nations Population Division 2008).

Figure 1: Map of Nigeria (CIA 2009b)



While the country is divided into three geographic regions by its two major rivers, the rivers Niger and Benue, the more determinative divisions may be those shaped by rainfall, which is heavier and lasts longer in the south than the north. The ecology shifts along with decreasing annual rainfall, from coastal mangrove swamps in the south (2500mm to 4000mm) to rainforest (1500mm to 2500mm), to Guinea savannah (1200mm to 1500mm), to Sudan savannah (760mm to 1020mm), and to Sahel savannah in the north (380mm to 700mm). Nigeria relies most heavily on the Guinea savannah for food production, though both its north and the Sudan savannah's south produce cereals for livestock and human consumption. Savannah land further north constitutes the primary grazing zone, while cash crops like cocoa and rubber play a key role in rainforest agriculture in the region just south of the Guinea savannah. The coastal mangrove swamps support fishing, when not inhibited by pollutants (Fasona and Omojola 2005).

Figure 2: Nigeria's Ecology (Fasona and Omojola 2005)



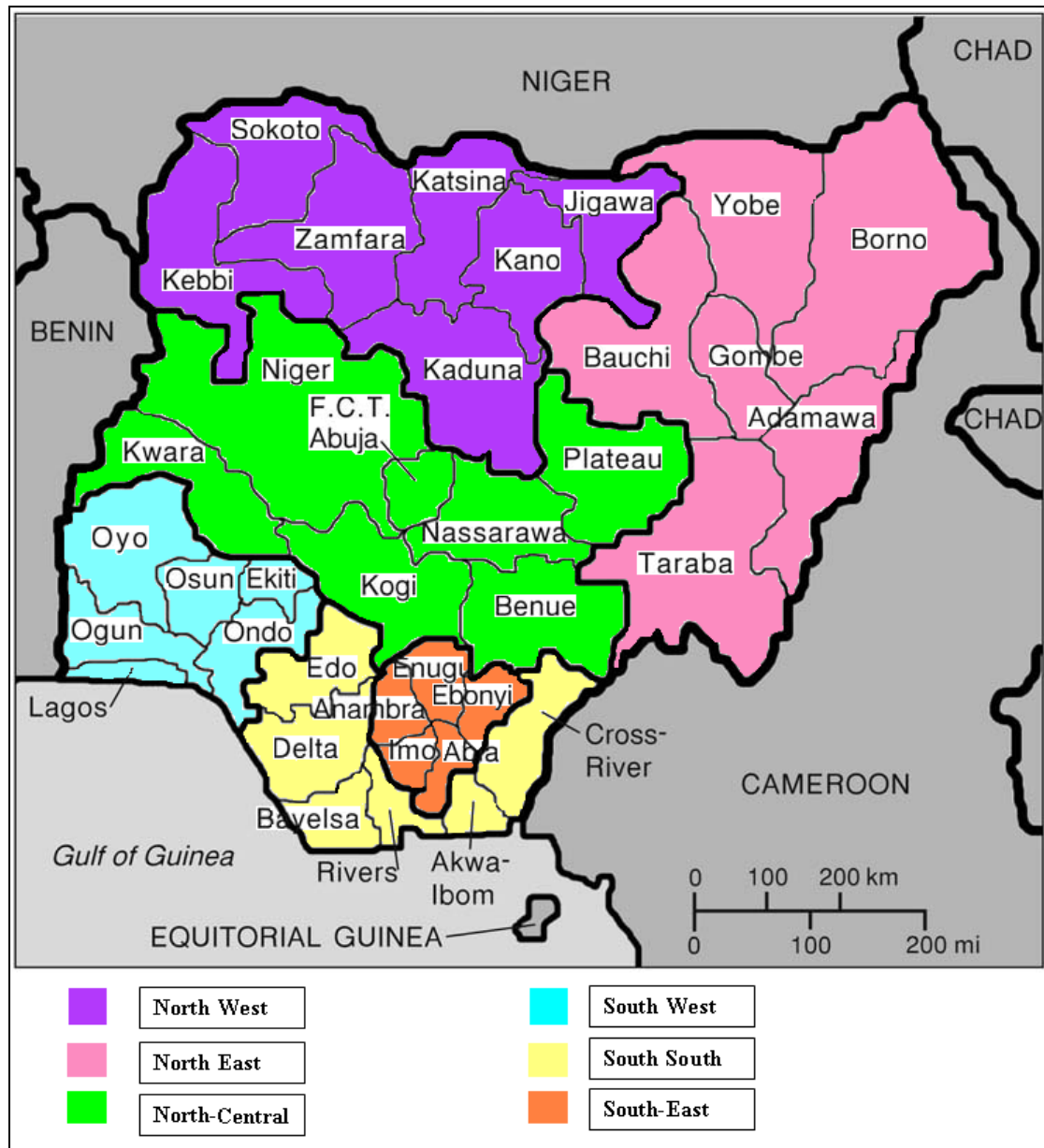
Nigeria's diverse ecology (and thus, its agricultural productivity) is threatened by land degradation on all sides, particularly due to desertification in the north and coastal erosion in the south (Fasona and Omojola 2005). Despite being crossed by the Niger river, which flows from Nigeria's northwest through the south to the Gulf of Guinea, Nigeria had only 2820 square-kilometers of irrigated land as of 2003 (CIA 2008). While 81 percent of the land is used for agricultural purposes, only 35 percent of Nigeria's land was arable as of 2005, amounting to fewer hectares per person than the Sub-Saharan African average (World Bank 2008d). Periodic droughts and floods threaten this share, as does pollution, particularly that associated with the oil industry.

Regional Profiles

Formally, Nigeria has six regional zones: North East, North West, North-Central, South East, South West, South-South (See Figure 3).³ These regional divisions reflect varying ecologies and climates, along with differing population characteristics. Analyses of Nigeria as a whole often overlook the varied realities of distinct regions, across which the distribution of natural resources, ethnic and religious groups, and a myriad of other factors may differ.

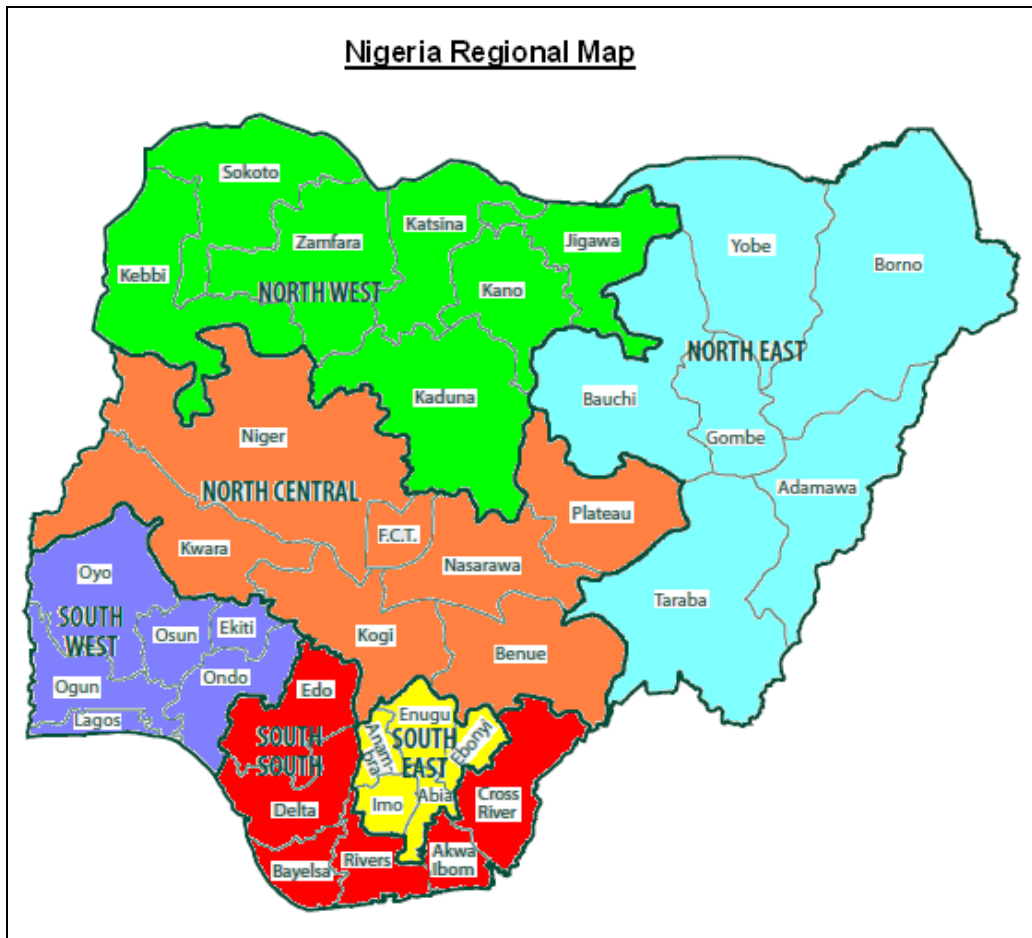
³ Throughout this paper, the specific regional zones will be spelled as in Figure 3. Use of a capitalized "North" or "South" will refer to those three regions whose names begin with "North" or "South". North and south written in lowercase, as well as references to the southeast, northwest, etc., refer to the indicated general area of the country but not a specific regional zone.

Figure 3: Nigeria's States and Regions (adapted from Sklar et al. 2006)



Understanding regional distinctions is somewhat complicated by the controversy surrounding Nigeria's census. The federal budget's allocation of funding to states and local governments, on which these regions are almost completely dependent, is strongly tied to population size. The outcome of national elections is also affected by census results, as these numbers influence the allocation of legislative seats for each region. Accusations by the South or North that one region's respective population size has been exaggerated at the expense of the other's are particularly common.

Figure 4: Nigeria Regional Map (adapted from National Population Commission [Nigeria] and ORC Macro 2004)



North-South Comparison

Before delving into regional divisions, a discussion of the greater North-South divide is warranted. Historically, the strong presence of Islam in the North (from the 11th century), early interactions with Christian missionaries in the South (mid-19th century), and British colonial policies laid the foundation for North-South regional divisions in infrastructure, religion, educational systems, gender norms, and a variety of other factors. Geographic differences have also played a role in the divide. An arid climate and proximity to the Sahara Desert renders the North more vulnerable to the effects of climate change, while the oil industry in the Niger Delta furthers violence and results in environmental damage in the South.

Considering economic evidence, the North displays a disproportionately higher percentage of peasant households than the South. The combination of extensive poverty, food insecurity, poor health, poor infrastructure, and low levels of education in that region has resulted in livelihoods less easily adaptable to change (Asadurian et al. 2006; Adejuwon 2008). In a 2007 address, the Governor of the Central Bank of Nigeria noted that all of the 10 states with the highest incidences of poverty in Nigeria were from northern regions,

whereas all of the 10 states with the lowest incidence were from southern areas (Soludo 2007).⁴

Based on the National Bureau of Statistics' September 2003-August 2004 Nigerian National Living Standards Survey, households in the North East and North Central appear to be the poorest. Approximately 64 percent of Nigeria's total poverty is attributed to the northern regions, which represent only around 53 percent of the country's population. Those in the South East and South West exhibit relatively better household well-being (Araar and Timothy 2006).⁵ Given the higher total fertility rate in Nigeria's North, the apparent association between household size, low educational attainment, and poverty may help explain regional poverty differentials (Soludo 2007; Adejobi et al. 2008; Measure DHS 2004).

Measures of healthcare access with direct implications for morbidity and mortality, such as maternal tetanus vaccination coverage and access to antenatal care, fall far shorter in the North than in the South. Maternal tetanus vaccination coverage stands at less than 40 percent in both the North East and North West, as compared to more than 75 percent in both the South East and South West. While more than 50 percent of women the North East and North West give birth without receiving any antenatal care, fewer than 10 percent do so in the South East and South West (Ali-Akpajiak and Pyke 2003). Additionally, measures of achieved and desired fertility are both much higher across the Northern regions than in Southern regions (See Table 1). This has implications for not just family size and maternal mortality, but for educational attainment, income, child health, and numerous other factors.

Table 1: Fertility Indicators by Region (National Population Commission Federal Republic of Nigeria 2004)

Region	Total fertility rate	Total desired fertility rate	% 15-49 year-olds currently Pregnant	Mean # children born to women 40-49	% of 15-19 year-olds who were:		%married women who want no more children	Married women using any contraceptive method	Men with more than 1 wife	Ideal # children per woman
					Mothers	Pregnant with 1 st child				
North West	6.7	6.6	16.2	6.7	36.9	8.3	6.5	4.9	24.0	8.6
North East	7.0	6.7	14.2	7.4	38.1	6.3	16.3	4.2	29.6	7.8
North- Central	5.7	5.2	9.4	7.4	13.8	2.6	24.1	13.3	22.9	6.2
South West	4.1	3.9	6.0	5.5	4.1	0.6	29.9	32.7	13.1	4.8
South East	4.1	3.5	6.8	6.8	5.3	0.8	31.6	22.5	8.2	5.3
South-South	4.6	3.9	9.0	6.9	11.3	3.0	31.6	25.4	22.5	5.5

Family planning has been regarded with apprehension by some ethnic and religious groups concerned with maintaining high respective population counts in order to ensure favorable population-based resource allocations. Resistance from Muslims in the North has been notably stronger than that from Catholics in the South. Not only have such programs been perceived as encouraging "infanticide" and constituting untoward interference in internal family affairs, but the presence of Shar'ia law in 12 northern states—Bauchi, Borno,

⁴ Notably, states with lower internal revenue and higher dependence on federal allocation are also over-represented in policy making (Asadurian et al. 2006).

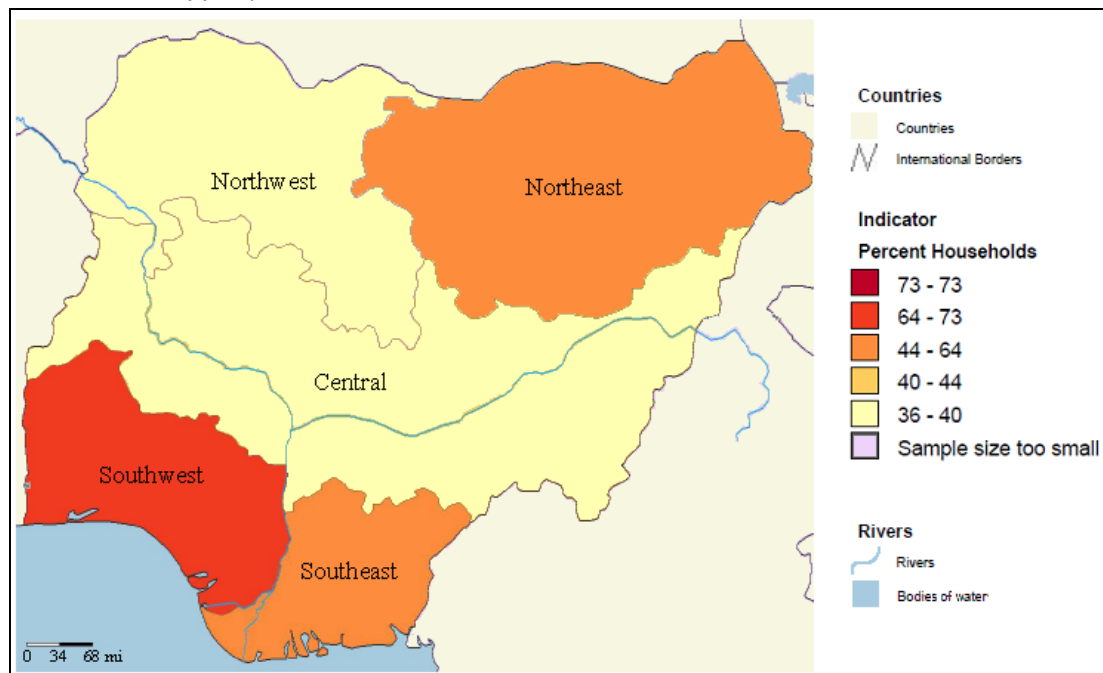
⁵ This survey covered approximately 600 households per state and a total of 22,200 households nationwide. 19,158 of these completed the survey.

Gombe, Jigawa, Kaduna, Kano, Katsina, Kebbi, Niger, Sokoto, Yobe, and Zamfara—also decreases the independence and autonomy of women in controlling frequency of pregnancy via contraception (Adegbola 2008).

When measuring educational enrollment and attainment, the northern regions have generally fared poorly relative to those in the South. Both religious and historical factors have influenced this. In 1912, there were no secondary schools in the North, though the South had 10 serving a total of 67 students. By 1965, the South boasted 1,305 schools and 180,907 students, as compared to 77 schools and 15,276 students in the North. Suspicions that Western education was a ruse for converting Muslims to Christianity hampered the development of Western schools in the largely Muslim North (Asadurian et al. 2006; Mustapha 2006).

Infrastructure in the north is also weak compared to southern regions (See Figure 5).

Figure 5: Percent of Households with Electricity (adapted from a map created using Measure DHS’s “DHS STATMapper”)⁶



North East and North West Regional Profiles

The North East and North West support similar forms of agriculture and industries. 70 to 90 percent of the working-age demographic is engaged in subsistence farming or other agriculture-related activities. Even with the relatively lower rainfall, vast areas of grassland

⁶ The data for this map come from Nigeria’s 2003 Demographic and Health Survey (DHS). Note that the DHS geographic divisions produced here define five zones, as opposed to the more generally recognized six regional zones (which other DHS documents have referenced). The Central region herein absorbs Taraba and Adamawa, two North-East region-states. The South-South region is divided between the Southwest and Southeast, below (with the Southwest absorbing Delta and Edo states, and the Southeast absorbing Bayles, Rivers, Akwa Ibom, and Cross River states). However, the north and south are accurately divided, with the Central region absorbing only northern states, and those regions below it comprised only of southern states. Thus, despite differences in regional divisions, this map proves useful for the purpose of comparing household-level infrastructure in Nigeria’s North versus its South.

are used to support livestock (e.g. cattle, sheep, and goats), and one of the largest cattle markets in West Africa is found in Potiskum, Yobe State. In addition, a wide variety of crops (such as potatoes, sugar cane, wheat, groundnuts, millet, sorghum and cowpeas, cotton, yam, groundnut, tobacco, maize, beans, guinea corn, millet, ginger, rice, cassava, ginger, vegetables, mango, cashew, guava, pawpaw) are grown in this region, especially within more fertile areas such as the flood plains supported by the Sokoto-Rima river system. The rivers also support a large fishing industry. Minerals found in these regions include salt, clay, serpentine, asbestos, amethyst, kyannite, gold and graphite, rutile, sand, granite rocks, asbestos, gold, uranium, nickel, chromite, tourmaline, amethyst, marl stones, potash, iron ore, copper, white quartz, chamovite, limestone, and antimony. The region supports vibrant leather works, weaving, dyeing and other forms of textiles, carpets, calabash designs, etc. (Africa Investment Publishing 2009).

Due to its proximity to the Sahara Desert, Nigeria's North is particularly susceptible to drought, with the risk for increased drought growing along with the expected effects of global warming (Adejuwon 2008). The climate of the northern regions coupled with pervasive illiteracy and high dependence on agriculture may make it difficult for the population to adapt to the expected effects of climate change in the future (Mberu 2007; Adejuwon 2008; Africa Investment Publishing 2009). During the North's dry season, a significant portion of the rural population migrates to urban centers.

Of the 10 Nigerian states with the highest incidence of poverty, four were from the North West, four from the North East, and two from the North-Central region (Soludo 2007). Additionally, Kano, Kaduna, and Sokoto, all states in the North West, are home to 1/3 of Nigeria's poor (Adegbola 2008).

The North West displays the greatest prevalence of severe stunting among children under age 5 (34 percent), greater than 10 percentage points higher than the rate found in the region with the next highest prevalence, the North East (22 percent) (National Population Commission Federal Republic of Nigeria 2004). Considering the 10-year period before the 2003 Nigerian DHS, the North East displays the highest infant mortality (125 deaths per 1,000 live births) of Nigeria's six regions, while the North West exhibits the highest under-5 mortality (269 per 1,000 live births). These two regions also have the lowest percentage of fully vaccinated children between the ages of 12 and 23 months (Measure DHS 2004). Given that childhood diarrhea is a significant cause of childhood morbidity and mortality, it is also worth noting that higher levels of childhood diarrhea are found in the North East (Kandala, Ji et al. 2007; Uthman, Uthman et al. 2008). Identifying the causative factors behind such disparities could prove central to addressing health crises throughout Nigeria on a health systems level.

The 2004 Nigeria DHS's EdData Survey highlights regional differences in education. The lowest regional primary school attendance rate in Nigeria among children age 6 to 11 (54 percent) is found in the North East. A survey found that the most widely cited factor explaining never having attended school is the family's need for labor (35 percent), with the next most common factor being enrollment in a Qur'anic school (24 percent). Of factors

influencing dropping out of primary school, monetary cost is the most widely cited (25 percent) (Education Policy and Data Center).

In the North West, only 56 percent of children ages 6 to 11 attend primary school, while 26 percent of children age 12 can read part of all of a sentence. Given the region's primary attendance rate of 56 percent (of children ages 6 to 11), its primary completion rate of 55 percent (of 11 year olds) suggests that the majority of those who attend primary school in the region proceed to the last year of primary school.⁷ As with the North East, the North West's most widely cited factor explaining "never having attended school" is the need for labor (36 percent), though the second greatest factor is monetary cost (29 percent), followed closely by distance of educational facilities (22 percent) and the child being too young (21 percent). Enrollment in a Qur'anic school was cited as a reason for never having attended school by only 13 percent of respondents. Of factors influencing dropping out of primary school, labor needed, monetary cost, and "unlikely/unable to enter secondary school" are the most widely cited, at 25, 24, and 25 percent, respectively (Education Policy and Data Center).

In both the North East and North West, proximity to educational facilities is by far the most cited reason for primary school choice (78 and 75 percent, respectively), suggesting that interventions aiming to address education in these regions should account for issues of location and access (Education Policy and Data Center).

North-Central Regional Profile

The North-Central region is well served by the Rivers Niger and Benue which provide irrigation to enable dry season farming. This region includes Benue State, touted as Nigeria's "bread basket." The region produces yam, cocoyam, rice, potatoes, maize, beans, soy beans, cassava, melons, sugar cane, groundnut, cashew, mangoes, oranges, rice, sorghum, millet, guinea corn, cotton, cocoa, coffee, kolanut, tobacco, palm produce and supports a significant local fishing industry. Minerals found here include marble, tin, mica, clay, wolframite, tantalite, talc, beryl, sapphire, tourmaline, quartz, zircon, iron ore, limestone, and salt (Africa Investment Publishing 2009).

The proportion of people living in poverty in the North-Central region rose from 32 percent in 1980 to 67 percent in 2004 (Soludo 2007).

The North-Central region's infant and child mortality rates (respectively, 103 and 165 deaths per 1,000 live births), while noticeably lower than in other northern areas, still greatly exceed the rates in the South East and South West.⁸ The same is true of the percent of children under age five who are physically stunted. Similarly, the percent of children age 12 to 23 who are fully vaccinated in the North-Central region (12 percent), while twice that in the North East and more than twice that in the North West, in less than half the percentage

⁷ This assumes that completing primary school in the region requires one to have attended primary school therein, that completions within the region by those who studied primarily outside the region are negligible, and that the distribution of primary attendance is roughly uniform across the ages.

⁸ These rates are for the 10-year period preceding the 2003 Nigerian DHS.

noted for either the South East or South West. On the other hand, the North-Central region has a far greater percentage of women who are overweight (i.e., those with a body mass index greater than or equal to 25) than the other northern regions (23 percent as compared to 14 percent in the North East and 15 percent in the North West). While not the health concern most typical of individuals in developing countries, a body mass index (BMI) of or exceeding 25 could indicate an increased risk of heart disease, diabetes, and other health problems (Measure DHS 2004).

With 80 percent of children ages 6 to 11 enrolled in primary school and 58 percent completing primary school, the North-Central region of Nigeria displays much stronger education coverage than the other northern regions (though no more than regions in the South). For those that have never attended school, 27 percent cite monetary cost as a factor influencing this, with the second most widely cited reason being that the child is too young. In terms of factors involved in primary school dropouts, 43 percent indicate that the child no longer wanted to attend, and 42 percent note monetary cost.

While proximity influences the choice of primary school in the North-Central region for 66 percent of respondents, the quality of education is also noted as playing a role for almost half of them (as compared to 28 percent in the North East and 33 percent in the North West). Of children ages 4 to 12 in the region, 32 percent can read, more than twice the percentage for children of the same age in either the North East or North West (13 and 15 percent, respectively). Notably, half of children in North-Central region live with a female parent/guardian who is illiterate (as compared to 80 percent in the North East and 78 percent in the North West), a factor quite likely to be related to differences in education between these regions (Education Policy and Data Center n.d.).

South East and South West Regional Profiles

The South West region straddles a range of diverse climates, from the Guinea savannah in its northern parts to the coastal climate in the South. It has large areas of tropical rainforest. Crops grown in this region include cocoa, palm produce, timber, rubber, citrus fruits, cashew, kola nut, plantain, banana, maize, rice, cowpea, yam and cassava. It is also contains the highest concentration of industries in the country, located in the city of Lagos. The city also suffers from problems related to over-population. The ports in Lagos include one of the largest on the African continent. (Ingwe, Aniah, and Otu 2008; Africa Investment Publishing 2009).

The South East region is the most densely populated part of the country and is primarily within the rainforest belt. While the land is suitable for most tropical crops, some of the more popular crops include oil palm, raffia palm, rice, groundnut, melon, cotton, cocoa, rubber, maize, yam, cassava, coco yam and maize. It also has a significant poultry, sheep and goat rearing, and fishing industries. Along with the South-South region, it is a major producer of oil and gas. The high population density found in the South East places significant pressure on existing natural resources (Mberu 2007; Africa Investment Publishing 2009).

The proportion of people living in poverty in the South East region rose from 13 percent in 1980 to 53 percent in 1996, before falling back to 27 percent in 2004. In the South West, the poverty rate was 43 percent in 2004, up from 13.4 percent in 1980 (Soludo 2007).

The South East's infant and child mortality rates, at 66 and 103, respectively, are the lowest of Nigeria's six regions.⁹ Not surprisingly, the region also exhibits the highest immunization coverage among children ages 12 to 23 months (45 percent fully vaccinated), the lowest percentage of children under age five who are stunted (20 percent), and, among women giving birth, the highest percentage who receive antenatal care from a health professional (96 percent), two or more doses of tetanus toxoid (77 percent), and assistance by a health professional during the birth (88 percent). However, with the highest percentage of overweight women in the country (34 percent), chronic diseases and adult health in the South East are of particular concern (Measure DHS 2004).

With the second lowest infant and child mortality rates (69 and 113 deaths per 1,000 births, respectively) and the second highest percentage of fully immunized children age 12 to 23 (33 percent), the South West does not trail far behind the South East. The concern about obesity-related chronic diseases such as diabetes may be slightly less in the South West, with 21 percent of women having a BMI greater than or equal to 25, noticeably less than the percentages in all other southern regions and the North-Central area. Even so, the challenges posed by nutritional deficiencies are extensive, as a quarter of all children under age five are stunted and 17 percent of women have BMIs below 18.5 (Measure DHS 2004).

The South East boasts the highest percent primary school attendance in Nigeria (85 percent) and the highest preschool attendance (80 percent of those children age 6 to 11 who ever attended school). The next highest levels for both of these are in the South West, at 82 and 61 percent, respectively. The two regions have identical primary completion rates (79 percent), while the South West has a greater percent of 12 year olds who can read part of or a whole sentence (74 percent, as compared to 64 percent in the South East). This may suggest different strengths in primary schooling in these regions, and perhaps distinct areas for improvement (Education Policy and Data Center).

In the South East, the factors most cited as explaining why a child has never attended school include the child being too young (79 percent), the school being too far away (42 percent), and travel to school being unsafe (38 percent). These statistics suggest that policies might focus on physical access to primary education in order to increase the prevalence of primary education in the South East. At the same time, the South East is the only region in Nigeria in which school quality influences more people's choice of primary school than school proximity (58 versus 39 percent, respectively). If those who send their children to primary school are primarily concerned with quality, perhaps improvement in this arena would increase primary completion (Education Policy and Data Center).

In the South West, however, the most influential factors explaining why a child would never have been to school are the child being too young (35 percent), the child being disabled (33

⁹ These rates are for the 10 year period preceding the 2003 Nigerian DHS.

percent), the family's need for labor (31 percent), and schooling's monetary cost (30 percent). These factors suggest a different set of access issues, that is, the child's ability to benefit from schooling, as well as the household's opportunity cost of sending the child to school (in terms of money and labor lost). In this region, proximity is more often cited as the reason for primary school choice than is school quality (48 versus 44 percent), with the most widely cited reason for dropping out being that the child no longer wanted to attend. Efforts to improve schooling in the South West may focus on increasing the perceived benefit of schooling or reducing the opportunity costs for households. Given the strong influence of childhood disability, preventative public health interventions may help increase primary school attendance. Administering such interventions through the school system might also increase the perceived value of schooling, reducing the opportunity cost of sending a child to primary school (Education Policy and Data Center).

South-South Regional Profile

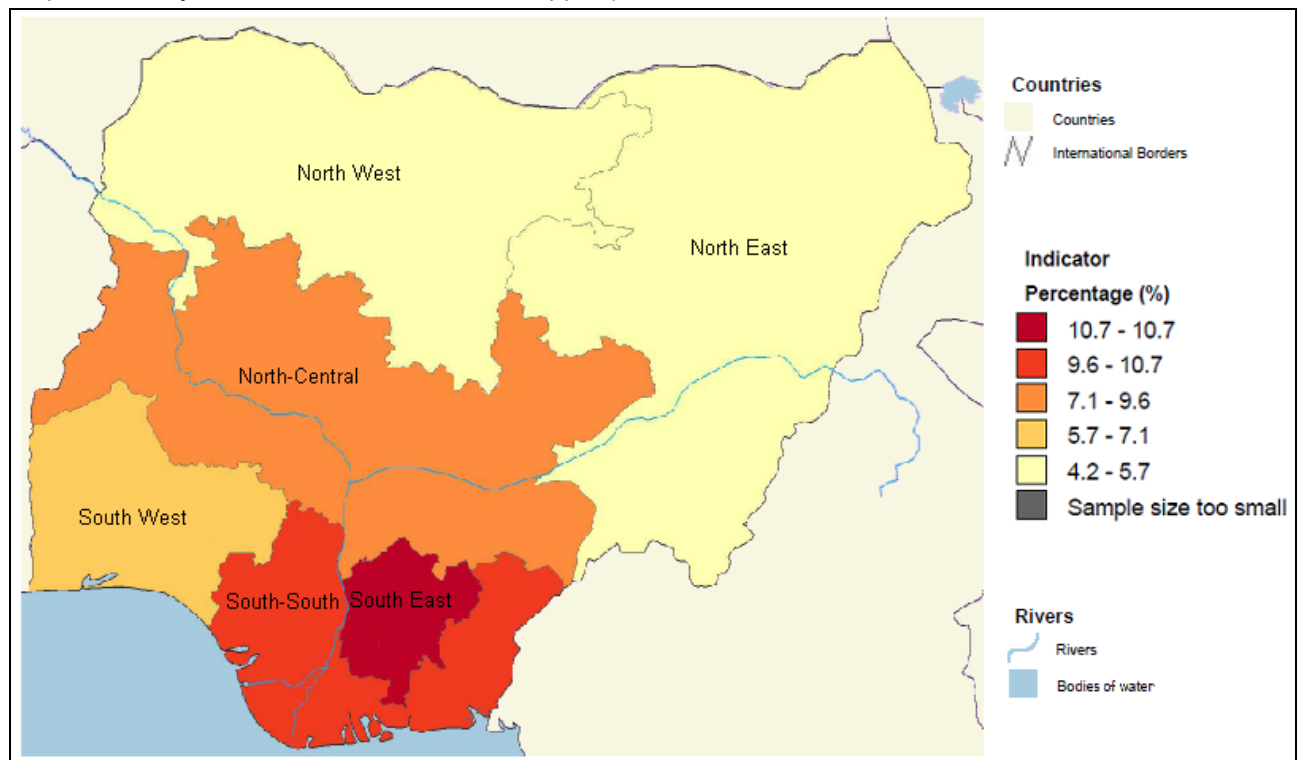
The South-South region is split between rainforest and coastal climates. Apart from petrochemical installations, the region has few industries, and the major occupations there include fishing and farming. Crops produced include oil palm, rubber, cocoa, rice, banana, yam, coco yam, coconut, cassava, sugar cane, groundnut, sweet potato and pineapple. There is both small scale and commercial livestock including cattle, goat, sheep, poultry, pigs, rabbits and turkeys.

Warri, Sapele, and Koko, three major coastal ports in the region and in the country, are located in very low-lying areas in the Niger Delta. Despite being the main source of oil exports for the country, this region suffers from poor infrastructure, sanitation, access to healthcare, and educational opportunities, as well as inadequate investment in development. Environmental damage from oil exploration and exploitation has contributed to and exacerbated a number of these problems. These conditions have fueled unrest, violence, and demands for greater attention to the development needs of the area (Joel 2008; Africa Investment Publishing 2009).

Poverty in the South-South region showed a similar pattern to that in the South East, rising from 13.2 percent in 1980 to 58.2 percent in 1996 before falling back to 35.1 percent in 2004 (Soludo 2007)

The oil industry has also been implicated in the region's high rate of HIV/AIDS infection, which greatly exceeds that of the other regional zones. The combination of the oil industry's role in contributing to the region's impoverishment (which has, in turn, been a factor in the sex trade's growth in the region) with the industry-workforce's high rate of HIV/AIDS infection (25 percent) is believed to be a key factor explaining an HIV/AIDS infection rate in the Niger Delta that amounts to twice the national average (Udoh et al. 2008). As HIV/AIDS prevalence contributes to the number of orphans in each region, it creates an added burden through increased dependency and other problems generated by the lack of adult oversight for large populations of teenagers and younger children (See Figure 6).

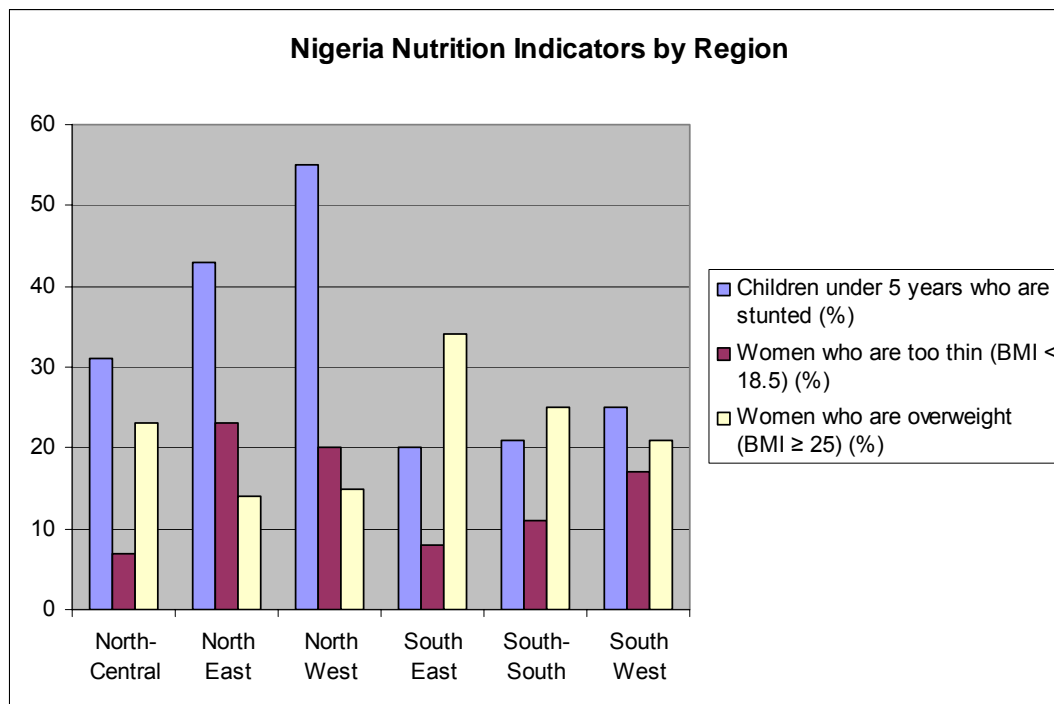
Figure 6: Percent of Children Under Age 15 With At Least One Deceased Parent (adapted from a map created by Measure DHS's "DHS HIVMapper")



The South-South's infant and child mortality rates, at 120 and 176, respectively, are the highest of the southern regions, while the percentage of children ages 12 to 23 months who are fully vaccinated (21 percent) is the lowest.¹⁰ Maternal care in this region is also scarcer than in other southern regions, as 27 percent of women giving birth have received no doses of tetanus toxoid and only 56 percent of births are assisted by a health professional. While far better than in northern regions, these statistics reflect a drastic difference between the South-South and the other southern regions. In measures of nutrition, however, the South-South is fairly similar to the other southern regions, as measures of the region's prevalence of stunting among children under five, BMIs below 18.5 in women, and BMIs above or equal to 25 in women are all comparable to those in the South East and South West (See Figure 7) (Measure DHS 2004).

¹⁰ These rates are for the 10 years preceding the 2003 Nigerian DHS.

Figure 7: Nutritional Indicators by Region in Nigeria (Measure DHS 2004)



In the South-South, 80 percent of children ages 6 to 11 attend primary school. However, only 42 percent of those children attended preschool, as compared to 80 percent in the South East and 61 percent in the South West. The monetary cost of schooling is the factor most often cited to explain why a child has never attended school and why a child dropped out of primary school (noted by 51 and 46 percent, respectively), with the child being too young the next highest factor in never attending (42 percent), and the child no longer wanting to attend the next highest in dropping out (30 percent). As proximity to school is the reason most cited for choice of primary school, this suggests that the perceived benefits of primary schooling do not outweigh the perceived costs enough to motivate parents/guardians to enforce children’s attendance. The low percent of literate children ages 4 to 12 (39 percent as compared to 57 in the South East and 55 in the South West) might be considered added evidence against the efficacy of schooling in this region (Education Policy and Data Center).

Social Tensions and Violence

With over 250 ethnic groups, numerous regional and religious divisions, and an aggressively-profit-seeking oil industry, Nigeria’s successes and failures are often overshadowed by or intertwined with myriad social tensions. Constructed by colonial powers from a number of different ethnic groups, Nigeria’s South and North were administered separately until 1914. Regional politicization continues, as Nigerians have not yet embraced the concept of a single Nigerian nation (Alubo 2004). Greater identification with regional, ethnic, or religious identities remains more common than identification with national identity. In the 1960s, shortly after independence, a survey found that when asked “What are you?” over half of the Igbo and Yoruba interviewees said they belonged to their ethnic group, rather than to their country (Klineberg and Zaralloni 1963). The severity of ethno-religious divisions and tensions is attested to by the Nigerian-Biafra civil war, an Igbo

endeavor to secede that lasted from 1967 to 1970, along with more recent violence such as the 2002 clash between Yoruba and Hausa gangs in Lagos that resulted in hundreds of deaths and injuries (Gandy 2006d). Nigerian cities such as Jos, Kaduna, and Kano have also been threatened by ethnic or religious riots (DFID 2003). Additionally, the government policy of allotting civil service jobs and university admissions according to tribal quotas has increased competition and antagonism between ethnic groups (Guest, 2004).

Estimates indicate that approximately 800,000 Nigerians were internally displaced as a result of “localized conflict” between 1999 and 2003 (Commission for Africa 2005), while “approximately 53,000 were killed from September 2001 to May 2004 in ‘communal clashes’” (John et al. 2007). Such conflicts are often attributable to numerous and overlapping factors related to political, religious, ethnic, or regional discord. For example, North-South biases may have roots in regional discord, but might also be related to different ethnic compositions or the fact that Nigeria’s North is largely Muslim while the South is predominantly Christian (John et al. 2007).

Religious conflicts are significant sources of violent unrest in Nigeria. Rioting between Muslims and Christians has broken out in response to a number of different catalysts. Among these are elections in which parties split along religious lines (e.g., in Jos in 2008), a 2006 series of Danish cartoon depictions of the Prophet Muhammad, and a 2002 dispute related to a beauty pageant and perceived religious discrimination (Polgreen 2008a). Electoral violence in particular has become more common and perhaps riskier, as politicians increasingly support and arm youth militias associated with their party. These militias exacerbate existing ethnic, religious, and political tensions (John et al. 2007).

The extent of religious and ethnic tensions is often attributed to governmental failure to cultivate a strong national identity. Lacking this perspective, individuals and groups may be more likely to assign blame for ineffective policies to ethnic or regional biases, regardless of the true reason for their failure.¹¹ This situation is worsened by widespread corruption, frequent policy reversals, and poor policy implementation, all of which hamper Nigerians’ trust in their government to implement good and consistent policy (Ikpeze et al. 2004; Rotberg 2004; Rotberg 2007).

Interestingly, the discord in the Niger Delta, perhaps Nigeria’s most well-known regional conflict, is not between different religions or ethnic groups but between the Nigerian people and their government. Those who live in the region suffer disproportionately from negative environmental and health effects related to drilling, flares, and oil-related accidents, as well as from the problems that develop as a result of these actions. For example, oil-related environmental damage has impaired agricultural and fishing productivity and has contaminated water sources, leading to increased impoverishment. This combined with the presence of wealthy foreigners associated with the oil industry is believed to be connected with the sex trade’s growth in the Niger Delta and, with that, a rising prevalence of

¹¹ Failures in meta-governance (the development and mobilization of national consensus around long-term national visions for economic planning, market based values and support institutions, infrastructural development, savings, private investment, wealth creation, export orientation, and competition) may have contributed to failures of past economic policies (Ikpeze et al. 2004; Adeyemo et al. 2008).

HIV/AIDS in the region (Udoh et al. 2008). As Nigerians living in the region do not benefit significantly from jobs or wealth created by the oil industry, the situation has led to tension and violence between citizens and their government (John et al. 2007).

In the Niger Delta, local youths have protested violently for decades over the actions of Shell and other oil firms, as well as against an unfair distribution of oil wealth. The Movement for the Emancipation of the Niger Delta (MEND), the largest militant group operating therein, has taken the lead in agitating for greater control of the oil wealth produced by their land and increased involvement of local leaders in planning future oil exploration. In 2008, MEND declared an “oil war” against Nigeria’s government, cutting the region’s oil production by over 20 percent through methods that include sabotaging oil infrastructure and kidnapping foreign oil workers.¹² A September 2008 BBC news article quotes the MEND as asserting that “The operation will continue until the government of Nigeria appreciates that the solution to peace in the Niger Delta is justice, respect and dialogue” (BBC News 2008).

John et al. (2007) describe the situation in the Niger Delta in their work on gun violence and ethno-religious conflict in Nigeria:

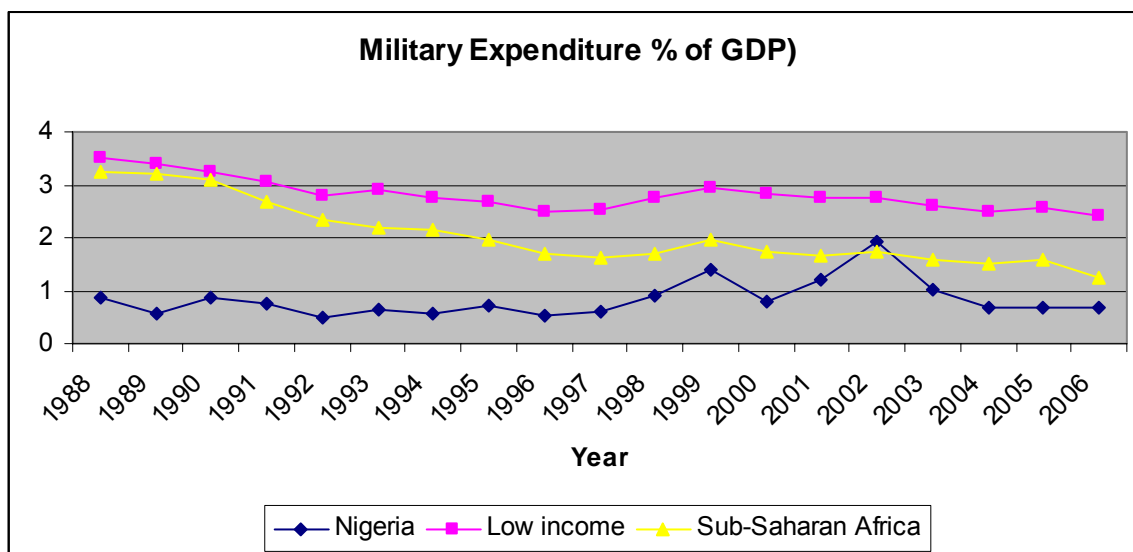
“Although Nigeria is the sixth leading oil producer in the world, few have benefited from this resource. Almost 70% of Nigerians live on less than one dollar a day and the average life expectancy is 48 years. This paradox is epitomized by the Niger delta region, where one of the indigenous groups, the Ogoni people, has struggled to obtain basic social services and to resist the destruction of their local environment [...]. Police and soldiers have used [small arms and light weapons] to fire on protestors, often armed by major oil companies. Small arms have also been employed by rival gangs to control different parts of the “oil patch”. The gangs often “bunker” oil from pipelines and sell it to suppliers, using the revenue to purchase additional weapons [...].”

The presence of armed militias, often supported by ethnic groups as “community defence groups,” exacerbates civilian-police violence. Such groups exist across the country. “The O’oduwa Peoples Congress is in the south west, the Egbesu Society in the Niger Delta, the Bakassi Boys in the south east. It is widely recognized that these vigilante groups carry out politically motivated acts of torture, extortion, and extrajudicial murder, sometimes sanctioned by the state” (John et al. 2007).

In 2006, spending on Nigeria’s military as a proportion of GDP was at 0.69 percent, below the Sub-Saharan average of 1.26 percent (World Bank 2008d).

¹² Nigeria ranks number 8 among the 10 countries with the greatest kidnapping problems, based on data from 1985 to 2000. Unlike most countries included in the list, the vast majority of hostages taken in Nigeria are foreigners, not locals. Those kidnapped usually work in the oil industry in the Niger Delta (Briggs 2002).

Figure 8: Trends in Military Expenditure as Percent of GDP (World Bank 2008d)



Of particular concern is the military and police force’s legacy of abuse of civilians with virtual impunity (AFP 2008). While a 2005 article from the *Economist* describes the beginnings of a shift towards disciplining members of the police force for human rights abuses, it also points out the challenge of ensuring appropriate judicial handling of such cases (“When the cops are robbers” 2005). According to Human Rights Watch, Nigerian military and police forces were responsible for the deaths of at least 90 people during a wave of religious violence in Jos in late November 2008. Nearly all of those killed were Muslim (Polgreen 2008b).

Government and Governance

Nigeria’s government has executive, judicial, and legislative branches at the national level. The president is both chief of state and head of government, and is elected to a four-year term (suffrage is universal among those aged 18 and older). The Federal Executive Council is the president’s cabinet. Members of Nigeria’s National Assembly (bicameral, with a Senate and House of Representatives) are elected to four-year terms through voting that coincides with presidential elections. Supreme Court judges are appointed by the president, while those in the Federal Court of Appeals are appointed by the federal government (CIA 2009a).

Nigeria achieved independence from Britain in 1960, but moved in and out of military hands until May of 1999. As a result, the country is still at a fledgling stage politically. In 1999, a new constitution was introduced and democratic elections held. President Olusegun Obasanjo was re-elected in 2003 in an election marked by violence and criticized as potentially fraudulent by domestic and international observers (Polgreen 2007). In the 2007 elections, power was transferred from Obasanjo to the current President, Umaru Yar’Adua. Yar’Adua was governor of Katsina State and had Obasanjo’s support to run as President (Murray 2007). His ‘7-Point Agenda’ committed the government to reform, particularly in the areas of human capital development, economic reforms, transport, power, the rule of law, conflicts in the Niger Delta, and electoral reform (World Bank 2008).

The 2007 election marked Nigeria's first transfer of power from one civilian leader to another, but "took place amid chaos, fraud and violence," with both domestic rivals and international groups questioning the credibility of the election's results (Polgreen 2007). A 4-to-3 vote by the Supreme Court in December of 2008 ruled in favor of Yar'Adua on the case brought by opposition leaders seeking to overturn the election's results. This close and belated vote—the president was sworn in May 29, 2007—suggests a degree of uncertainty surrounding Yar'Adua's mandate. Additionally, some might argue that this ruling has limited the Yar'Adua administration. Nonetheless, little departure from the previous administration is expected from the current president. Furthermore, questions were raised regarding Yar'Adua's anti-corruption stance when a popular official who attempted to prosecute corrupt leaders was demoted and, after two assassination attempts, driven into hiding. Additionally, concerns about the president's health stemming from a series of trips abroad for medical reasons contribute to uncertainty about not only the outcome of his presidency, but whether he will complete his term (Connors 2008). The next elections are scheduled for 2011.

Nigeria ranks 121 of 180 countries on Transparency International's Corruption Perceptions Index (Transparency International 2008). On the other hand, the World Bank reports good progress against corruption in the past four years. The country has been removed from the Financial Action Task Force on Money Laundering list of non-complying countries and is implementing the Extractive Industries Transparency Initiative (World Bank 2008). At this stage, it is difficult to distinguish between changes pushed forward by the past leadership's momentum versus those wrought by the new administration.¹³

Nigeria is structured with three tiers of government (federal, state, and local), with 36 states and 774 local governments. States control 50 percent of government resources and have primary responsibility for education and certain aspects of the health system. State governance capacity, however, varies widely (World Bank/DFID 2005).

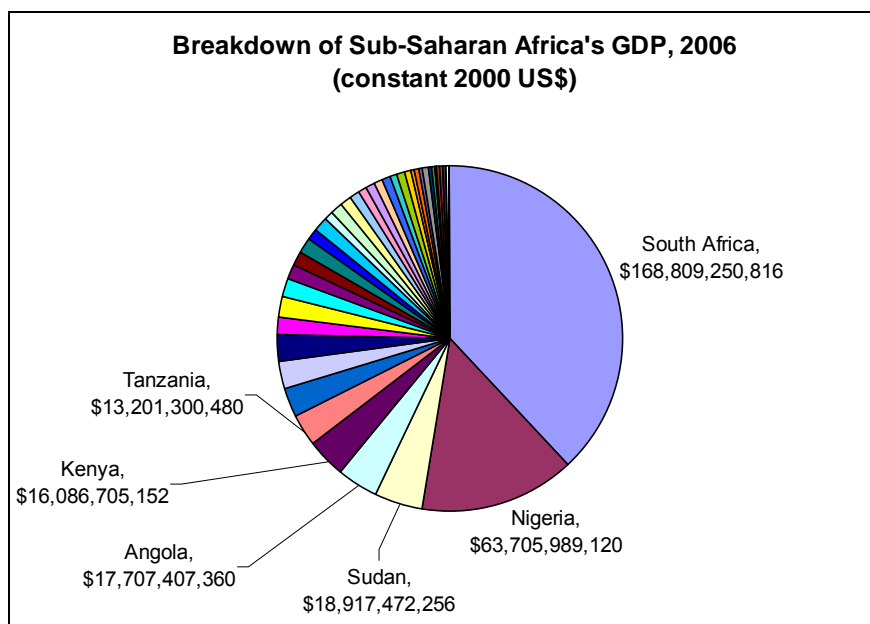
Economy

Basic Economic Indicators

Nigeria accounts for 14 percent of Sub-Saharan Africa's GDP and is the continent's second biggest economy, after South Africa (World Bank 2008).

¹³ For example, a 2005 publication describes a "vibrant press" and civil society groups that are gaining strength in Nigeria, despite continued ethnic tensions (World Bank/DFID 2005). Further study is required to distinguish which improvements can be rightfully attributed to the Yar'Adua administration.

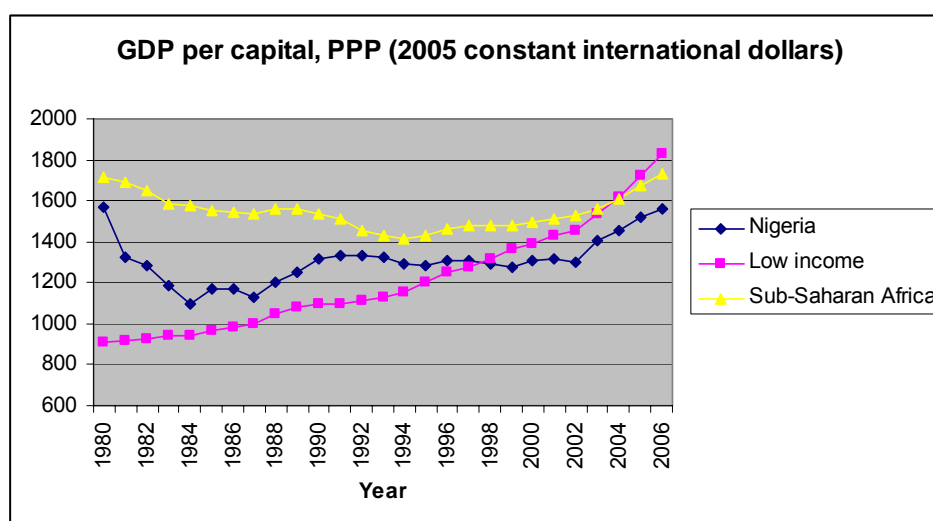
Figure 9: Sub-Saharan Africa GDP Breakdown (World Bank 2008d)



In 2006, Nigeria's per capita GDP was \$1562 at purchasing power parity in 2005 international dollars, with an annual growth rate of 5 percent (World Bank 2008d). The UN Human Development Index for 2005 ranks Nigeria at 160 out of 174 countries on GDP per capita (UNDP 2008).

The trend line illustrating Nigerian per capita income since 1980 suggests an erratic pre-1990 economy (see Figure 10). The country's per capita GDP (at purchasing power parity) plummeted between 1980 and 1984, after which it began to recover, roughly following the trend of Sub-Saharan Africa through 2006, though never attaining or exceeding the region's per capita GDP in that period.

Figure 10: Trends in GDP per capita (World Bank 2008d)



Nigeria received \$6.4 billion in aid in 2005. In November of that same year, the Paris Club approved a debt-relief program eliminating \$18 billion of Nigeria's debt in exchange for \$12 billion of payments (and thus ridding the country of \$30 billion of its \$37 billion of external

debt). An estimate from December 31, 2008 places Nigeria's external debt at about \$9.1 billion (CIA 2008).

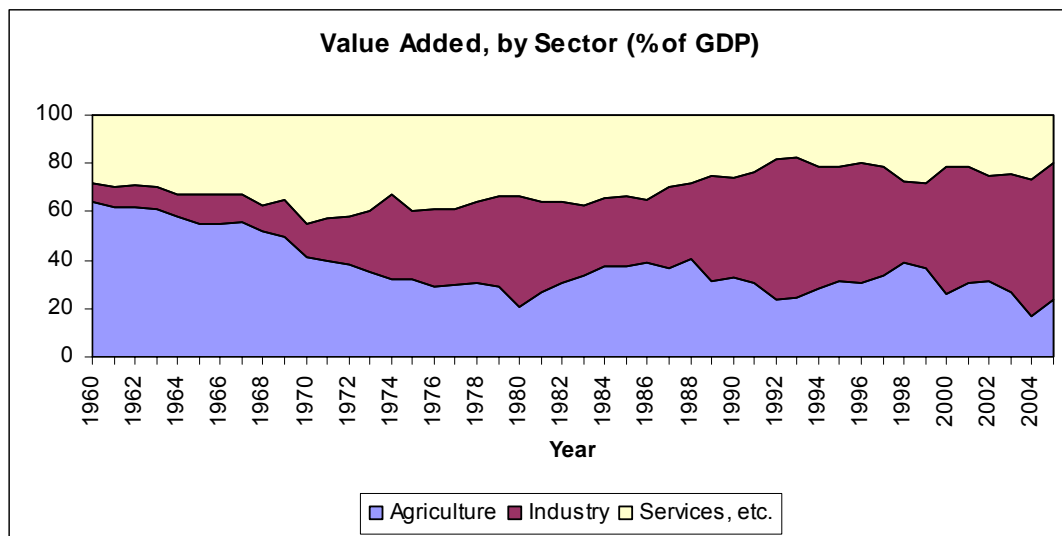
In 2008, Nigeria received \$35.75b of foreign investment, up from virtually nothing in 1984 and only \$4b in 2004 (CIA 2009a, World Bank/DFID 2005). While Nigerians living overseas remitted \$1.3 billion in 1999 (DFID 2004), the Ministry of Finance estimates that this increased to \$17.9 billion in 2008 (Ogbu 2008).

Resources and Industry

Nigeria has a wealth of natural resources, including petroleum, vast reserves of natural gas, tin, iron ore, coal, and limestone. Its agricultural products include cocoa, peanuts, palm oil, corn, rice, sorghum, millet, cassava, yams and rubber; livestock including cattle, sheep, goats, pigs; and timber and fish. Industrial products include crude oil, coal, tin, columbite, palm oil, peanuts, cotton, rubber, wood, hides and skins, textiles, cement, food products, chemicals, fertilizer, printing, ceramics, steel, and small commercial ship construction and repair. Petroleum and petroleum products account for 95 percent of the country's exports, with cocoa and rubber constituting the other main exports (CIA 2009a). Major imports include machinery, chemicals, transport equipment, manufactured goods and food.

Production of primary commodities dominates Nigeria's economy (IMF 2007). The balance between industry and agriculture, however, is quite volatile (See Figure 11). Since 1960, Nigeria has transitioned from relying on agriculture to being industry-focused, with the value added from industry in 2005 equivalent to 57 percent of Nigeria's GDP (as compared to 23 percent for agriculture) (World Bank 2008d).

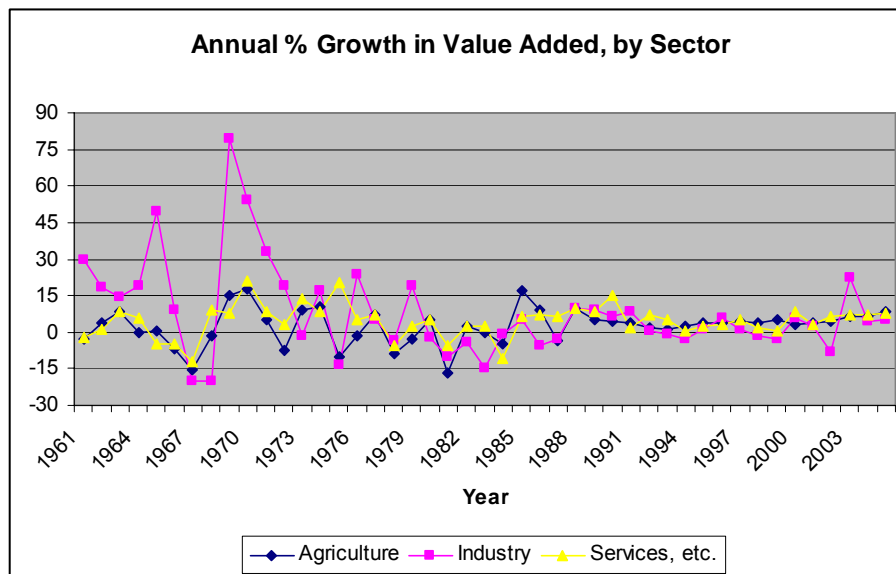
Figure 11: Nigeria's Value Added by Sector (World Bank 2008d)



Despite industry's increased role in Nigeria's economy, its growth has been unstable, averaging 1.3 percent between 1991 and 1995, jumping to 1.9 percent between 1996 and 2000, and soaring to 5.3 percent between 2001 and 2005, with 2002 at -8.0 percent and 2003 at 22.4 percent (World Bank 2008d). Figure 12, below, illustrates that neither services

nor agriculture exhibit comparable variation in those periods. In fact, industry displays significantly more variation over the entire period from 1961 to 2005.

Figure 12: Nigeria's Annual Percent Growth in Value Added by Sector (World Bank 2008d)



According to the World Bank, “agriculture is critical to any sustained improvements in Nigeria’s growth performance,” and room for productivity improvements exists in the traditional fields of cocoa, oil palm, cassava, ground nuts, as well as in newer ventures including high-value fruits and vegetables, rice and agro-processing (World Bank/DFID 2005). For agriculture to be a sustainable and productive source of livelihood in Nigeria, the common practices of land degradation, environmental damage, and destructive farming methods must be discouraged. Farming techniques such as making ridges and mounds and slashing and burning bushes accelerate soil erosion and prevent the regeneration of vegetation (Onwuka 2005). Human-induced soil degradation is high or very high for more than 50 percent of the country’s land. This does not factor in erosion from wind, storms, and run-off. As early as 1984, soil erosion in Nigeria was responsible for diminished yields of topsoil amounting to 30 to 90 percent in certain areas of the country’s south (Junge et al. 2008).

Due to both erosion and population increase, Nigeria’s per capita arable land, at levels of 0.68 and 0.34 hectares in 1960 and 1990, respectively, is forecast to drop to 0.14 in 2025. Nigeria’s per capita renewable fresh water resources were 8,502 and 2,506 meters-cubed in 1950 and 1995, respectively, and are forecast at 1,175 meters-cubed for 2025. Given these forecasts of growing water scarcity, the accelerating desertification of the Sahel region, and low agricultural yields, the country’s need of widely implemented, efficient, and sustainable agricultural techniques is urgent (Junge et al. 2008).

The underdeveloped state of African climate science presents a problem for the agricultural sector of Nigeria’s economy in particular, as it limits the population’s ability to prepare for extreme weather events and water shortages (DFID 2005). Partly as a result, housing and road-building projects take little account of climate risk, and farmers lack information on

short- and long-term weather forecasts; this, in turn, influences food security and agricultural productivity as well as infrastructure development.

Highlighting several key challenges facing Nigeria's economy, a 2007 IMF report observes aspects of Nigeria's finances in need of improvement at all levels of government. Evidence of these includes a pension crisis and arrears of salaries. The report also notes that Nigeria's unfriendly business environment is marked by public sector dominance, rent seeking, weak institutions, corruption, and a high cost of doing business. These factors suggest that Nigeria's economy would benefit from better-defined and more transparent allocations of funds in both government and business sectors, as well as from restructuring geared towards encouraging private enterprise, reducing inefficiencies that contribute to high business costs, and introducing more competent debt management (IMF 2007).

Poverty and Inequality

Nigeria ranks 158th of 177 countries measured in the United Nations Human Development Index (UNDP 2008). While the share of Nigeria's population living below the poverty line has fallen from 70 percent in 1999 to 54 percent in 2005, over half the population lives on less than US\$1 per day, (IMF 2007). This translates into approximately 80 million Nigerians living in poverty. Only China and India have larger populations of poor people (DFID 2004).

Nigeria's poor are more likely to live in the north and are predominantly rural, female, very young or old, and dependent on renewable natural resources for their livelihoods. 64 percent of those living in rural areas are poor, compared with 35 percent in towns and cities (World Bank/DFID 2005).

Poverty among women is likely related to their under-representation in the workplace: while 87.4 percent of adult males participate in the labor force, the proportion among females is 48.8 percent (UNFPA 2005). In the non-agricultural sector, only 21 percent of the workforce is female, while only 7 percent of members of parliament are women (World Bank 2008a). Women who are employed work for longer hours on average than men, both in agricultural and non-agricultural activities (Rahman 2008).

A survey of 230 women in Kaduna State found that only 42 percent of women were involved in farming decisions, with the rate in the north of the state at 26 percent (Rahman 2008). Only 11 percent of women had access to resources such as credit, land, equipment and other agricultural inputs including fertilizer, seeds, and transport and storage facilities. Men also controlled decision making in the selling and consumption of produce. Lower rates of female literacy (relative to male literacy) may also influence women's employment options and decision making power.

Poverty may reinforce established inequalities by influencing health and healthcare. A 2009 study of 333 adults in Anyigba, a town in Kogi State, found that, when first seeking treatment for an illness, a significantly higher proportion of low-income respondents (as compared to high-income respondents) sought medical treatment from drug sellers, while a significantly higher proportion of high-income respondents (as compared to low-income respondents) sought treatment from private health facilities (Tanimola and Owoyemi 2009).

The use of distinct sources of treatment by those with different incomes may generate class differentials in health outcomes, or reinforce those already present. Given regional differences in income, this might play a role in furthering regional inequities as well.

Poverty rates vary widely by region. In the Niger Delta, for example, a 1996 survey found the highest poverty rates in the country as well as high unemployment rates and extremely low rates of literacy, access to health services, and access to safe water (Ross 2003). In 2004 the official unemployment rate according to the Federal Office of Statistics was 11.8 percent, down from 18.1 percent in 2000 (Olusakin 2006). However, the World Bank (2008) estimates that the actual rate was 41 percent. In “key urban centers and amongst new graduates,” unemployment was as high as 50 percent (World Bank/DFID 2005).

In 2004 the Nigerian government launched the National Economic Empowerment and Development Strategy (NEEDS) as an attempt to tackle widespread poverty. NEEDS is supported by state-level strategies (SEEDS). The pillars of NEEDS are empowering people to build a social contract, promoting private enterprise, and changing the way government works.

Under the first pillar, NEEDS has proposed a social charter giving citizens the right to government services and accountability. The program addresses education and health, and is geared towards achieving universal basic education, establishing quality standards for schools, and improving access to health services, with an emphasis on routine immunization. Fulfilling the program’s commitment to generating a “strong safety net program for particularly vulnerable groups” could have vast and positive implications for Nigeria’s poor (World Bank/DFID 2005).

In pursuing NEEDS’s second pillar, promoting private enterprise, the program aims to diversify the economy, diminishing its dependence on oil by improving agriculture and small and medium enterprise (SME) performance. NEEDS pledges to reduce the cost of doing business, accelerate privatization and deregulation, and implement reforms of customs and ports that will help to reduce corruption. The telecommunications sector has already been liberalized and private investment in it has soared 100-fold since 1999, making it second only to oil as a recipient of foreign direct investment (FDI) (World Bank/DFID 2005). NEEDS also aims to encourage private provision of crucial infrastructure by promoting increased competition in infrastructure sectors and protecting consumer welfare, among other methods.

The third pillar of NEEDS, changing the way government works, includes strengthening transparency and accountability in resource use and decision-making (e.g., oil revenue flows to different levels of government are now published in national newspapers), the establishment of a Public Procurement Bureau to implement more open and competitive public procurement processes, reform of the police and judiciary, and support for the Economic and Financial Crimes Commission and the International Centre for the Prevention of Crime. Additionally, a new Presidential Implementation Committee has been formed to address conflict in the Niger Delta region (World Bank/DFID 2005).

NEEDS has estimated that 5 percent per capita annual GDP growth will be required to stop the increase in poverty (DFID 2004). To cut poverty in half by 2015, growth of 7-8 percent per year will be needed (World Bank/DFID 2005).

The IMF (2007) reports that the performance of NEEDS has been “remarkable.” Implementation, it notes, remains on course and has “surpassed expectations” in the areas of civil service reforms, a stable macroeconomic environment, due process of law, banking consolidation, and the emergence of mega banks, privatization, and liberalization. The IMF notes weaknesses, however, in monitoring and evaluation of reforms, as well as in “effective coordination”, and argues that we (Nigeria) are “not yet where we want to be” in terms of poverty reduction, employment generation, and power supply.

Inequality increased during the 1980s and 1990s. With its Gini coefficient of 0.437 in 2003, Nigeria presents a level of inequality higher than that displayed in most other countries in Sub-Saharan Africa (CIA 2008).

Oil and Gas

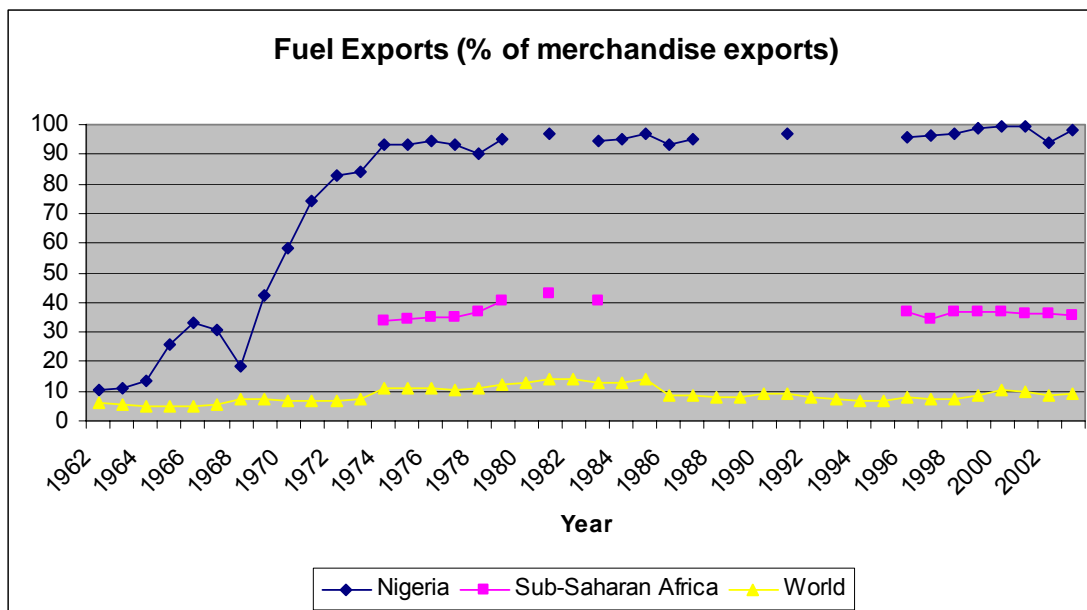
Nigeria, which joined OPEC in 1971, is the most oil-dependent country in the world as measured by oil’s share in exports. In 2000, 99.6 percent of the country’s export income came from oil (the proportion has been above 90 percent since the mid-1970s). According to Ross (2003), the oil industry generated approximately \$231 billion in rents—“returns in excess of production costs”—between 1970 and 1999, amounting to \$1900 per capita:

“Had each year’s oil rents been invested in a fund that yielded just five percent real interest, at the end of 1999 the fund would be worth \$454 billion. If divided among the general population, every man, woman and child would receive about \$3,750, equivalent to about 15 years of wages.”

In 2003, Nigeria produced 2.5 percent of the world’s oil output, placing the country among the top 13 oil producers worldwide (Akpan 2006). Nigeria exported 2.1 million barrels of oil per day in 2006, and has proven reserves of 37 billion barrels (CIA 2008). Its main export partners are the US (51 percent), Brazil (8 percent), and Spain (8 percent). Multinational oil firms working in the Delta region or offshore include Shell, ExxonMobil, Chevron, Agip, Total, and Phillips, which share the investment and proceeds with the state-owned Nigerian National Petroleum Corporation (NNPC).

Oil accounts for well over half of annual government revenues and, since 1974, between 21 and 48 percent of GDP (Ross, 2003). In 2008, oil revenues accounted for 20 percent of GDP, 95 percent of foreign exchange earnings, and 80 percent of government revenues (CIA 2008).

Figure 13: Trends in Fuel Exports as a Percent of Merchandise Exports (World Bank 2008d)



Oil is mostly exported as crude, with Nigeria thereby missing opportunities to refine it and potentially create more value-added industries that employ more Nigerians.

Nigeria also has extensive natural gas reserves (5 trillion cubic meters), which it is only beginning to exploit. In 2003 the country had three working gas liquefaction facilities and was building two more (Ross 2003). It produced 34 billion cubic meters of gas in 2007, exporting 21 billion (CIA 2009a).

Other sectors have struggled since the discovery of oil in Nigeria in 1956. Cocoa and groundnut exports have slumped, and palm oil exports have almost disappeared (McPherson 2003). Foodstuff, once an exported good, is now imported from other countries. In industry, the World Bank notes the potential for improved productivity in light manufacturing, leather goods, food, and beverages (World Bank/DFID 2005). It believes the most promising markets for this growth are local and regional, with the exception being those markets in which Nigeria is already globally competitive, such as shrimp and leather.

Environmental Problems

Environmental problems are interwoven with Nigeria's economy, due both to their sources and their costs. The CIA (2008) lists the following as environmental problems Nigeria faces: soil degradation, rapid deforestation, urban air and water pollution, desertification, loss of arable land, rapid urbanization, and pollution of water, air, and soil from oil spills. Each of these has notable costs for both individuals and entire economic sectors due to their implications for industries and agricultural productivity. As a number of environmental problems stem from industrial endeavors, both their causes and effects are relevant to Nigeria's economy.

Oil pollution poses a particularly significant threat in Nigeria. A World Bank/DFID (2005) report summarizes the damage observed in oil-producing regions:

“Mismanagement of the country’s oil resources also resulted in significant environmental degradation and contributed to persisting social conflict. Oil spills, leakages through old and corrosive pipelines, dumping of oil into the waterways, burning of excess gases have all been extensive, often poisoning drinking water, polluting the air, destroying vegetation, fisheries, land quality and undermining the livelihoods of people. Weak enforcement of environmental laws, which draws support from past political leadership, has exacerbated the problems. Activities relating to oil exploration and drilling in the context of weak property rights regimes have also displaced indigenous communities from their homelands and fuelled social protest and disruption.”

Although the Petroleum Act urges companies to take “all practicable precautions” to avoid polluting, it does not include sanctions against polluters (Akpan 2006).

Oil speculation and drilling are also inherently hazardous to local vegetation and wildlife. While baseline studies require extensive sample collection of flora and fauna, geological surveys involve the clearing of vegetation and the use of explosives, which can destabilize buildings and scare away wildlife. Preparation for drilling often occurs in rainforests or mangrove swamps and involves clearing all vegetation from the site. Drilling itself can destroy natural habitats, affecting both migratory and sedentary fauna. Waste generated throughout the process can include solid wastes resulting from drilling, air emissions related to gas flares, or waste oil, which is often discharged into Nigeria’s rivers. Oil waste poses added problems with significant costs, particularly in the Niger Delta region which produces the majority of the country’s oil. The health costs, effects on soil fertility and vegetation, and economic costs of oil speculation and drilling to the region and its inhabitants are not well documented (Okeagu et al. 2006).

Air pollution related to Nigeria’s oil production is likely to have both regional and global effects:

Each day, up to 2.7 billion cubic feet, about 70 percent of the gas released during oil production, is burnt off in Nigeria. This sends huge volumes of greenhouse gases, carbon dioxide and methane into the atmosphere, while sulfur dioxide emissions mix with moisture in the atmosphere and return to the ground as acid rain. Flaring in the Niger Delta makes up about 20 percent of the worldwide total. The U.S. Department of Energy calculated releases of 11 million metric tons of methane from Nigerian flares (Okeagu et al. 2006).

According to a 2006 article, Nigeria’s domestic demand for natural gas was 300 million cubic feet per day, barely one-tenth the amount burned off daily. From respiratory illness and skin problems to acid rain and crop contamination, the damages attributed to the natural gas industry have particularly high costs, especially for residents of the Niger Delta (Okeagu et al. 2006).

Deforestation poses another problem with extensive economic implications for Nigeria. Between 1990 and 2007, the country’s forest area declined from 19 to 12 percent of total land (World Bank 2008d). Another study reports a nine-fold increase in degraded lands, to 26,000 sq km, in the 20 years preceding 1995 due to unsustainable water use (World Bank/DFID 2005). A Presidential Committee on Erosion Control and Desertification headed by Vice-President Atiku Abubakar was established in 2005, along with a series of environmental policies (IMF 2007).

In terms of water pollution, the World Health Organization (1997) reports quite serious problems in Nigeria, which threaten the health of both rural and urban populations. In rural areas, water pollution occurs mainly because of agricultural activities. In urban and peri-urban areas, “many factories are located on river banks and use the rivers as open sewers for their effluents...The petroleum industry represents the greatest threat to water quality.” In the Niger Delta in particular, water pollution associated with the oil industry has resulted in such extensive oxygen depletion in some water bodies that aquatic fauna have died of asphyxiation. Such pollution also threatens the ecosystems of Nigeria’s mangrove swamps (Osuji and Uwakwe 2006).

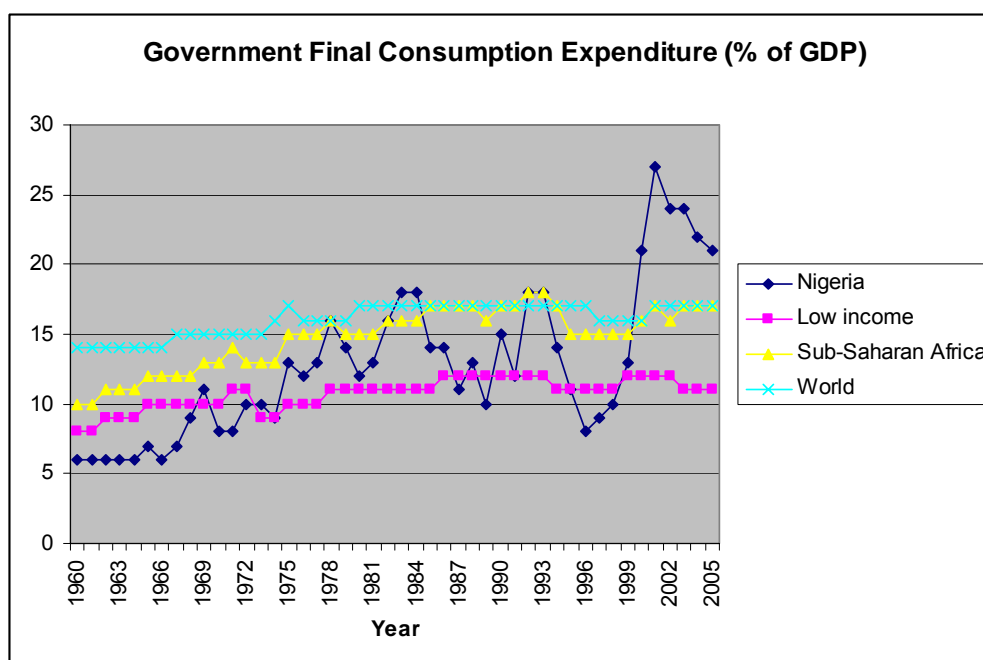
Economic Governance

Nigeria ranks 94th of 134 countries measured in the World Economic Forum’s Global Competitiveness Index, a survey of business leaders from across the world, including 87 from Nigeria (World Economic Forum 2008).¹⁴ “The rankings show that Nigeria is not taking the opportunity presented by the windfall oil revenues to upgrade the population’s access to basic healthcare and education, and to make improvements in other areas such as infrastructure. Movements in this direction would be critical to set the basis for sustainable growth going forward” (World Economic Forum 2008).

With oil accounting for so much of government revenue and oil prices fluctuating greatly over the past 30 years, government spending has also been highly volatile. Since 1960, Nigeria’s government expenditure as a share of GDP has, at least twice, moved from below the average for low-income countries to equal to or greater than the world average, only to return to back below the low income level (See Figure 14).

¹⁴ While this index ranks Nigeria well in terms of its macroeconomic environment (26th out of 134) in considering, among other factors, the country’s budget surpluses, high savings rate, and market size, these measures are closely related to Nigeria’s oil industry. This industry can also be implicated in a number of the country’s main weaknesses as highlighted by the same index (e.g., business perceptions of corruption and nepotism by the government and its agencies, the costs of crime and violence and the unreliability of police services to counter them, and weak infrastructure, health, primary education, higher education and training, and institutions) (World Economic Forum 2008). One might argue that the costs and benefits of the oil industry should be considered separately from the economy as a whole. Of course, any attempt to do so would reveal the extent to which the country relies on the oil industry and has failed to diversify its markets, quite possibly to its detriment in the long-run.

Figure 14: Trends in Government Final Consumption Expenditure as a Percent of GDP (World Bank 2008d)



Such extreme volatility heightens the risk of exchange rate appreciation, which can lead to other sectors being internationally non-competitive, reduced private investment, fiscal and monetary shocks, inflation, and capital flight as investors react to unpredictability. As Ross notes, it may also increase corruption and reduce long-term planning and investment by governments (Ross 2003). According to the World Bank/DFID (2005), “the mismanagement of oil revenues, and specifically the adverse effects of large foreign exchange inflows during oil price booms, has produced a historically unstable and unpredictable macroeconomic environment.”

Dependence on oil and other valuable minerals can expose states to increased risks of civil war (Collier and Hoeffler 1998), high rates of corruption (Sachs and Warner 1999), and atypically slow economic growth (Sachs and Warner 1997). In Nigeria, frustration and anger surrounding corruption, pollution caused by the oil industry, and what is often considered an unfair distribution of oil profits has motivated violence and discontent in the Niger Delta (see section on Social Tensions and Violence for further information). As the oil industry does not require much labor and foreign oil companies often bring many of their own employees into Nigeria, those living in the region gain few benefits from the industry and concurrently suffer high environmental and health costs (Ross 2003).¹⁵

Nigeria’s reliance on oil exports poses an additional threat: Dutch Disease. Dutch Disease refers to a situation in which an increase in the real exchange rate renders manufacturing and agricultural exports less competitive on the international market, and is a particular

¹⁵ Notably, the executive branch has little incentive to respond to the protests of its citizens, as oil revenues obviate the need for tax revenue. This may encourage citizens to take more drastic actions to force a response (DFID 2003).

problem for Nigerians as manufacturing and agriculture employ large numbers of poor people. Consequently, the oil industry's effect on pro-poor growth is limited and can even be detrimental.

The CIA (2008) reports that Nigeria has taken some actions to improve economic governance since 2003, including modernizing the banking system (only 5 million Nigerians, less than 10 percent of the adult population, have bank accounts (Commission for Africa 2005)), "curb[ing] inflation by blocking excessive wage demands", and working to resolve disputes about the distribution of oil profits. The country's four oil refineries were privatized in 2003, and in 2005 the Paris Club wrote off \$18 billion of the country's debt in return for \$12 billion of payments, leaving Nigeria with \$7 billion of external debt. Under the NEEDS strategy, the government aims to redefine its role as a "facilitator and promoter in the economy," strengthening the economic environment via improved security, infrastructure, access to cheap finance, and privatization and liberalization (IMF 2007).

The World Bank (2008) is also positive about recent developments. Inflation fell from 18 percent in 2005 to 5 percent in 2007; the non-oil sector grew by 9.6 percent in 2007; international reserves reached \$51b; and privatization continued apace. Other encouraging developments include increased investment in agricultural research, efforts to develop infrastructure to improve the links between rural producers and urban consumers, and better water management to expand irrigation systems (World Bank/DFID 2005). Such diversification is promising, particularly in the realm of agriculture, as it could help dull the negative impacts of shifts in the global demand for oil on Nigeria's exchange rate and economy in general.

Doing Business in Nigeria

The World Bank's "Doing Business in Nigeria" study ranks Nigeria 118th out of 181 economies with respect to the ease of doing business (World Bank 2008c). Nigeria's national target is to rank in the top twenty economies of this list by the year 2020. However, on every component used to develop this ranking, from starting a business to registering property to enforcing contracts, Nigeria ranks a long way off the world's top twenty economies. Relevant key indicators include financial and temporal barriers to starting or conducting a business, attractiveness to investors of both short- and long-term ventures in Nigeria, and the quality of and access to relevant infrastructure.

In Nigeria, starting a business takes an average of 31 days (as compared to 8 days in Senegal and 1 in New Zealand) and costs 90 percent of gross national income per capita. Although Nigeria performs better than the average for Sub-Saharan Africa in this area, it ranks 91st of the 181 economies studied worldwide. Additionally, this ranking does not factor in the challenge of getting credit, an area in which Nigeria ranks 84th of 181 economies (World Bank 2008c). In a World Economic Forum (2008) survey of business leaders, Nigeria ranked 118th of 134 countries on the ease of access to loans. 95 percent of credit provided to firms by banks is short-term, although the government is piloting credit programs for farmers, small-scale mining activities, and other small and medium enterprises (World Bank/DFID 2005).

Additional obstacles include obtaining construction permits, which takes an average of 350 days, requires 18 procedures, and costs 655 percent of GNI per capita (in Korea, it takes 34 days, and in Kenya, where the cost is 46 percent of GNI per capita, 100 days). Enforcing contracts takes 457 days, requires 39 procedures, and costs 32 percent of the money claimed. On this measure, Nigeria ranks 90th of 181 economies, but performs significantly better than the Sub-Saharan average (World Bank 2008c).

Registering property is important for residential housing as well as businesses. In Nigeria, this process takes 82 days and costs 22 percent of the property's value, as compared to 64 days and 4.1 percent in Kenya, or 124 days and 20.6 percent in Senegal. "Efficient property registration reduces transaction costs and helps to formalize property titles. Simple procedures to register property are also associated with greater perceived security of property rights and less corruption" (World Bank 2008c). "The more difficult and costly it is to formally transfer property, the greater the chances that formalized titles will quickly become informal again. Eliminating unnecessary obstacles to registering and transferring property is therefore important for economic development" (World Bank 2008c).

Many investors have left Nigeria because of weak property rights and commercial law, with those that have remained "mostly confining themselves to low capital and short term investments, protected through institutions outside the formal system, such as kin, ethnicity, and localised relations" (DFID 2003). This has implications beyond that of each individual business as it shapes Nigerian industry as a whole, creating incentives against large-scale investment and long-run ventures that might provide dependable employment opportunities and benefits over time.

Of concern is Nigeria's 2009 ranking of 53rd of 181 economies on the protecting investors component of the World Bank's "Doing Business in Nigeria", as investor protection accounts for up to 73 percent of the decision to invest. While on the strong side when compared to other countries in Sub-Saharan Africa (e.g., Kenya (5.0), Cameroon (4.3), and Senegal (3.0)), Nigeria's ranking indicates a need for continued attention towards encouraging investment in its businesses (World Bank 2008c).

Infrastructure is a substantial obstacle to economic diversification in Nigeria. Only 15 percent (29,000 km) of the country's roads are paved, and the inadequacy of the road network has been estimated to cost the country 3 percent of GDP per year (World Bank/DFID 2005). The electricity supply is untrustworthy and not widespread (per capita electricity consumption in 2005 was 127 kWh, less than half that in Ghana (World Bank 2008d)), and only 24 percent of Nigerians have mobile phones. Only 6 percent have access to the internet (World Economic Forum 2008).

Inadequate inland container depots and poorly policed offshore waters present additional disincentives for entrepreneurs who wish to engage with international markets. Piracy and armed robbery remain constant threats to ships and their cargo (CIA 2008). Trading across borders proves costly, and significant lags are found in the import/export process: it takes an average of 25 days to arrange an export, and 42 for an import (World Bank 2008c). In

light of these circumstances, Nigerian businesses must absorb significant costs and risk in order to engage with global markets.

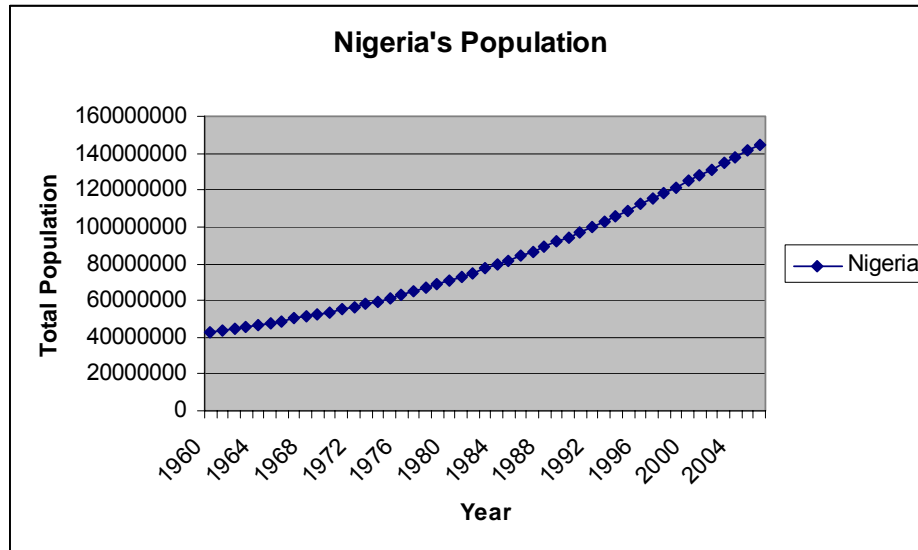
With respect to the tax payment system, Nigeria ranks 120th of 181 economies. Businesses make 35 payments on average per year, taking 938 hours (equivalent to approximately 117 eight-hour workdays). The total business tax rate is 32 percent of profits. The time taken compares unfavorably with the Sub-Saharan African average, but the number of payments and the total tax rate are lower (perhaps due to heavy government reliance on funds generated through the oil industry, a potentially precarious situation given the industry's volatility) (World Bank 2008c).

Population

Population size and trends

Nigeria's population in 2007 was 148 million, having risen sharply from 30 million in 1950 (World Bank 2008d; UN Population Division 2001). It is now Africa's most populous country (UN Population Division 2001).

Figure 15: Nigeria's Population (World Bank 2008d)

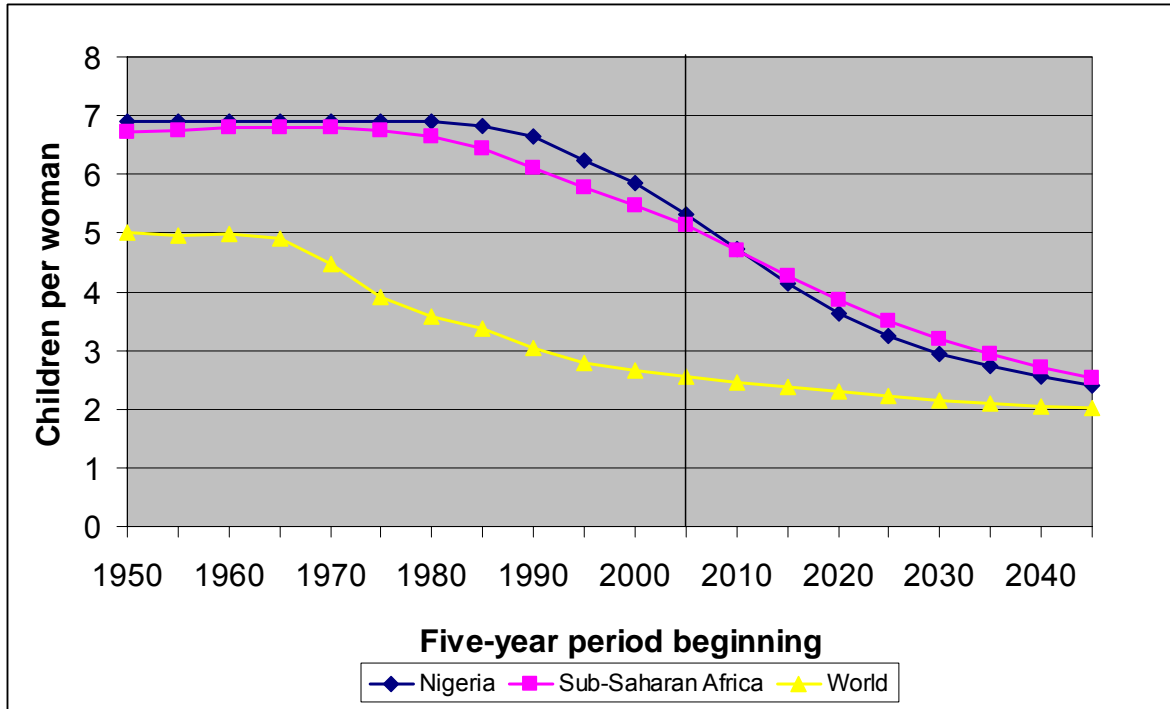


Nigerian population data are not always reliable. Federal money is allotted to states in proportion to their respective populations, so censuses are often “marred by fraud and mayhem, as each tribe seeks to inflate its numbers” (Guest, 2004). This situation is complicated by the fact that Nigeria is home to more than 250 ethnic groups whose locations are divided along regional lines.¹⁶ Because religion divides regionally as well—the South is largely Christian while the North is predominantly Muslim—state-funding often has implications for both ethnic and religious groups, bolstering incentives to inflate population data (John et al. 2007).¹⁷ Thus, careful consideration of such data is crucial for the development of accurate and meaningful analyses.

Nigeria’s total fertility rate (TFR) of 5.43 in 2006 exceeds that of Sub-Saharan Africa as a whole and is more than twice the world-rate. This, however, reflects a decreasing trend in TFR that seems to have begun in the early 1980s (World Bank 2008d). UN projections suggest that Nigeria’s TFR will dip below the average for Sub-Saharan Africa within the coming decade (United Nations 2007). It is expected to decline to 3.64 children per woman in 2020-2025 and to 2.4 in 2045-2050 (UN Population Division 2006).

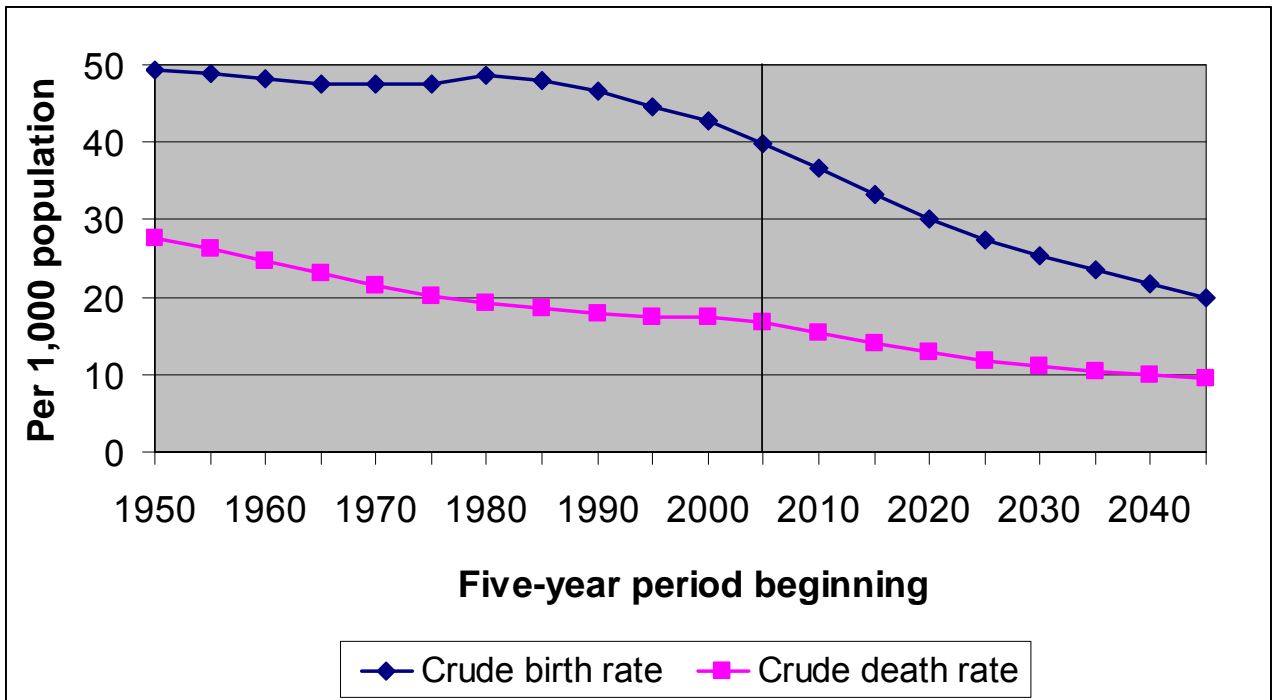
¹⁶ The Hausa and Fulania (who together make up 29 percent of Nigeria’s population) live primarily in the north, with the Yoruba (21 percent) residing mainly in the southwest and the Igbo (18 percent) in the southeast (John et al. 2007). Other major ethnic groups include the Ijaw (10 percent of the country’s population, primarily located in the southeast), Kanuri (4 percent, primarily in the north), Ibibio (3.5 percent, primarily in the southeast) and Tiv (2.5 percent, primarily in the north (CIA 2008).
¹⁷ Nigeria’s population is about 50 percent Muslim and 40 percent Christian, with 10 percent holding indigenous beliefs.

Figure 16: Total Fertility Rate (United Nations 2007)



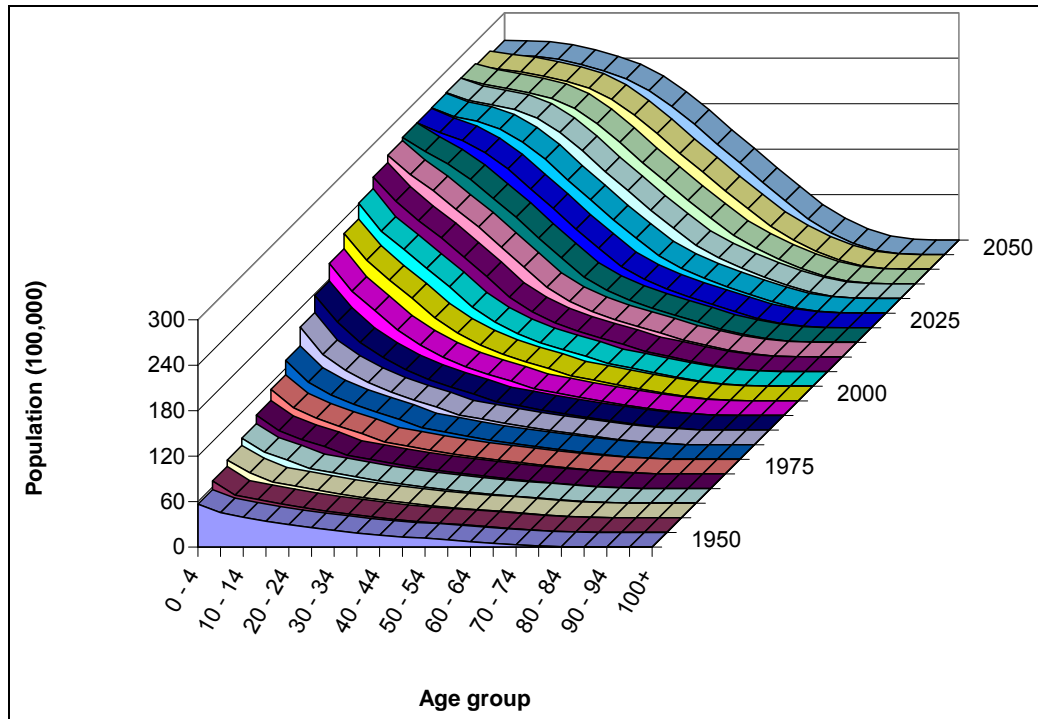
As fertility rates decline in Nigeria, annual population growth is likely to slow from 2.7 percent (in the period from 1995-2000) to 1.69 percent in 2020-2025 and 1 percent in 2045-2050 (United Nations 2007). Shaped by birth and death rates, the components shaping Nigeria's population growth year-by-year might be best visualized through a comparison of the country's crude birth and death rates (See Figure 17).

Figure 17: Nigeria's Crude Birth and Death Rates (United Nations 2007)



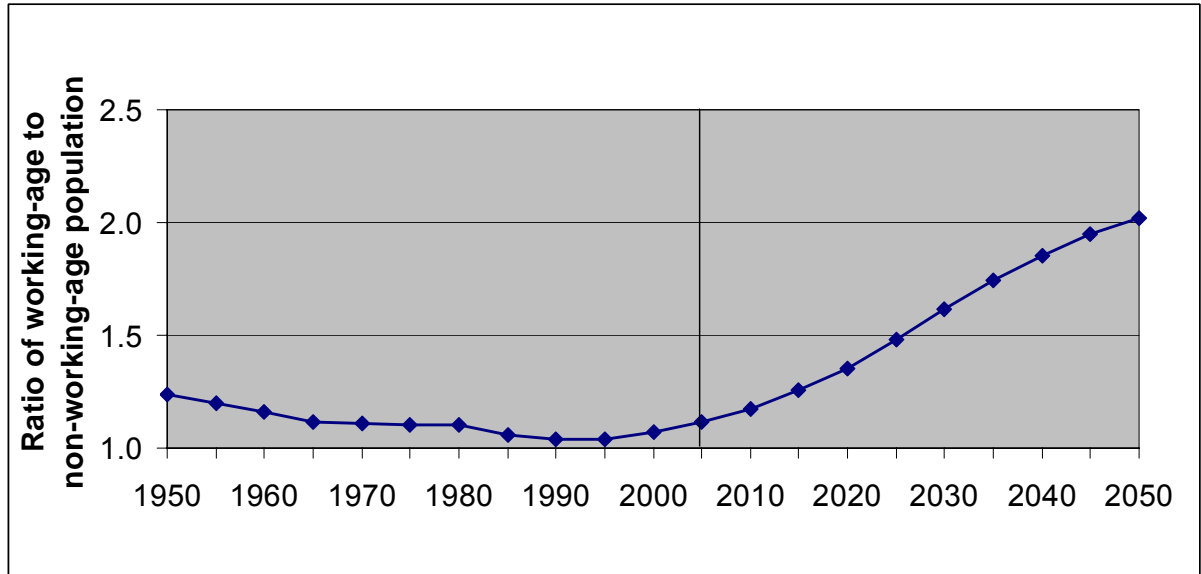
While the concurrent bump in birth rate and drop in death rate for 1975 through 2000 would be expected to produce swift population growth, the two trends seem to be approaching each other over the long run. As the difference between these rates shrinks, a slowing of population growth should result. However, despite this slowdown, the UN projects a population increase to 210 million individuals in 2025, and 289 million in 2050, the bulk of which will be in the working-age population (UN Population Division 2006).

Figure 18: Population Projection for Nigeria (United Nations 2007)



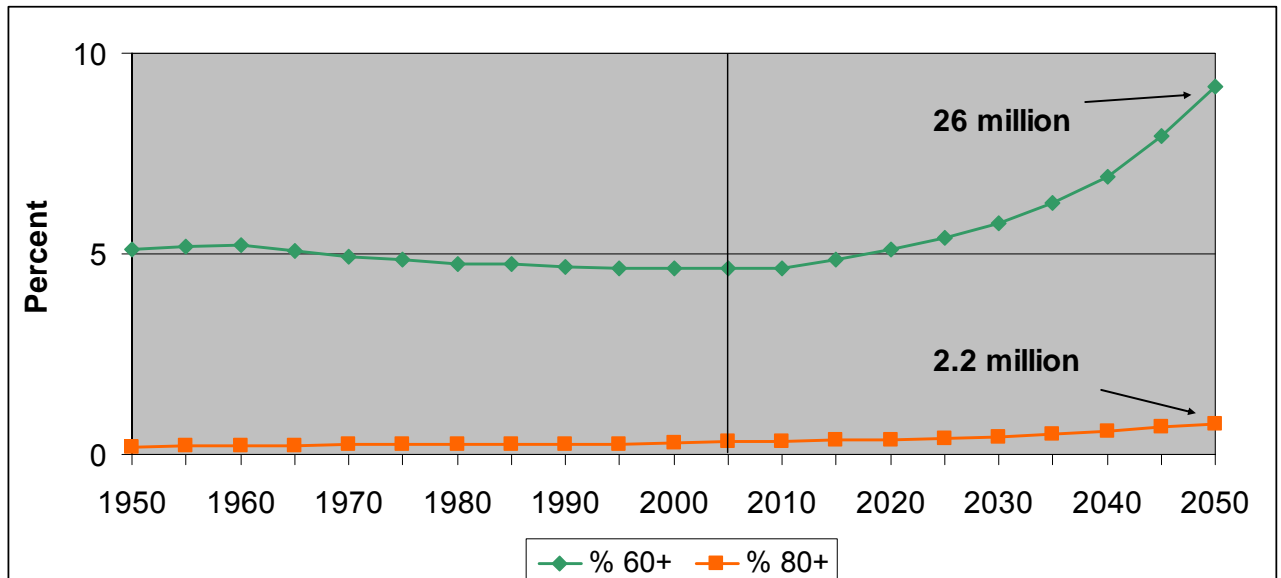
The number of working-age people (aged 15-64) is expected to rise from 75 million in 2005 to 125 million in 2025 and 193 million in 2050. While the number of children (63 million) was not much lower than the number of working-age adults in 2005 (75 million), UN projections suggest that, by 2050, there will be almost triple the number of working-age adults as children, with the ratio of working-age to non-working-age population members just passing 2 by 2050 (See Figure 19).

Figure 19: Nigeria's Ratio of Working-age to Non-working-age Population (United Nations 2007)



Nigeria is expected to transition from having 0.90 dependents per worker in 2005 to 0.50 in 2050, as the median age rises from 17.2 to 28 (UN Population Division 2006). As the country's population ages, however, Nigeria will also face a new challenge of providing for a growing elderly population (See Figure 20). This subset of Nigeria's population, expected to begin growing rapidly around 2020 and include more than 25 million individuals by 2050, will have specialized needs, particularly in terms of chronic illness and care. As the country does not as of yet provide for such needs on so large a scale, a shift in markets, services, and professional training will, most likely, prove necessary.

Figure 20: Nigeria's Elderly-Share (United Nations 2007)



Urbanization, Population Pressure, & Migration

The distribution of Nigeria's population is shaped, to a great extent, by rapid urbanization.¹⁸ The proportion of urban dwellers as a percentage of the overall population rose from 28.6 percent in 1980 to 46.2 percent in 2005, while the country's urban population now grows at a rate of 3.78 percent per year. In comparison, Sub-Saharan Africa's urban population growth rate of 3.67 percent falls short of this, as does its 2005 percentage of urban dwellers (35 percent) (United Nations Population Division 2008). With more large cities (i.e., those with over one million people) than any other country in Africa, in addition to such a large and quickly growing urban population, Nigeria may face different and perhaps greater challenges in dealing with rapid urbanization than its neighbors (Maconachie and Binns 2006).

Among these challenges is that of concentrated poverty. According to one study, low-income households make up 70 percent of the urban population, but occupy only 30 percent of the land (Onwuka 2005). According to a 2003 publication, 70 percent of Lagos' population works in the informal sector (DFID 2003). Over 50 percent of the city's population lives in informal settlements (Ademiyuli and Solanke 2008). The consequent insecurity of property rights leaves many unable to use their land as collateral when seeking credit, and may act as a disincentive against longer-term investment in housing and other regional infrastructure.¹⁹

Waste, in many ways an infrastructure issue, poses a serious problem in cities. In 1998, a study found that less than 50 percent of waste generated in the city of Ibadan was collected (CASSAD 1998). 22 percent of urban dwellers lack access to improved sanitation facilities (Ademiyuli and Solanke 2008/World Bank 2008d).²⁰ In 2006, only 47 percent of Nigeria's population had access to improved water sources (World Bank 2008d). The high urban population density in Nigeria's cities compounds the health hazards posed by this lack of sanitation facilities and access to reliable and clean water sources.

Continued population pressure shapes both cities and rural areas. In a survey of 90 households in peri-urban Kano in northern Nigeria, respondents reported that population pressure is forcing them to farm ever smaller plots of land more intensively, and thus making it infeasible to leave land fallow. Over the past 30 years, this has resulted in a reduction in soil quality (Maconachie and Binns 2006). Land degradation is forcing farmers to engage in non-farm activities in order to survive, while concurrently raising the stakes in

¹⁸ Between 1952 and 1991, the number of urban areas in Nigeria increased from 56 to 359 between 1952 and 1991 (Onwuka 2005). Lagos currently has over 10 million residents, and is expected to have 17 million (UNDESA 2004) or 25 million (DFID 2003) by 2015.

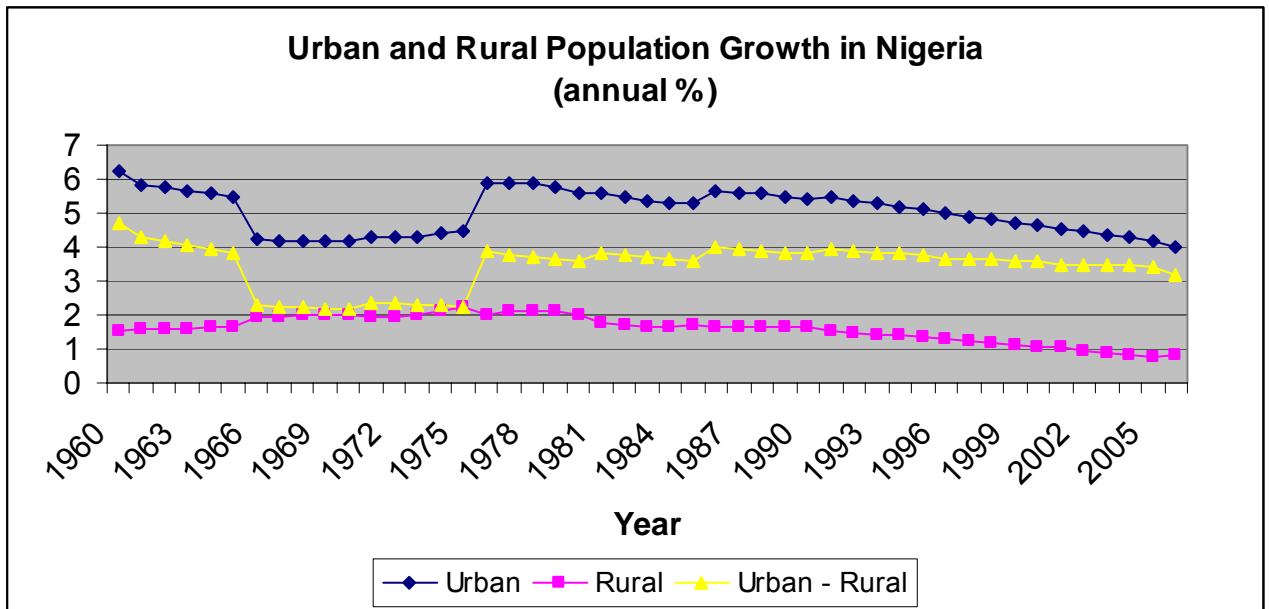
¹⁹ Writing of Africa as a whole, Boudreaux (2008) notes the high demand for affordable housing, which often fails to stimulate a market response because of the large regulatory barriers put in place by governments and municipal authorities. Boudreaux recommends that city officials work more closely with slum dwellers' associations to find ways of increasing tenure security for the urban poor, and that they empower local people to find their own ways of providing infrastructure and water and sanitation services. He suggests that housing micro-finance may enable the poor to improve their land and housing, that private owners of land should be compensated when their land is occupied by slum-dwellers, and that the latter should be given certificates of occupancy or more permanent leasehold or ownership rights.

²⁰ Considering the country as a whole, 35 percent of Nigerians have access to improved sanitation facilities. The comparable statistic for rural dwellers is 36 percent (Ademiyuli and Solanke 2008/World Bank 2008d).

and risk of conflict over remaining land. In northern Nigeria in particular, “soil degradation due to nutrient mining, erosion and desertification is the major threat to food production” (Yusuf and Yusuf 2008). Thus, the country’s fewer than 0.23 hectares of arable land per person (as of 2005) is of particular concern (World Bank 2008d).

Given this scarcity of arable land, the high incidence of rural-to-urban migration is to be expected. From Figure 21 and the fact that the total fertility rate (TFR) for rural regions in Nigeria (6.1 children per woman) exceeds that for urban (4.9 children per woman), it is clear that Nigeria’s urban population has grown at a faster rate than the rural population for reasons beyond urban fertility alone. That said, Nigeria’s internal migration does not flow exclusively from rural to urban. A 1993 survey of 86,233 people by the Nigerian Institute for Social and Economic Research found that 64 percent of rural migrants migrated to other rural areas, with 36 percent moving to towns and cities (Mberu 2005).

Figure 21: Urban and Rural Population Growth (World Bank 2008d)



Mberu’s study also found that Christians were more likely than Muslims to migrate internally, perhaps because of religious restrictions on movement for female Muslims in particular. Hausa-Fulani people were more likely to be rural-rural migrants than all other ethnic groups except the Nupe-Kamberi-Gwari. Rural-urban migrants, however, were unlikely to be Hausa-Fulani. The Urhobo-Edo-Isoko and the Igbo-Ibibio were much more likely to migrate to urban areas, with the Igbo’s national dominance of the trading sector and high population and low economic development in the Igbo region likely causes of their high out-migration rates. The Niger Delta region was the origin of large numbers of people from both the latter two groups. In 1993, the South West region (including Lagos) was not a popular destination for rural-urban migrants. This reflected a slowing of urbanization in Africa in the 1980s and 1990s. More recently, however, migration to Lagos has increased, and the city’s population is growing by 10-15 percent per year (DFID 2004).

Migration also varies by educational level. Those with the highest levels of education were ten times more likely to migrate from rural to urban areas than those with the lowest levels

(the ratio for rural-rural migration was 2:1). However, a large proportion of rural-urban migrants end up unemployed for months or years (Mberu 2005, NISER 1997).

Emigration has created a diaspora of over 2 million Nigerians (DFID 2004). There are over 20,000 living in Spain, for example, up to half of whom are illegal migrants (Sandell 2005). Sandell found that the increase in the number of Nigerian immigrants to Spain is positively and closely correlated with increasing urbanization in Nigeria and with the size of Nigeria's working-age population. As urbanization quickens and Nigeria's working-age population grows, so does emigration to Spain. 'Pull' factors also play a role: as the difference in per capita GDP between the two countries has grown, so has the quantity of Nigerian migrants to Spain.

Fertility & Population Policy

Fertility rates in Nigeria vary by a number of factors, including geography and education (UNFPA 2005). The 2003 Nigeria Demographic and Health Survey's data for women ages 15 to 49 exhibits a fertility rate of 4.9 children per woman in urban areas, compared with 6.1 children per woman in rural settings. Of women aged 15-19, 29.6 percent of those living in rural areas have begun childbearing, compared with 16.7 percent of those in urban areas (StatCompiler: Building tables with DHS data). Urban-rural poverty differentials might explain some of this difference: women from the wealthiest quintile of the population have 4.7 children, compared to 6.6 children for women from the poorest quintile. The decline in fertility has been faster in urban than rural areas over the past three decades (Feyisetan and Bankole 2002).

Regional differences in fertility are also evident, as greater observed and desired TFR are exhibited in the country's North than in the South, with the highest levels found in the North East and the lowest in the South East (National Population Commission Federal Republic of Nigeria 2004).²¹ Ethnic or religious variations in fertility determinants might help explain these regional differences to some extent, as the distribution of ethnic groups in Nigeria's predominantly Muslim North differs from that in the largely Christian South. A study of 7,000 families by Akpotu (2008) found that the main reasons for high fertility were a love of children, the polygynous nature of many Nigerians (in 1999, 39 percent of Nigerian women were in polygynous unions (Feyisetan and Bankole 2002)), the desire for children of a particular sex, ignorance of the implications of having a large family, and a lack of willingness to embrace family planning. If polygyny, gender preferences, and certain attitudes towards family planning are closely related to ethnicity or religion, as one might expect, fertility differences are likely to vary by regions, reflecting the norms of the dominant ethnic groups therein.

Perhaps the most revealing relationship, from a policy perspective, is that between fertility and education. Women with education beyond the secondary level have 2.8 children on average, compared to the 6.7 borne by women with the lowest level of education (National Population Commission Federal Republic of Nigeria 2004). This finding supports those of a

²¹ See Regional Profiles section for further information discussion of regional differences in fertility.

2008 study which estimates that each one-year increase in female education reduces early fertility (before age 25) by 0.26 births, and finds that early fertility in turn is strongly associated with completed fertility (Okonkwo et al. 2008). A further study of couples that have been married for at least 15 years found that families without any formal education had an average fertility of 6.7 children per woman, while those with advanced education averaged 4.3 children. The association between education and reduced fertility is slightly stronger in rural than urban areas (Akpotu 2008). Interestingly, in considering TFR reductions captured by Nigeria's 1990 and 1999 National Demographic and Health Surveys, Feyisetan and Bankole (2002) find a greater reduction among women with completed primary schooling than those with secondary or higher education.

In the same study, Feyisetan and Bankole note a number of other shifts likely to have influenced total fertility. Specifically, among women aged 25-49, the age of first marriage rose by a year from 1990 to 1999, while the total proportion of women married fell from 78.4 percent to 70.1 percent. Contraceptive use among married women increased from 6 percent to 15 percent over the period, with greater percent increases in contraceptive use exhibited by rural areas than urban ones. The authors attribute some of this increase to improved family planning services, including involvement by civil society organizations and the participation of men in family planning activities. Government family planning provision, however, remains weak. Initiatives within Nigeria are funded and supported predominantly by donors and non-governmental interest groups (Feyisetan and Bankole (2002).

Prior to the 1980s, Nigeria's National Development Plans included little about population. It was not until 1980 that a long-promised National Population Council was established. The Fourth National Development Plan (1981-1985) presented an official stance on population growth: "in order to bring the overall growth rate of the population down to a level that will not impose excessive burden on the economy, the fertility rate must decline" (Obono 2003).

In 1988, Nigeria launched its first population policy, to address what political leaders saw as the growing population problem. The policy only had limited impacts on fertility, however, and received criticism because it primarily targeted females as being responsible for high fertility. While it encouraged women to reduce fertility to no more than four children, the policy simultaneously upheld the patriarchal family structures that encourage men to have many wives and many children (Obono 2003). As Obono (2003) summarizes, "[the Population Policy] ignored the influence of patriarchal structures on women's fertility and overlooked the fact that women managed, or mismanaged, their reproductive lives within the context of a male-dominated society." Moreover, despite varying rates of fertility exhibited throughout Nigeria, the policy applied uniformly to all communities. For example, the Population Policy encouraged all women to increase their age of marriage to 18. This proved ineffective for Igbo women, however, as they marry later on average than other Nigerian women. Marriage at age 18 would, for these women, amount to a reduction in the average age of marriage.

The policy also failed to address other motivations for high fertility. For example, because government spending is allocated by region in proportion to population size, there is a strong incentive for each region to maintain high fertility in order to acquire government

services and investment (Obono 2003). Feyisetan and Bankole (2002) concur, pointing out that fertility, which has plummeted in the south, has barely shifted in the north: “unless reduction in fertility becomes accelerated in other areas of the country and unless there is political reorientation or restructuring that engenders national as against sectional thinking, politicians, especially from the south, may formulate policies that reduce child-rearing cost in order to stall further declines in fertility.”

Family planning is distributed between the three government levels via the Planned Parenthood Federation of Nigeria, an affiliate of the International Planned Parenthood Federation and an important supplier and promoter of family planning services. While most family planning facilities are integrated rather than vertical, a 2003 study found that vertical organization increases service provision (Mancini et al. 2003).

Health

The Health System

In 2000 the World Health Organization ranked the performance of Nigeria’s health system 187th of 191 countries. The challenges facing Nigeria’s health system often fall into at least one of three categories: resources, access, and structure.

With approximately 37 physicians, 91 professional/registered nurses, and 64 registered midwives per 100,000 population-members in 2007, Nigeria’s healthcare capacity is solid for Sub-Saharan Africa but still stretched thin. With only 2 lab technicians per 100,000 population-members, the diagnostic capacity of these physicians and nurses is even further hampered (Labiran et al. 2008). Care for those who delay or cannot afford hospital visits also remains in short supply, with data from 2004 indicating the presence of only 5 pharmacists and 91 community health workers per 100,000 Nigerians (WHO 2006).

Significant out-migration of Nigerian health workers exacerbates these problems. 9 percent of medical graduates trained in Nigeria now work in the US or Canada, with 2,000 such physicians practicing in the UK (Hagopian et al. 2004; DFID 2004). 85 percent of those Nigerian health workers who emigrate are graduates of the medical schools at the Universities of Ibadan, Lagos, Nigeria, Benin, and Ife (Hagopian et al. 2004).²² Factors contributing to this out-migration include the opportunity to earn a higher salary in North America, Europe, or the Middle East, limited prospects for career advancement within Nigeria, and the lack of educational and work opportunities for physicians’ families, particularly in rural areas. Physician and nurse attrition rates are highest in the primary care sector, and are two or more times greater in rural than in urban regions (Uneke et al. 2008).

Furthermore, doctors in Nigeria receive training to treat patients using far more sophisticated and higher quality instruments and resources than are generally available in practice. This imbalance influences doctors’ ability to treat patients effectively with the resources at hand and further contributes to out-migration and attrition (Uneke et al. 2008).

²² Nigeria has 18 medical schools and 71 nursing schools (Labiran et al. 2008).

According to the WHO (2002), most health facilities are “poorly equipped and lack essential supplies and staff,” while over one-third of rural health facilities lack electricity (World Bank/DFID 2005). A study in Cross River state by Garner et al. (2004) found particular weaknesses in auditing processes and the standardization of care both in government and private hospitals. The quality of medication is also a concern, as Nigeria has experienced particular trouble with counterfeit, contaminated, and diluted medications.²³

In an attempt to address issues of health worker attrition and lack of access to care, and to reduce Nigeria’s maternal mortality rate, a relatively new government policy requires all midwives and nurses to join Nigeria’s university and polytechnic institute graduates in completing a mandatory year in the National Youth Service Corps, a program established by the government in 1973 through which participants are assigned to work in a (usually rural) state other than their own (Labiran et al. 2008; Marenin 1990).

Notably, the aforementioned measures of health worker density do not account for geographic location of medical care centers versus those in need, suggesting that access to healthcare could be more impeded than statistics alone suggest. Nigeria’s distribution of healthcare providers differs by geographic and regional factors (WHO 2006). More than half of the country’s physician specialists work in the South West, while the northern regions exhibit a health worker shortage that is particularly severe in Niger, Jigawa, Zamfara, and Taraba states (Labiran et al. 2008). The percentage of people in the southeast and southwest who live within 10 km of a health center is more than 10 percentage points greater than that for those living in the northeast and northwest (WHO 2002). Distributional challenges also exist within states, as evinced by the observation that “an urban resident has access to 3 times more doctors and twice as many nurses/midwives, compared to a rural resident” (Uneke et al. 2008).

A multivariate analysis by Ichoku and Leibbrandt (2003) found that families based farther away from healthcare services were less likely to use them, as were poorer families, larger families, and less educated families. Urban dwellers were twice as likely as rural people to seek healthcare. In many cases, people only seek care once an illness becomes severe (Ichoku and Leibbrandt 2003).²⁴ Non-severe illnesses are nearly always treated with patent medicines, and one-quarter of Nigerians do not have access to a pharmacy (Roberts 2003). Thus, access presents a continued barrier to healthcare, both within and outside of Nigeria’s formal health system. And, while a National Health Insurance Scheme was launched in 2005, the above evidence suggests that, even were the insurance program to greatly reduce or eliminate monetary barriers to healthcare, issues of access to care would likely remain due to geographic and educational factors (IMF 2007).

²³ In 1990, 109 children died as a result of contaminated cough syrup, while vaccination with counterfeit vaccines during a meningitis epidemic in 1995 caused the deaths of 2500 people (Chauvé 2008). More recently, between late November 2008 and early February 2009, at least 84 children died after taking a medicine for teething pain, a batch of which had a toxic chemical mixed into it by an unlicensed chemical dealer in Lagos (Polgreen 2009).

²⁴ To address these issues, Ichoku and Liebrandt (2003) suggest policy-makers focus on primary healthcare services that help detect early symptoms and refer patients to curative health centers. They also note that training patent medicine dealers could prove beneficial.

The funding and structure of Nigeria's medical system is another key factor in the country's uneven distribution and quality of healthcare. WHO data for 2006 cites Nigeria's total expenditure on health as comprising 4.1 percent of GDP, with private expenditure accounting for about 70 percent of this. As out-of-pocket expenditure constitutes just over 90 percent of private health expenditure, more than 60 percent of Nigeria's total health expenditure can be attributed to out-of-pocket payments. This has clear implications for the efficiency of Nigeria's health system, as the country's few resources devoted towards health expenditures are funneled towards managing and maintaining the private health system. Per capita government expenditure on health (at the average exchange rate for US dollars) was only \$10 in 2006, less than one third of the \$34 per capita per year cost of "the set of essential interventions" calculated by the WHO's Commission on Macroeconomics and Health (WHOSIS; WHO 2001).

Healthcare costs faced by Nigerian consumers have been increasing, due to both a structural adjustment program begun in the 1980s and escalating fees charged for services in public health facilities (Onwujekwe and Uzochukwu 2005). One study surveying 650 households in two communities in Enugu State, South East Nigeria, found that the first point of treatment for illnesses in the month prior to the survey was most commonly patent medicine dealers, followed by hospitals. Very few respondents used primary healthcare centers as their first port of call; respondents perceived these centers as offering worse healthcare than hospitals and as less accessible than patent medicine dealers. The average cost of treatment was 1214 naira (roughly \$10), just over one sixth of the national monthly minimum wage. There was little difference in expenditure between the wealthiest and poorest quintiles of the surveyed population. The study's authors argue that the government "has to re-engineer the Primary Healthcare system so that the consumers will see primary healthcare centers as attractive places to go for treatment or the consumption of other healthcare goods and services" (Onwujekwe and Uzochukwu 2005).

The use of patent medicine dealers as the primary port of call in managing health, as well as the fact that, in 2002, 60 percent of Nigerians used private rather than public health services, suggests that a good deal of out-of-pocket health expenditure, the primary contributor to Nigerian health expenditure, is not channeled into the formal healthcare system (DFID 2004). The use of patent medicine dealers in particular suggests a reactive, as opposed to preventive, approach to health.

The national healthcare system's structure complicates funding and administration. With "primary, secondary and tertiary care provided by the local, state and federal governments respectively," a shift towards preventative care may introduce undue stress on local governments and be handicapped by the need for a unified national approach to healthcare, involving significant buy-in and coordination across all levels of government:

"The Federal ministry of health has the responsibility to develop policies, strategies, guidelines, plans and programmes that provide the overall direction for the national healthcare delivery system. The state ministries of health provide secondary level of care and technical advice as well as supervision to the Local Government Areas (LGAs). The LGAs are the implementers of the primary healthcare services including immunization. The

organization of the health system includes both public and private sector providers” (GAVI 2006).

Achieving a fundamental shift in the healthcare system in an efficient and timely manner is likely to require a seamless relationship between policy, funding, and implementation. The fragmented organization of responsibilities within Nigeria’s health system presents a particular challenge to this process. Addressing this fragmentation is critical, as it not only makes improving healthcare more difficult, but is also considered harmful to health outcomes in Nigeria: “health outcomes are worse than in similarly poor countries, and poor access to basic health services is a significant factor. The referral system is fragmented and uncoordinated...with insufficient public funding for most basic services” (World Bank/DFID 2005). (See Table 2 for an outline of responsibilities in Nigeria’s health system.)

Table 2: Health System Structure (WHO 2002)

Institution	Responsibilities
<i>Federal government</i> ²⁵	<p>Policy formulation, strategic guidance, coordination, supervision, monitoring and evaluation at all levels.</p> <p>Operational responsibility for disease surveillance, essential drugs supply and vaccine management.</p> <p>Provision of specialized healthcare services at tertiary health institutions (university teaching hospitals and federal medical centers). These serve as referral institutions for the secondary health facilities.</p> <p>Management of teaching hospitals and medical schools for training doctors.</p>
<i>Parastatals</i>	<p>National Agency for Food and Drug Administration and Control (NAFDAC), National Primary Healthcare Development Agency (NPHCDA), National Programme on Immunization, Nigerian Institute for Medical Research, National Action for Prevention and Control of AIDS (NAPCA). These organizations address priority health issues, but a lack of synchronization may result in inefficient and overlapping efforts.</p>
<i>States</i>	<p>Shares responsibility for healthcare with local government authorities.</p> <p>Operates secondary health facilities (general hospitals and comprehensive health centers) and makes referrals to local government authorities, which provide primary healthcare.</p> <p>Responsible for training nurses, midwives and community health extension workers.</p>

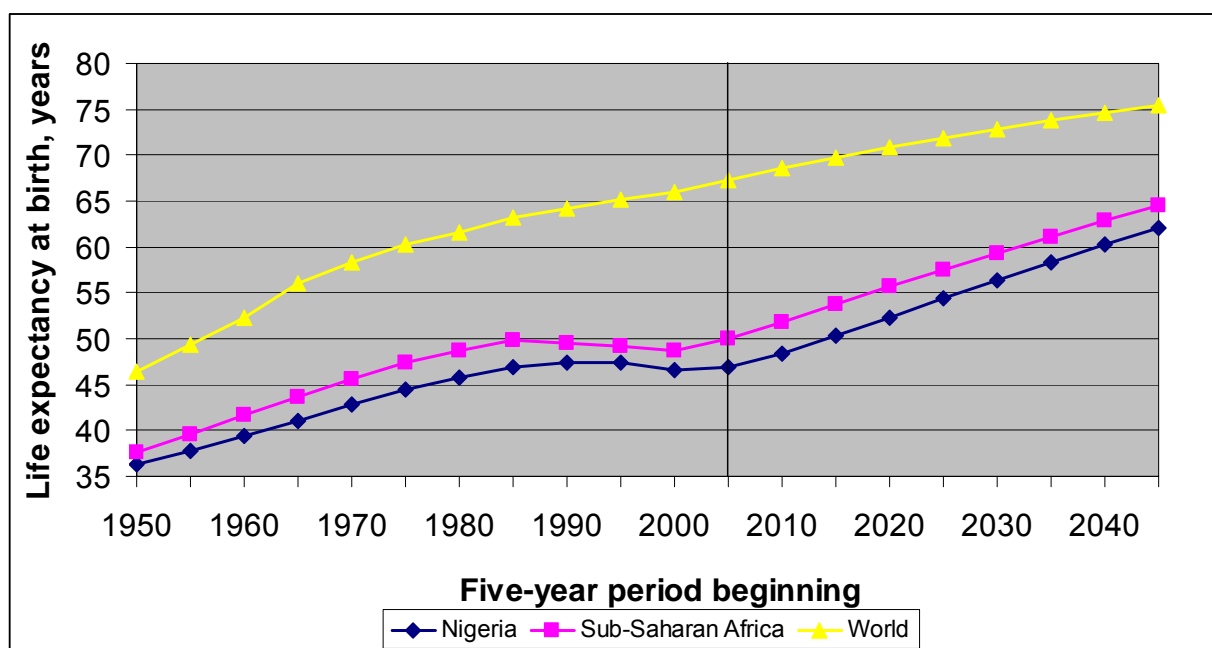
²⁵ While the federal government has some leverage over state health ministries, it cannot compel them to implement specific programs (WHO 2002).

	Some states build and operate tertiary facilities or specialist hospitals.
<i>Local government authorities</i>	Provision of basic health services. Management of primary healthcare facilities.

Overall Health Indicators

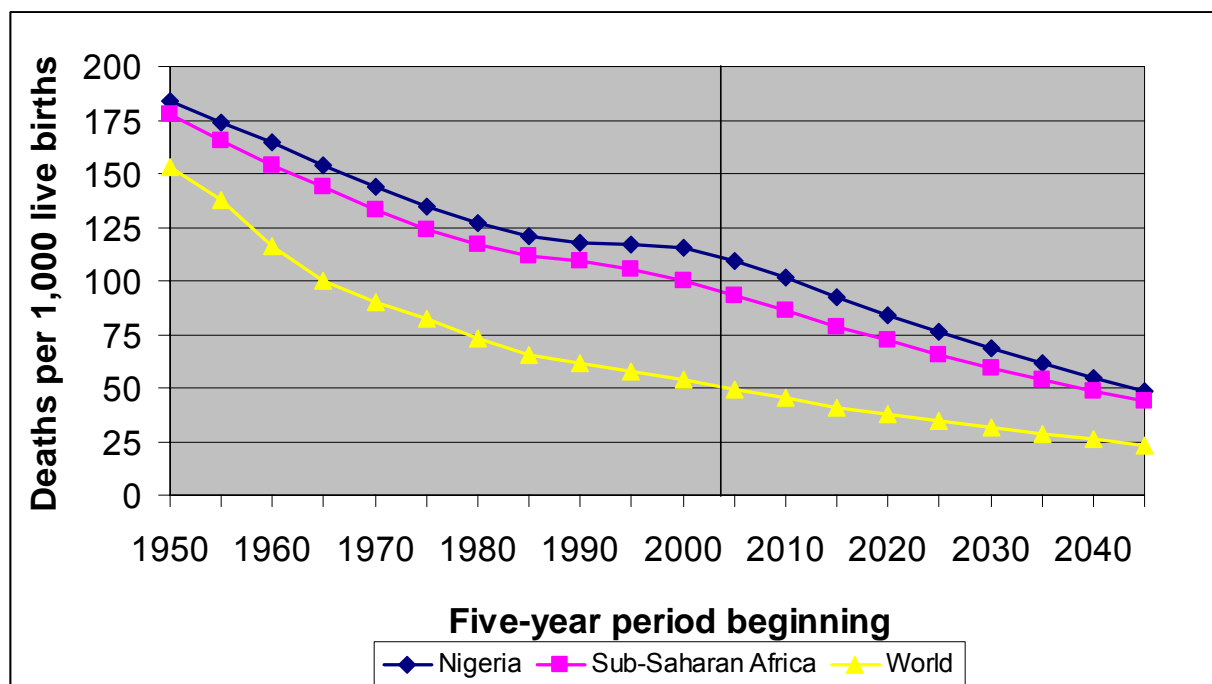
Below the Sub-Saharan average but generally following the region's trend, Nigeria's life expectancy increased from 1960 to around 1995, when it entered a two decades-long plateau. Nigeria's trend diverges from that of the world as a whole, for which life expectancy has seen a roughly steady increase since 1950, though it generally mirrors the trend of Sub-Saharan Africa (See Figure 22). Current life expectancy estimates differ based on the data source, but generally place that of Nigeria around 47 or 48 years (WHO 2008; World Bank 2008d). Of the 177 countries ranked for life expectancy in the 2005 UN Human Development Index, Nigeria ranks 165th (UNDP 2008).

Figure 22: Life Expectancy at Birth (United Nations 2007)



Estimates differ for infant mortality per 1,000 live births (IMR) in Nigeria. While the UNDP cites an 8 percent drop in infant mortality from 1970 to 2000, the World Bank estimates a 7 percent increase from 1965 to 1993 (UNDP 2003; Wright 1998). Trend data suggest that Nigeria's infant mortality followed a similar path to that of Sub-Saharan Africa as a whole, though the country's rate is higher than the regional average. The two trend lines do seem to deviate in the 1990s, as Nigeria's IMR temporarily plateaus while Sub-Saharan Africa's continues to drop. However, the projections suggest that the two trends will approach each other more closely over the coming decades (See Figure 23).

Figure 23: Infant Mortality Rate (United Nations 2007)



According to the most recent WHO figures, Nigeria’s infant mortality rate in 2006 was 99 per 1,000 live births. Variation by geography, socioeconomic status, and maternal education, however, has been observed. The North East exhibits the country’s highest regional IMR of 125, while the South East’s IMR of 66 is the lowest of Nigeria’s regions. Urban and rural areas have IMRs of 81 and 121, respectively. To some extent, this might be explained by an uneven urban-rural distribution of wealth: IMR among the wealthiest quintile of families is 69 but stands at 102 among the poorest quintile. Education could prove another explanatory factor, as IMR is 71 among infants whose mothers have high levels of education, but 124 among those whose mothers have little education (UNFPA 2005). Differential access to medical facilities may also play a role.

Child Health

In Nigeria, over a million children die each year from preventable diseases (Ngowu et al.2008). Under-5 mortality is falling, from 206 per 1,000 in 1990 to 191 per 1,000 in 2005, but this is among the slowest declines in Africa, and the 2005 figure still exceeds the Sub-Saharan average (WHO 2008). As of 2000, the main causes of death in children under-5 were neonatal causes (26.1 percent), malaria (24.1 percent), pneumonia (20.1 percent), diarrheal disease (15.7 percent), and measles (6.3 percent) (WHO 2006).²⁶ Like infant mortality, the child mortality rate varies widely depending on a family’s socioeconomic status – the rate among the wealthiest quintile is 119.8 per 1,000, and among the poorest quintile 239.6 per 1,000 (UNFPA 2005).

²⁶ Deaths due to neonatal causes may or may not have been associated with the conditions cited separately as significant causes of death in children under-5 (e.g., malaria, pneumonia, etc.).

Over half of the country's child deaths are associated with malnutrition (WHO 2002). 29 percent of Nigeria's children under 5 are underweight. Only 23 countries have a higher percentage. Rural children from poor families with low levels of education are more likely to be severely underweight than wealthy urban children from well-educated families. Regionally, the country's North West displays the highest proportion of severely underweight children (14.7 percent) (UNDP 2008).

The relationship between government health expenditure and child mortality is well demonstrated. For Nigeria in particular, a quantitative study of time series data from 1970 to 2003 by Ngowu et al. (2008) found that a 1 percent increase in per capita government spending on health was associated with a decrease in under-5 mortality of 89 per 1000. When expenditure decreased, on the other hand, child mortality increased. The study also found that a 1 percent increase in the maternal literacy rate was associated with a reduction in under-5 mortality of 2 per 1000. Adoption of the Expanded Programme on Immunization, however, did not exhibit a statistically significant effect.

Immunization

Routine immunization coverage in Nigeria is still very low by international standards. According to the Expanded Programme on Immunization, a routine vaccination schedule for children in Nigeria should include BCG at birth (tuberculosis vaccine); oral polio at birth as well as at 6, 10, and 14 weeks; DTP3 at 6, 10, and 14 weeks (Diphtheria-Tetanus-Pertussis); HepB3 at 6, 10, and 14 weeks (Hepatitis B); Hib at 6, 10, and 14 weeks (*Haemophilus Influenzae* type B); and yellow fever (YFV) and measles (MCV) at 9 months (WHO 2004). As of 2004, Nigeria's National Immunization Schedule included all these vaccines except for Hib, which is scheduled to be introduced in July 2009 via a pentavalent vaccine encompassing DTP, Hib, and HepB (GAVI 2008).

In practice, immunization coverage is mixed and far from universal for any of the key childhood vaccines (see Table 3), although Nigeria has made significant progress over the last 30 years in vaccine coverage and campaigns. Shortfalls in basic vaccine coverage further hinder the uptake of new and underutilized vaccines, which protect against some of the greatest threats to children (e.g., pneumococcal disease and rotavirus).²⁷

Table 3: Nigeria's Reported Vaccine Coverage for 2007 (WHO 2009, WHO 2008c)

Antigen	Coverage
BCG	69%
DTP3	54%
Pol3 ²⁸	61%
MCV	62%

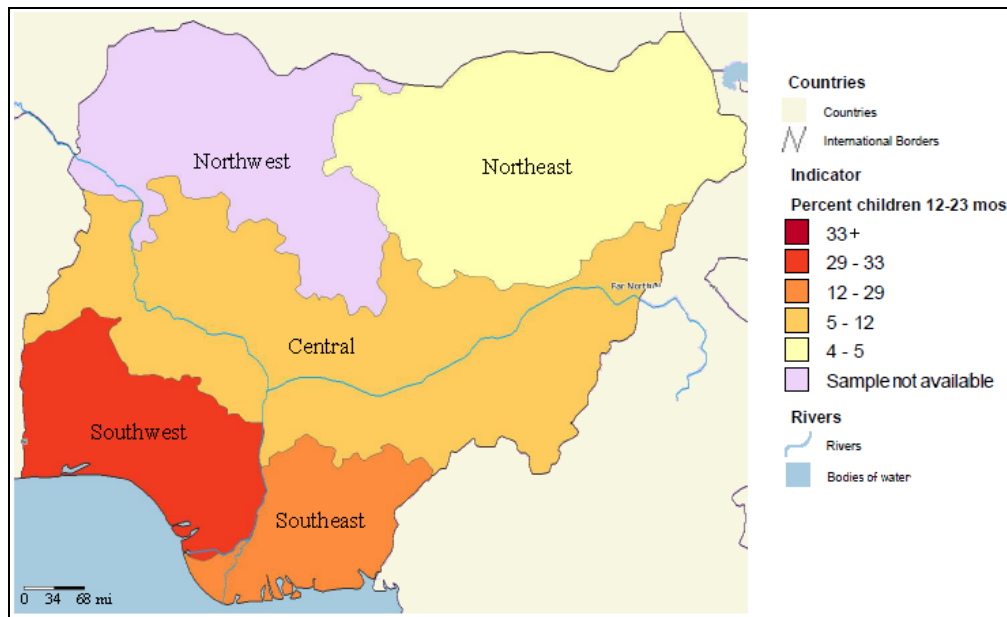
²⁷ DTP3 coverage is considered an obligatory starting point for immunization programs. Inadequate coverage of DTP3 suggests limited coverage of other National Immunization Program vaccines

²⁸ Pol3 here signifies the percentage that received 3 doses of some form of the polio vaccine.

YFV	51%
HepB3	41%
TT2	53%

Figure 24, below, suggests that, in 2002 and 2003, the prevalence of full vaccination among children aged 12 to 23 months was greater in the southern than northern regions, though still quite low throughout the country.²⁹

Figure 24: Percent of Children Aged 12 to 23 Months Who Are Fully Vaccinated (adapted from a map created using Measure DHS's "DHS STATMapper")³⁰



Between 1997 and 2003, the measles immunization rate among children ages 12 to 23 months was 35 percent, as compared to a Sub-Saharan average of 61 percent. The DTP3 immunization rate during the same time span was 25 percent, while the Sub-Saharan average was 59 percent. Both rates had more than halved from the 1985-1990 rate (World Bank/DFID 2005). More encouragingly, the IMF (2007) reports that the overall immunization rate increased from 38 percent in 2005 to 77 percent in 2006, though this has yet to translate into reduced infant mortality.

29 "Full vaccination" here refers to the DHS definition of fully vaccinated children presented in the Measure DHS "DHS STATMapper" (i.e., children who have received the vaccines for BCG and measles as well as three doses of DTP and polio, excluding polio 0).

30 "Fully vaccinated" refers to children who have received BCG and measles vaccines as well as three doses of DPT and polio (excluding polio 0). The data for this map comes from Nigeria's 2003 DHS. Note that the DHS geographic divisions do not reflect the country's six regional zones. The Central region herein absorbs Taraba and Adamawa, two North-East region-states. The South-South region is divided between the South-West and South-East (with the South-West absorbing Delta and Edo states, and the South-East absorbing Bayelsa, Rivers, Akwa Ibom, and Cross River states). However, the north and south are accurately divided, with the Central region absorbing only northern states, and those regions below comprised only of southern states. Despite differences in regional divides, this map proves useful for the purpose of comparing vaccination prevalence in Nigeria's north versus south.

The increase in measles immunization levels may be due to heightened measles campaigns in 2005, which lessened annual peak levels of measles outbreaks, especially in the north. UNICEF, the WHO, and the Red Cross provided staff and monetary support for the campaign, which targeted 30 million children in Nigeria's 20 northern states (UNICEF 2005). Other immunization services have recently been incorporated into National Primary Health Care delivery systems. This synchronization is hoped to boost routine immunization and foster sustainability (UNICEF 2008). Nigeria also plans to introduce pneumococcal polysaccharide vaccines into its National Immunization Plan by January 2010 (WHO 2008).

Nigeria still faces sobering challenges in achieving universal vaccine coverage. Although polio vaccine coverage increased in 2006 and 2007 and confirmed polio cases fell by nearly 80 percent to 286 cases between 2006 and 2007, interruption of transmission of wild polio virus (WPV) remains a problem (WHO 2007, UNICEF 2009). Nigeria is one of only four countries in the world where WPV is endemic. Other opportunities for improvement in Nigeria's road to increased vaccination coverage include improving the technical skills of health workers and improved monitoring and evaluation processes for immunization services at all levels (GAVI 2006).

Safe Water Access

Unsafe water sources can contribute to morbidity and mortality, both through diseases that spread through the water system (e.g., cholera, diarrheal disease) and through contamination with hazardous substances such as chemical waste from factories.

Between 1990 and 2007, around half of Nigeria's population had access to safe water (World Bank 2008d). In Lagos, fewer than 5 percent of households have piped water and less than 1 percent of households are linked to closed sewers. Others must rely on potentially contaminated water from wells, boreholes, street vendors or even drains. Efforts by municipal authorities to expand the water supply have often been blocked by private water tanker companies (Gandy 2006).

In 2004, only 31 percent of the population in rural areas had access to improved water sources (compared with 67 percent in urban areas) (World Bank 2008d). Only nine countries have weaker access (UNDP 2008). According to the World Bank, increasing coverage to 80 percent by 2020 would require over \$10 billion of investment, with a similar amount needed for sanitation (DFID 2004).³¹

Climate Change

Climate change is a major threat to the Sahel region, in which Nigeria lies. The Intergovernmental Panel on Climate Change (IPCC) has predicted that the region will be among the world's worst affected by climate change. Patz et al. (2005) estimate that climate change has already increased malaria, diarrhea, and malnutrition mortality and morbidity in West Africa, with 5,000 deaths associated with malaria, 5,000 associated with

³¹ Only 35 percent of the population has access to improved sanitation facilities (World Bank 2008d).

diarrhea, and 8,000 associated with malnutrition attributable to climate change in 2000. For West Africa, Patz et al. calculate a total of 626,000 disability-adjusted life years (DALYs) lost to these diseases as a result of climate change.

Malaria

Malaria is endemic in Nigeria, with the country's cases accounting for a quarter of those in the WHO African Region. *P. falciparum* is thought to be responsible for almost all malaria cases in Nigeria. WHO estimates for 2006 suggest about 57.5 million malaria cases and 225,000 deaths from malaria in Nigeria, with more than 97 percent of mortality occurring among children under age 5 (WHO 2008b).³²

While the malaria burden varies regionally, all but four of Nigeria's states exceed 100 reported cases per 1000 population members. Transmission is more seasonal in the country's north and occurs year-round in the south (WHO 2008b). A study of 650 households in Enugu State found that over 60 percent of Nigerians had suffered an episode of malaria in the preceding month (Onwujekwe, Uzochukwu 2005).

Although the government has recently partnered with major donors such as the Global Fund Against AIDS, Tuberculosis, and Malaria to expand funding for malaria control, the Roll Back Malaria (RBM) program believes that "coverage of the key RBM interventions remains unacceptably low" (WHO 2005). For example, the National Malaria Control Program distributed 17 million insecticide-treated bed nets (ITNs) from 2005 to 2007, but this covered only 23 percent of the at-risk population. In 2007, the program delivered 9 million courses of artemisinin combination therapy – "far below total requirements" (WHO 2008b). Only 6 percent of children under the age of five years sleep under ITNs (World Bank/DFID 2005).

A study of nearly 2000 households in southeastern Nigeria found a high willingness to pay for ITNs – sampling 200 respondents over five communities, over 83 percent of heads of household were (hypothetically) willing to pay. Notably, only 76 percent of those hypothetically willing to pay actually bought nets when offered the opportunity (Onwujekwe et al. 2001).

HIV/AIDS

HIV/AIDS causes much less morbidity than malaria, but only slightly fewer deaths. According to UNAIDS, Nigeria has approximately 2.6 million adults and children living with HIV/AIDS. The adult prevalence rate (15-49 year olds) was estimated at 3.1 percent in 2007, having fallen from 3.2 percent in 2001. This prevalence rate is not alarmingly high by African standards, but only India—with a total population size more than 7 times that of Nigeria—and South Africa have more people infected. UNAIDS estimates that 1.2 million Nigerian children alive in 2007 had lost at least one parent to AIDS, and that 170,000

³² WHO estimates for total malaria cases in individual African countries reflect significant uncertainty. For Nigeria, the estimate's 90 percent confidence interval yields a lower bound of 35 million total malaria cases and an upper bound of 80 million total malaria cases (WHO 2008b).

Nigerians died of AIDS in that year (UNAIDS 2008). Of particular concern is the high rate of AIDS mortality, as well as the growing number of children infected with HIV, 90 percent of whom contracted the disease from their mothers (Udoh et al. 2008).

Infection rates vary by state, with Cross River state having an HIV prevalence of 12 percent in 2003, compared to 1.2 percent in Osun State (Federal Ministry of Health 2004). The national average of infection prevalence in 2005 (3.9 percent of adults ages 15 to 49) was exceeded by three states in the Niger Delta: Akwa Ibom, Cross River, and Rivers. A significant increase in the prevalence of infection can be seen when moving from the country's South West to South-South region (Udoh et al. 2008).

The results from a Delphi survey of 27 experts highlight the oil industry's role as a primary contributor to the disproportionate prevalence of HIV/AIDS in the Niger Delta. Oil pollution has significantly contributed to the region's impoverishment through its effects on agricultural and fishing livelihoods, and the combination of this impoverishment with the presence of wealthy oil-sector affiliates and employees has fueled a growing sex trade in the Niger Delta. The sexual behavior of wealthy oil industry affiliates—"the oil and extractive sectors recently reported that approximately 25% of their workforces worldwide were infected with HIV/AIDS"—as well as that of associated militia and security forces in the region contribute significantly to high HIV infection rates in the Niger Delta. Additionally, the study emphasizes the experts' view that corruption among government officials undermines Nigeria's HIV/AIDS program (Udoh et al. 2008).

Rates of HIV infection vary within states as well, with urban areas (5.7 percent prevalence) slightly higher than rural areas (3.7 percent) (Federal Ministry of Health 2004). On the individual level, young people exhibit a lower rate of infection than adults, although young women have been affected more than young men: 2.3 percent of women ages 15-24 are infected, as compared with 0.8 percent of men in the same age range (UNAIDS 2008). Overall, more than 60 percent of infected adults are female (Udoh et al. 2008).

Prevalence rates also vary by level of education. In 2003, HIV infection rates were 5.6 percent among women with primary education only, 5.4 percent among those with secondary schooling, and 4.0 percent among those with tertiary schooling (Federal Ministry of Health 2004). The apparent relationship between education and infection might help explain a portion of the gender gap in HIV infection rates, as girls are under-represented at all levels of education and increasingly so at higher levels (World Bank 2008d).

A cross-sectional study of 852 secondary school students in Benin City, Nigeria found that 16.2 percent did not know the cause of HIV/AIDS, and only 60 percent mentioned sexual intercourse as the "predominant route of transmission." 32.4 percent of respondents were sexually active, with 37.7 percent of these having multiple partners. Only 62.9 percent of sexually active respondents reported using condoms, while 23.4 percent state that they use no protective measures. This latter group also had the highest number of partners. The predominant source of information on HIV/AIDS reported by respondents, regardless of their age-group, was television, suggesting that this may be a promising medium for health education efforts. However, considering frequent power outages and differential access to

television, as well as the fact that students were more likely to obtain information on HIV/AIDS from friends than parents, incorporating health education into schooling at all levels may be advisable as a means of guaranteeing accurate knowledge about HIV/AIDS and its prevention (Wagbatsoma and Okojie 2006).

Contraceptive prevalence varies by geography and socioeconomic status; wealthy urban women and those with high levels of education are much more likely to use modern contraceptives than their poor, rural, and less educated peers. Regionally, the North East has the lowest modern contraceptive prevalence (at 3 percent), and the South West the highest (23 percent) (UNFPA 2005). Data on risk behaviors suggests low associated use of contraceptives: among people who had had more than one sexual partner in the previous year (concurrent sexual partnering is a key risk factor for HIV infection), just 22 percent of males and 13 percent of females reported having used a condom during their last sexual intercourse (UNAIDS 2008). This association may reflect knowledge-based disadvantages that influence both high-risk behavior and contraceptive use: in a survey by Sedgh et al. (2006) of women who sought an abortion and had not been using contraception at the time, 44 percent said they were unaware of family planning options. Also, while HIV infection rates of 33 percent have been recorded among Nigerian sex workers, prevention campaigns have reached only 34 percent of them (UNGASS 2008).

Contraceptive norms in Nigeria, however, are not immovable. A peer education intervention by the Association for Reproductive and Family Health and the US-based Advocates for Youth was found to increase reproductive health knowledge, use of contraceptives, willingness to buy contraceptives, and self-efficacy in contraceptive use among young people targeted by the program as compared to a control group (Brieger et al. 2001).

In recent years, the Nigerian government has implemented a number of new initiatives aimed at halting the spread of HIV and increasing the availability of treatment. In 2007, state governments committed to spending at least one percent of their annual budgetary provision for the Ministry of Health, Agriculture, Education, Youth and Women Affairs on HIV and AIDS programming (UNGASS 2008). In 2008, Hajiya Turai Umar Yar'Adua, the first lady of Nigeria, launched the National Coalition of Women Against HIV/AIDS (NAWOCA), noting that "the launch of the chapters at zonal levels is meant to speed up coverage of the entire country in order to facilitate a well coordinated effective response against the epidemic" (Ebegbulem and Enogholase 2008).

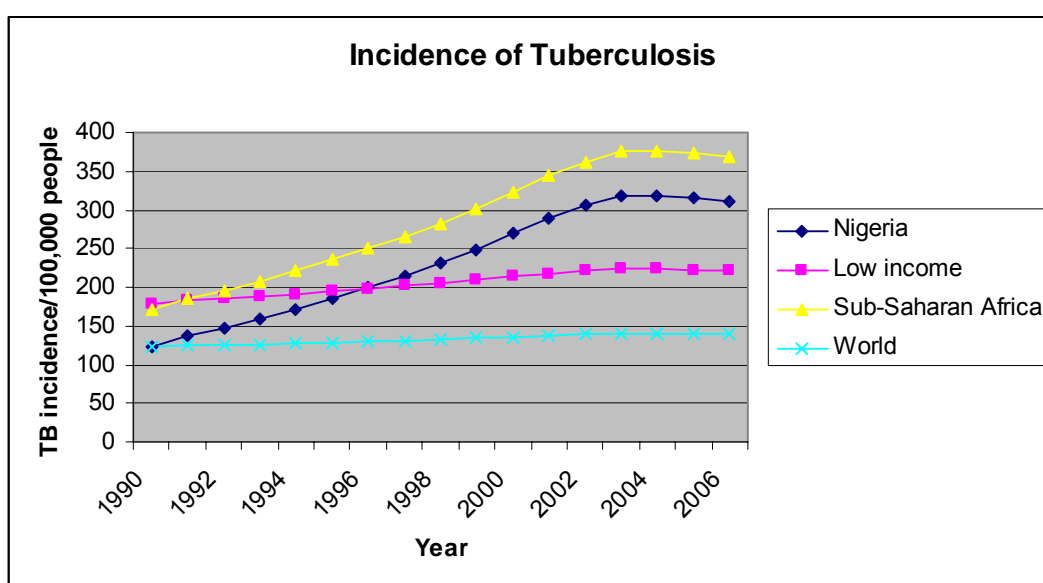
In 2006, the Nigerian government announced that free antiretroviral therapy would be provided to all those in need. Although 198,000 people are currently receiving antiretroviral therapy—that number has soared from just 13,000 in 2004—74 percent of those in need of treatment are not receiving it (UNAIDS 2008). Prevention of mother-to-child transmission of HIV, moreover, which can be done simply and cheaply through the use of antiretroviral drugs, only reached 7 percent of pregnant women living with HIV in 2007 (UNAIDS 2008). Furthermore, the extent to which those receiving treatment are following proper protocol in regards to schedule and dosage is unclear.

While the stigma surrounding HIV/AIDS may have impeded Nigeria's prevention and treatment efforts, interventions can help reduce such stigma.³³ A longitudinal controlled trial of a program in Cross River state to train health workers and shift their perceptions of the disease concluded that the program achieved increases in perceived HIV-related clinical skills and sympathy towards AIDS patients, as well as reduced fear and judgmental attitudes towards those infected (Ezedinachi et al.2002).

Tuberculosis

Nigeria has made great strides in increasing access to directly observed therapy short-course (DOTS) for TB. Coverage was 45 percent in 1999, and had reached 75 percent by 2005. Treatment success for the 2005 cohort was 75 percent (WHO 2008a).

Figure 25: Incidence of Tuberculosis (World Bank 2008d)



TB incidence in Nigeria, while below the level for Sub-Saharan Africa as a whole, remains high at a rate of 311 cases per 100,000 population members in 2006. The trends for both Nigeria and Sub-Saharan Africa, however, show a slight downward turn in TB incidence since 2003. Still, with 250,000 new cases of TB each year and TB mortality at 81 deaths per 100,000, Nigeria's burden from the disease remains high (WHO 2002).

Other Diseases

WHO (2002) puts dysentery prevalence at 919 per 100,000 people, pneumonia at 146 per 100,000, and measles at 89 per 100,000. 40 million Nigerians are at risk of onchocerciasis (river blindness); 20 million have the disease, while 120,000 have been blinded by it.

³³ Adegboye (1994) found that only one-third of physicians and one-quarter of nurses said they would treat an AIDS patient. As recently as 2005, in a survey of 1,021 health professionals, 59 percent agreed that AIDS patients should be in a separate ward; 91 percent felt that staff should be informed when a patient is infected with HIV so they can protect themselves; and 20 percent agreed that those with HIV/AIDS had acted immorally and therefore deserved to be infected (Reis et al.2005).

Schistosomiasis, cholera, cerebrospinal meningitis, yellow fever and Lassa fever are further threats.

Through a village-by-village approach, Nigeria has almost eliminated Guinea worm disease, reducing the number of reported cases from over 650,000 in 1988 to just 73 in 2007, and the number of villages reporting cases from 5879 to 4 over the same period. The country has also eradicated leprosy (WHO 2002).

Non-communicable diseases such as hypertension, coronary heart disease, diabetes and cancer are on the rise. 9 percent of Nigerians smoke (WHO 2002). There is very little knowledge of or attention given to mental illness.

Gender and Health

Gender inequality in Nigeria is among the highest in the world and reflects particular threats to women's health. The UNDP (2008) ranks the country 140th of 156 countries when comparing the Gender Development Index to the Human Development Index. When comparing male and female life expectancy, Nigeria ranks 177th of 194. High maternal mortality plays a key role in this gap, with unsafe abortions, female genital mutilation (FGM), battery, and sexual assault just some of the factors posing a significant threat to women's health.

While maternal mortality is declining, Nigeria's rate remains among the highest in the world (WHO 2002). According to UNFPA (2005), maternal mortality fell from 1,000 deaths per 100,000 live births in 1990 to 800 in 2005, but according to the World Bank (2008d) the rate was 1100 deaths per 100,000 live births in 2007. In northern Nigeria, women have a 1 in 15 lifetime risk of dying due to a pregnancy-related cause (World Bank/DFID 2005).

According to UNFPA (2005), the proportion of women receiving antenatal care and the proportion of deliveries attended by skilled attendants fell between 1990 and 2005. 61 percent of women attend at least one antenatal care session, while just 35 percent of deliveries are attended by skilled practitioners. Only 42 percent of primary healthcare centers even provide antenatal or delivery services. More than 57 percent of those that do provide such services function without a midwife, with just over 18 percent lacking both midwives and senior community health extension workers (WHO 2002).

Wealth, education, and location are key determinants of the care received by women during labor. When comparing the proportion of births attended by skilled attendants, stark differences exist between the experiences of the richest and poorest quintiles (70 and 12.2 percent), those with the highest and lowest levels of education (88.9 and 12.7 percent), and urban and rural women (58.5 percent and 25.7 percent, respectively). In the North West, moreover, just 12.3 percent of births are attended by skilled personnel, compared with 87.5 percent in the South East.

A survey in two hospitals in southwest Nigeria of relatives of 24 women of low-income who died during pregnancy found that many of these women did not make it to medical facilities in time to receive treatment (Orji et al.2002). "Reasons given for late presentation include:

inability to obtain transportation in time (41.7%), inability of the health-care staff to detect an obstetric emergency early enough and refer to an appropriate centre (33.3%), inability of the referring hospital to perform an emergency caesarean section (33.3%), fear of caesarean section (25%), unwillingness of drivers to travel by night (25%) and no money to pay for hospital costs (16.7%). Causes of death include eclampsia, ruptured uterus, severe postpartum haemorrhage, severe antepartum haemorrhage, sickle cell anaemia with crises and road traffic accidents” (Orji et al.2002).

Poorly performed abortions are thought to significantly influence Nigeria’s maternal mortality rate, which a 2005 estimate places at 800 per 100,000 live births. A 2001 estimate attributes two fifths of Nigeria’s maternal deaths to induced abortions (Murray et al. 2006).

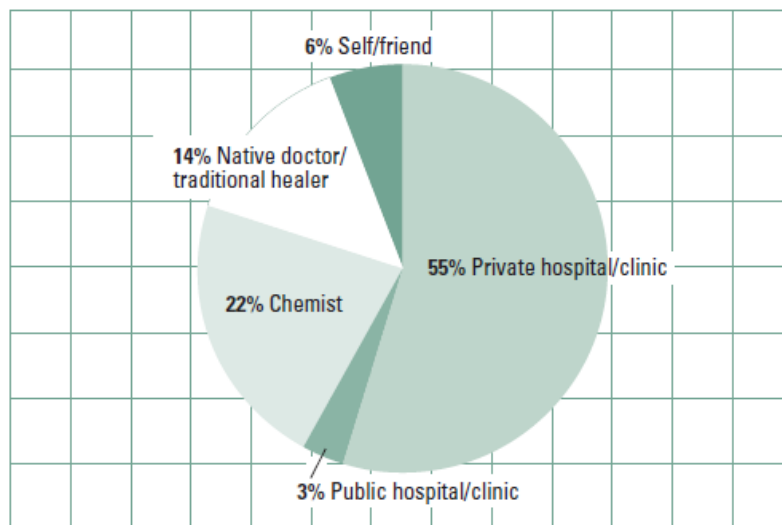
Nigeria has two different sets of abortion laws, one applying to northern states and the other to southern states. While the northern law allows abortions only as a means to save a woman’s life, the southern law allows them for the purpose of saving a woman’s life and on the basis of physical or mental health justifications (Hessini et al., 2006). Assessing prevalence among 602 women age 15 to 24 in Nigeria’s Edo state in 2002, Murray et al. (2006) find that “41 percent of all reported pregnancies in this group were terminated” and estimate an age-specific abortion rate of 49 per 1,000 women age 15-19. According to Bankole et al. (2006), “Among Nigerian women of reproductive age, one in seven (14%) have tried to have an abortion, and one in 10 (10%) have actually ended an unwanted pregnancy.” They estimate that 760,000 induced abortions occur each year in Nigeria.

Nigeria’s abortion rate is much higher in the south than the north, in towns and cities than in villages, among educated than among uneducated women, and among wealthy than among poor women (Sedgh et al.2006). An estimated 40 percent of pregnant teenagers have abortions (Roberts 2003). Among the more than 400 women who reported having had abortions in the survey by Sedgh et al., the most commonly cited reasons for abortion were being unmarried (25 percent), the desire to stop or space births (19 percent), being too young or still in school (18 percent), and the partner not wanting a child or having left the woman (16 percent).

Henshaw et al. (1998) estimate that 40 percent of abortion procedures in Nigeria are carried out by physicians in established health facilities. Almost 60 percent of abortions in Nigeria are performed by medical professionals (Bankole et al. 2006).

Figure 26: Sources of Abortions in Nigeria (Bankole et al. 2006)

The majority of abortions are performed in private hospitals or clinics.



However, approximately one-quarter of abortions result in serious complications (Bankole et al. 2006). The proportion resulting in serious complications, while relatively similar across those living in urban versus rural areas (22 and 26 percent, respectively), varies noticeably by region and wealth (31 percent of women in the North as compared to 20 percent in the South, and 30 percent of poor women as compared to 21 percent of those who are not poor). These factors are most likely related to variation in the proportion of abortions carried out by medical professionals across these groups.³⁴ Notably, only about a third of women who experience serious complications seek treatment (Bankole et al. 2006).

The prevalence of unwanted pregnancies in Nigeria significantly contributes to the impact of unsafe abortions. In a survey of 2,978 women in eight Nigerian states, Sedgh et al. (2006) found that 28 percent reported having ever had an unwanted pregnancy, with half of those saying they had attempted to end their last unwanted pregnancy. Those in rural areas and the north, as well as Catholics and younger women, were significantly more likely to have had unwanted pregnancies.³⁵ Oye-Adeniran et al. (2004) found a similar prevalence of unwanted pregnancies (26.6 percent) among a sample of 3,743 women surveyed from urban and rural communities in Lagos and Edo states. Abortion prevalence in their sample was 21.7 percent.

Despite this, contraceptive use is low. Sedgh et al. (2006) found that only 13 percent of married women used a condom or traditional method, and estimate that 40 percent of their sample had an unmet need for family planning. Oye-Adeniran et al. (2004), however, note that 91.3 percent of their respondents knew of at least one form of contraception, but only 36.6 percent had ever used one, while even fewer, 23.4 percent, reported that they were

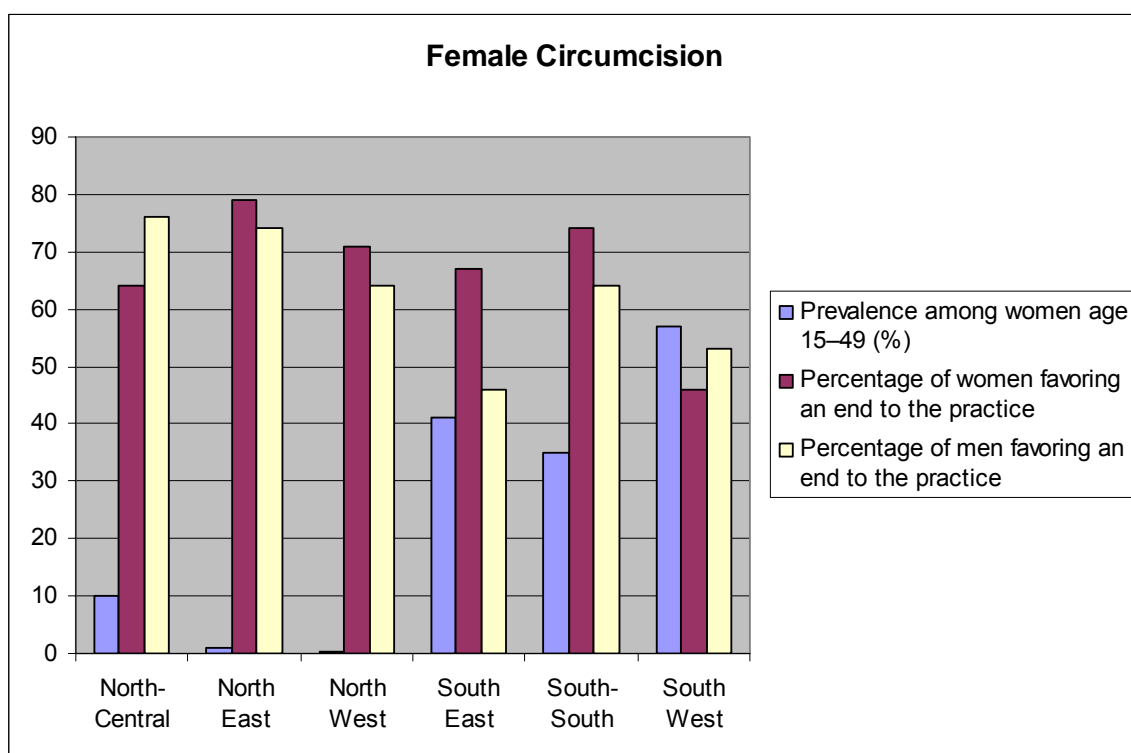
³⁴ For example, 29 percent of abortions performed in Nigeria's North (and compared with 12 percent in the South) are carried out by a traditional healer, a friend, or the woman herself (Bankole et al. 2006).

³⁵ Note that reporting rates for sensitive subjects such as abortion or contraception are generally viewed as understatements of true prevalence.

currently using one. Murray et al. (2006) cite a contraceptive prevalence of 23 percent among unmarried women age 15 to 19, and 40 percent among those ages 20 to 24.³⁶ Thus, increasing contraceptive prevalence through reproductive health education and interventions geared towards access to contraception, especially among younger women, could greatly impact the burden of unsafe abortion by reducing the number of unwanted pregnancies.

An additional procedure often linked to maternal mortality in Nigeria is female genital mutilation (FGM), also referred to as female circumcision. Jones, Ehiri, and Anyanwu (2004) estimate the prevalence of FGM in Nigeria as 50 percent, and the number of women who have undergone it at over 28 million. Note that, as this estimation was published in 2004 and the prevalence of FGM in Nigeria is thought to be more common among older generations, the number of Nigerian women currently living who have undergone FGM may be either greater or less than 28 million depending on demographic changes and the current pervasiveness of the practice (Snow et al. 2002). Prevalence varies with ethnicity and religion as well as geographic location and level of education. It is much more common in the southern regions, where the tradition seems strongest and the percentage of men who favor an end to the practice is generally lower (See Figure 27).

Figure 27: Female Circumcision (Measure DHS 2004)



In a sample of 325 mothers, Igwegbe and Egbunu (2000) found that reductions in prevalence of respondent-FGM were associated with increasing levels of education. A random sample of 308 Igbo women age 15 to 49 in two areas of Nigeria's Imo state found

³⁶ According to Murray et al. (2006), almost 40 percent of births in Nigeria occur among women age 15 to 24, with 20 percent of the country's population in this age range around the time of Murray et al.'s study.

that 52.7 percent of respondents circumcised their female children, citing tradition, prevention of promiscuity, and the belief that FGM is good for health and enables safe delivery as reasons for the practice's continuation. 94 percent of rural respondents and 51 percent of urban respondents were circumcised (Okemgbo, Omideyi and Odimegwu 2002.)

In a survey of 28,393 women from across six African countries (Burkina Faso, Ghana, Kenya, Nigeria, Senegal, and Sudan), the WHO study group on FGM and obstetric outcomes (2006) estimated that FGM leads to 1-2 perinatal deaths per 100 deliveries, with risks appearing greater for more extensive FGM. Dare et al.'s (2004) analysis of 522 cases of FGM in Nigeria's South West found that 89 percent of procedures had been performed by "medically untrained personnel." The most common physical complications resulting from the procedure—up to 67 percent of respondents reported complications—were severe pain and heavy bleeding. Aside from failing to address the extent of emotional and psychological trauma, this study is likely to understate complications as the women interviewed were recruited from among pregnant women at three specific hospitals, indicating that they survived the procedure (and childhood), were fertile, and had access to medical care.³⁷

Considering the physical complications associated with FGM in detail, Toubia's 1994 New England Journal of Medicine article, "Female Circumcision as a Public Health Issue" concludes that "female circumcision is a major contributor to childhood and maternal mortality and morbidity in communities with poor health services." The extent of its contribution in Nigeria merits further study.

Along with FGM, Okemgbo, Omideyi and Odimegwu (2002) considered the prevalence of physical and sexual assault among their respondents. They found that 78.8 percent of respondents had been battered by their husband, while other relatives or male friends had "hit, slapped, kicked," or tried to physically hurt 17.8 percent of the respondents. Battery was more prevalent in urban areas, both when perpetrated by the respondent's husband (84.6 percent versus 73.5 percent in rural areas) and when carried out by other relatives or male friends (23.1 percent in urban areas versus 12.9 percent in rural areas). "The level of education of respondents did not have any significant effect on the type of violence they suffer" (Okemgbo, Omideyi and Odimegwu 2002).

A survey of 300 women in a primary healthcare center in eastern Nigeria found that over 40 percent had experienced violence at the hands of intimate partners in the previous 12 months. Perceived causes of the violence included alcohol and drugs (61 percent), economic problems (56 percent) and reproductive issues (43 percent). Reporting of such violence was rare, with only 1 percent of respondents reporting incidents to the police. Forty-eight percent of respondents had spoken of it with a family member (Ilika et al.2002).

³⁷ One would not expect those with more severe complications such as hemorrhage, tetanus or other serious infections, or severe anemia to be as likely to reach childbearing years. Also, those with infertility as a result of FGM would not have been sampled in this study.

Regarding sexual violence in particular, 21.3 percent of respondents to Okemgbo, Omideyi and Odimegwu's study reported having been raped, with 54.5 percent of these women indicating that they had been virgins at the time. The implication that rape was the first sexual encounter of more than half of the women studied calls for further research into the prevalence and burden of sexual violence in Igbo communities specifically, and in Nigeria as a whole (Okemgbo, Omideyi and Odimegwu 2002).

Trafficking also poses a significant problem. This particularly effects children (often girls between the ages of 8 and 12), who are generally forced to provide domestic, agricultural, or industrial labor in Gabon or the Cote d'Ivoire. Young women from Edo state are often forced into prostitution in Europe (Dottridge 2002). Dottridge (2002) emphasizes the role of regional gender norms, particularly systems of inheritance and customs surrounding education and marriage that marginalize females, in contributing to families' willingness to "place" their daughters as domestic servants. Sexual violence and exploitation is closely intertwined with trafficking, due both to abuses committed by adults with whom children are placed and traffickers' tendency to specifically seek out abused or orphaned children (Adepoju 2005).³⁸

Education

Residual effects of the slave trade are believed to have facilitated the introduction and relatively early acceptance of Westernized education in the South via the influence of Christianity and missionaries.³⁹ Alongside these, differences in the British colonial administration of Nigeria's North and South laid the foundations for regional disparities in exposure to and acceptance of Western education. The South has maintained its lead in Westernized education, while Islamic education has flourished in the North (Aluede 2006; Mustapha 2006).

Although there were 3 colonial-government-subsidized Islamic schools which also taught Western education in Lagos before 1931, a ban on missionary activities in the North, which included establishing schools, focused pre-independence schooling in the southern regions (Mustapha 2006).⁴⁰ In 1960, students at the University of Ibadan were split 47.3 percent, 39.8 percent, and 8.4 percent from the western, eastern, and northern regions, respectively (Asadurian et al. 2006; Mustapha 2006). By that same year, both western and eastern regions implemented Universal Primary Education (UPE) programs resulting in a boost in formal school enrollment, yet no such increases were noted in the north. From 1979 -1984, the ruling political party in the West and Mid-West guaranteed free primary, secondary, and university education for all native Nigerians.

³⁸ The trafficking of AIDS orphans presents a particular problem in Africa, both as a human rights violation and in terms of the spread of HIV/AIDS.

³⁹ It is believed that former slaves returned to their original homeland in Southern Nigeria from a British colony in Sierra Leone that served as a haven for former slaves. Having been exposed to Christianity and Western education, these immigrants not only helped introduce Western education, but also invited Christian missionaries to help "civilize" the indigenous population(s) (Aluede 2006).

⁴⁰ The missionary run schools were producing a Nigerian elite that disdained the colonial authorities. One of the reasons for this ban was to prevent the rise of a similar class of Nigerians in the North (Mustapha 2006).

While primary enrollment was almost universal in some Nigerian states in the 1980s, the situation has worsened in the past three decades (DFID 2004). Net primary enrollment, for which Nigeria ranks 125th of 130 countries, was just 63 percent in 2005, with slightly more than 8 million primary school aged children not enrolled in school (World Economic Forum 2008; World Bank 2008d).

Under the National Economic Empowerment and Development Strategy (NEEDS) program, launched in 2004, primary education facilities have been expanded somewhat; free and compulsory basic education for the first nine years has been introduced; and a national enrollment drive was launched (IMF 2007). Reductions in adult illiteracy among both men and women between 1990 and 2005—adult male illiteracy rate fell from 41 to 22 percent, and adult female from 62 to 36 percent—have been seen alongside drops in young adult (age 15 to 24) illiteracy over the same period (from 19 to 8 percent among males, and 34 to 10 percent among females) (UNFPA 2005). Yet, despite this, ranked in terms of adult literacy and based on 2005 data, Nigeria sits as 104th out of the 139 countries measured in the UN Human Development Index. In terms of gender differences in adult literacy and based on 2004 data, it ranks just 121st out of 152 countries (UNDP 2008).

Post-primary enrollment presents a sobering picture. By 1989, the breakdown of post-primary institutions in Nigeria resulted in the north having 52.8 percent of the population and only 33.1 percent of post-primary institutions. Of post-secondary applicants admitted in 2000-2001, 80 percent were from the South (Mustapha 2006).⁴¹ Regional inequity aside, the country's net secondary enrollment in 2004 was 27 percent (UNESCO 2006), while gross tertiary enrollment for 2004 was just 10 percent, amounting to slightly less than 1.3 million tertiary students in that year (UNESCO 2006). Nigeria ranks 138th of 172 on combined primary, secondary and tertiary enrollment in the UN Human Development Index, and last of 127 countries with available data in the World Economic Forum's ranking of education expenditure as a percentage of per capita gross national income, at just 0.9 percent (UNDP 2008; World Economic Forum 2008).

Access to education varies by a number of factors beyond the North-South distinctions mentioned above, including wealth, gender, and location. Children from wealthy families have much greater prospects of being educated than those from poor households. While over 80 percent of 6-10 year olds from the wealthiest quintile of families attend school, the proportion of those from among the poorest quintile is below 40 percent (UNFPA 2005).

Inadequate financial resources and support have contributed to the poor performance of the Nigerian educational system in terms of the quality and relevance of education provided (Ndiyo 2007). Furthermore, many families have difficulties paying "required fees" for the supposedly free, though under-funded, public schools. Combined with the inadequate

⁴¹ In an attempt to correct some of the disparities, a number of federally sanctioned quota programs have been implemented to make it easier for a Northern applicant to gain admission into Federal colleges and universities. It has been argued that, in order to meet the requirements of some quota programs, institutions receiving federal funding have had to lower their admission standards for "candidates from less developed localities, communities and states." Notably, some states and private groups in the South have circumvented these requirements by creating universities outside the federal system (Mustapha 2006).

supply of jobs post-education and high levels of poverty, challenging socioeconomic circumstances have pushed many families to withdraw their children from school, give them away in marriage, direct them to learn trades, or, in extreme cases, send them away to beg. Consequently, enrollment numbers can be deceptive since not all enrollees are ultimately able to attend school (Canagarajah and Thomas 2001; Ali-Akpajiak and Pyke 2003).

Girls' education lags behind that of boys, with their under-representation increasing in successive tiers of education: the 2005 ratio of girls to boys in primary, secondary and tertiary education is 83:100, 82:100, and 69:100 respectively (World Bank 2008d). While boys spend an average of nine years at school, girls spend just seven years (CIA 2008). In some states, girls' enrollment in primary school is less than 40 percent that of boys (DFID 2004). In the North-West Region, girls' primary enrollment is just 34 percent (World Bank/DFID 2005). The system of *Purdah* as practiced in areas of northern Nigeria—therein, the practice is commonly interpreted as requiring complete or partial seclusion of females from males, though a third, more symbolic “seclusion of the heart” has also been described—contributes to regional differences in gender-based disparities in education (Thomas-Emeagwali 1994; Aluede 2006).

Completion rates are also lower for girls than boys. In 2002, the proportion of boys failing to complete primary schooling in urban areas was half that of girls, and in rural areas over 50 percent lower. The gap was narrower for secondary schooling (Swainson 2003). Regional factors, such as those sculpted by the differences in school type and availability in the North versus the South, are also relevant.⁴²

Girls' education has numerous benefits for development, including reduced fertility. As the study of the effect of increased primary education in Nigeria by Okonkwo Osili and Long (2008) shows, on a per-woman basis, each additional year of female schooling completed is associated with reductions in early fertility of 0.26 births. A further study by Caldwell (1979) of 6,606 women in Ibadan in 1973 found that mortality among under-5 children of mothers with some primary schooling was 68 percent of mortality among children whose mothers had received no education. For those whose mothers had more than primary schooling, mortality was 44 percent of that of children of uneducated mothers. Caldwell also found that urban-rural differences in child mortality are often small once mothers' education is controlled for. Ngowu et al.'s (2008) finding that higher maternal literacy is associated with lower child mortality adds further weight to the importance of girls' schooling for development. Given this importance, Nigeria's gender gap in education is particularly worrisome.

The IMF (2007) describes Nigeria's education system as “dysfunctional,” citing the decay of institutions and youth militancy as key problems. Just 28 percent of primary pupils stay in school until the final grade (UNESCO 2006). In secondary school, the pupil/teacher ratio is 43. According to the World Bank/DFID (2005), illiteracy is high even within schools: among

⁴² See the Regional Profiles section for further information on differences and similarities in education across Nigeria's six regions.

primary schoolchildren, only 45 percent in urban and 19 percent in rural areas can read a simple sentence.

In the World Economic Forum's annual Global Competitiveness Report (2008), Nigeria records a score of 3.7 out of 7 (with 7 being the best possible score) among business leaders asked whether the educational system "meets the needs of a competitive economy," earning it a rank of 60 out of 134 countries. Its score of 3.9 on the quality of math and science education placed it in the bottom half of countries ranked on this characteristic, while its 4.2 ranking on the perceived quality of its management or business schools placed it at number 59 of 134.

Additionally, it seems that the best graduates of the education system do not always benefit Nigeria: the 2008 World Economic Forum survey of business leaders reflected a perception that the country's talented young people "normally leave to pursue opportunities in other countries." Out of 134 countries, only 21 were more concerned about this brain drain.

Conclusion

This review takes an in-depth look at the obstacles ahead for Nigeria, focusing on the challenges and complexities of the current situation as well as demographic projections concerning its future. In large part due to a soaring working-age population and plummeting dependency ratios, the coming years present a turning point for Nigeria to either make great strides towards development, or remain static, risking greater consequences in the long run. Forward movement in the areas of health and education would be expected to yield significant gains, especially in implementing policies that improve childhood immunization coverage and women's health. Other critical areas include school quality and accessibility across Nigeria's six geopolitical zones. While Nigeria faces daunting obstacles such as malaria, HIV/AIDS, social and ethnic tensions, low income, and governance crises, this review may serve as a rough and preliminary guide for focusing analyses and policy recommendations on the most pressing issues expected to shape the country in both the short- and long-term.

References

- O Adegbola (2008). Population policy implementation in Nigeria, 1988-2003. *Population Review*, 47(1): 56-110.
- AA Adegboye (1994): Health workers' attitudes to a hospitalized AIDS patient in Ile-Ife, Nigeria: urgent need for intervention. *Tropical Doctor* 1994: 24-34.
- J Adejuwon (2008). Vulnerability in Nigeria: A national-level assessment. In N Leary, C Conde, A Nyong, and J Pulhin (Eds.), *Climate Change and Vulnerability* (198-217). London: Earthscan.
- AO Adejobi, VO Okoruwa, JK Olayemi, T Alimi, and PM Kormawa (2008). Rural poverty and farming households' livelihood strategies in the drier savanna zone of Nigeria. *European Journal of Social Sciences*, 5(4): 99–110.
- IA Ademiyuli and MO Solanke (2008): Perceptual notion and realities of Nigerian urban centres. *Pakistan Journal of Social Sciences* 5(2): 177-181.
- A Adepoju (2005). Review of Research and Data on Human Trafficking in sub-Saharan Africa, *International Migration*, 43(1-2): 75 – 98.
- D Adeyemo, A Salami, and L Olu-Adeyemi (June 2008). An appraisal of economic reforms in Nigeria. *Contemporary Management Research*, 4(2): 119-136.
- AFP (15 Nov. 2008). Nigeria's military: officers but not gentlemen. Retrieved 5 April 2009 from: < http://www.google.com/hostednews/afp/article/ALeqM5hTh_YpLHbuM0JPAMtIMSAPihgrYA >.
- Africa Investment Publishing (2009). *TradeInvest Nigeria: States in Nigeria*. Retrieved 1 April 2009 from: <<http://www.tradeinvestnigeria.com/states/>>.
- W Akpan (2006): Between responsibility and rhetoric: some consequences of CSR practice in Nigeria's oil province. *Development Southern Africa*, Vol 23, No 2.
- NE Akpotu (2008): Education as correlate of fertility rate among families in southern Nigeria. *Journal of Human Ecology*, 23(1): 65-70.
- SCA Ali-Akpajiak and T. Pyke (2003). *Measuring poverty in Nigeria*. Oxfam Working Paper Series. Oxford: Oxfam GB.
- O Alubo (2004). Citizenship and nation making in Nigeria: New challenges and contestations. *Identity, Culture and Politics*, 5(1): 135-161.
- ROA Aluede (2006). Regional demands and contemporary educational disparities in Nigeria. *Journal of Social Sciences*, 13(3): 183-189.
- A Araar and AT Timothy (2006). *Poverty and Inequality Nexus: Illustrations with Nigerian Data*. CIRPÉE Working Paper No. 06-38.

- T Asadurian, E. Nnadozie, and L Wantchekon (2006). Transfer dependence and regional disparities in Nigerian federalism. In J Wallack and TN Srinivasan (Eds.), *Federalism and Economic Reform: International Perspectives*, (407-455). Cambridge: Cambridge University Press.
- A Bankole, BA Oye-Adeniran, S Singh, IF Adewole, D Wulf, G Sedgh, and R Hussain (2006). *Unwanted pregnancy and induced abortion in Nigeria: Causes and consequences*. Guttmacher Institute, New York.
- AO Bayo (2006): City planning, city growth and food security: the inevitable trinity in the Nigerian food equation. *Agricultural Journal*, 1(3): 113-118.
- BBC News (14 September 2008). Nigeria militants warn of oil war Retrieved 3 April 2008 from: <<http://news.bbc.co.uk/2/hi/africa/7615498.stm>>.
- K Boudreaux (2008): *Urbanisation and informality in Africa's housing markets*. Institute of Economic Affairs, London. June.
- W Brieger et al.(2001): West African Youth Initiative: Outcome of a Reproductive Health Education Program. *Journal of Adolescent Health*, 29: 436-446.
- R Briggs (2002). Hostages, Inc. *Foreign Policy*, 131: 28-29.
- JC Caldwell (1979): Education as a factor in mortality decline: An examination of Nigerian data. *Population Studies*, Vol 33, No 3: 395-413.
- S Canagarajah and S Thomas (2001). Poverty in a wealthy economy: The case of Nigeria. *Journal of African Economies*, 10(2): 143-173.
- CASSAD (1998): *Institutional policy and legal framework for waste management in Ibadan, Nigeria. The report of a national study commissioned by the National Planning Commission, Abuja.*
- M Chauvé (2008). La lutte contre la contrefaçon de médicaments en Afrique : expériences et rôle des pharmaciens. *Comptes Rendus Biologies*, 331: 982-985.
- CIA (2008): *CIA World Factbook: Nigeria*. Available at www.cia.gov/library/publications/the-world-factbook/print/ni.html. Last accessed 5 November 2008.
- CIA (2009a). *The World Factbook: Nigeria*. Retrieved 5 April 2009 from: <<https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html#Govt>>.
- CIA (2009b). *The World Factbook: Nigeria*. Retrieved 21 May 2009 from: <<https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html>>.
- P Collier and A Hoeffler (1998): On economic causes of civil war. *Oxford Economic Papers*, 50: 563-573.

Commission for Africa (2005): Our Common Interest: Report of the Commission for Africa. March.

W Connors (13 Dec. 2008). Legal victory can't erase Nigerian leader's troubles. New York Times. Retrieved 6 April 2009 from: <<http://www.nytimes.com/2008/12/14/world/africa/14nigeria.html>>.

Department for International Development (2003): Drivers of Change in Nigeria: A Preliminary Overview. DFID, London.

Department for International Development (2004): Country Assistance Plan for Nigeria, 2004-2008. DFID, London.

Department for International Development (2005): Climate Proofing Africa. DFID, London.

M Dottridge (Mar. 2002). Trafficking in Children in West and Central Africa. Gender and Development, 10(1): 38- 42.

S Ebegbulem and G Enogholase (July 31 2008). Turai Yar'Adua launches National Women Coalition on HIV/AIDS. Vanguard. Retrieved March 25 2009, from: <<http://www.vanguardngr.com/content/view/13405/44/>>.

Education Policy and Data Center. "Thematic Profiles: Nigeria Regional Profiles." Retrieved 22 April 2009 from: <<http://epdc.org/ThematicProfiles.aspx>>.

EN Ezedinachi, MW Ross, M Meremiku, EJ Essien, CB Edem, E Ekure, and O Ita (2002). The impact of an intervention to change health workers' HIV/AIDS attitudes and knowledge in Nigeria: a controlled trial. Public Health, 116: 106-112.

MJ Fasona and AS Omojola (2005). Climate change, human security and communal clashes in Nigeria. A paper prepared for Human Security and Climate Change: An International Workshop, Asker, Oslo 21-23 June 2005. Retrieved 14 May 2009 from: <http://www.gechs.org/downloads/holmen/Fasona_Omojola.pdf>.

Federal Ministry of Health (2004): 2003 National HIV Sero-prevalence Sentinel Survey. April.

BJ Feyisetan, A Bankole (2002): Fertility transition in Nigeria: Trends and prospect. Paper prepared for Expert Group Meeting on Completing the Fertility Transition, New York, 11-14 March 2002. Meeting organized by the United Nations Population Division.

M Gandy (2006): The infrastructure crisis in Lagos. Urban Studies, Vol 43, No 2: 371-396.

P Garner, M Meremikwu, J Volmink, Q Xu, H Smith (2004): Putting evidence into practice: how middle and low income countries "get it together". BMJ, 329: 1036-1039.

GAVI (2006). Data Quality Audit, Nigeria, Final Report. Retrieved 12 May 2009 from: <http://www.gavialliance.org/resources/DQA_Nigeria_2006_en.pdf>.

GAVI (2008). Country fact sheet: Nigeria. Retrieved 20 May 2009 from <http://www.gavialliance.org/resources/Nigeria_GAVI_Alliance_country_fact_sheet_June_2008_ENG.pdf>.

R Guest (2004): *The Shackled Continent*. Pan Books: London.

A Hagopian, MJ Thompson, M Fordyce, KE Johnson, LG Hart (2004): The migration of physicians from sub-Saharan Africa to the United States of America: measures of the African brain drain. *Human Resources for Health*, 2: 17.

SK Henshaw, S Singh, BA Oye-Adeniran, IF Adewole, N Iwere and YP Cuca (1998): The incidence of induced abortion in Nigeria. *International Family Planning Perspectives*, 24(4): 156-164.

L Hessini, E Brookman-Amisshah and BB Crane (Dec. 2006). Global policy chance and women's access to safe abortion: The impact of the World Health Organization's guidance in Africa. *African Journal of Reproductive Health*, 10(3): 14-27.

AO Igwegbe and I Egbuonu (2000). The prevalence and practice of female genital mutilation in Nnewi, Nigeria: the impact of female education. *Journal of Obstetrics and Gynaecology*, 20(5): 520-522.

HE Ichoku and M Leibbrandt (2003): Demand for healthcare services in Nigeria: a multivariate nested logit model. African Development Bank.

NI Ikpeze, CC Soludo and NN Elekwa (2004). Nigeria: The political economy of the policy process, policy choice and implementation. *The Politics of Trade and Industrial Policy in Africa: Forced Consensus?* Ed. C. Soludo, O. Osita and C. Ha-Joon. Africa World Press, Inc.

AL Ilika, PI Okonkwo, P Adogu (2002): Intimate partner violence among women of childbearing age in a primary health care centre in Nigeria. *African Journal of Reproductive Health*, Vol 6, No 3: 53-58.

R Ingwe, EJ Aniah, and J Otu (March 2008). Lagos, Nigeria: Sustainable energy technologies for an emerging African megacity. In P Droege (Ed.), *Urban Energy Transition: From Fossil Fuels to Renewable Power*, (631-645). Amsterdam: Elsevier.

International Monetary Fund (2007): Nigeria: Poverty Reduction Strategy Paper – Progress Report. IMF Country Report, August.

A Joel (2008). Poverty and sustainable development in the Niger Delta region of Nigeria. *Journal of Sustainable Development in Africa*, 10(3): 155-171.

IA John, AZ Mohammed, AD Pinto, and CA Nkanta (2007). Gun Violence in Nigeria: A Focus on Ethno-Religious Conflict in Kano. *Journal of Public Health Policy*, 28: 420–431.

SD Jones, J Ehiri, and E Anyanwu (October 2004). Female genital mutilation in developing countries: an agenda for public health response. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 116(2):144-151.

B Junge, R Abaidoo, D Chikoye, and K Stahr (2008). Soil conservation in Nigeria: Past and present on-station and on-farm initiatives. Soil and Water Conservation Society. Ankeny, Iowa. Retrieved 21 April 2009 from: <<http://www.swcs.org/documents/filelibrary/SoilConservationInNigeria.pdf>>.

NB Kandala, CJ Ji, N Stallard, S Stranges, and FP Cappuccio (2007). Spatial analysis of risk factors for childhood morbidity in Nigeria. *The American Journal of Tropical Medicine and Hygiene*, 77(4): 770-779.

O Klineberg, M Zaralloni (1963): Nationalism and tribalism among African students: a study of social identity. The Hague. Mouton.

A Labiran, M Mafe, B Onajole, ad E Lambo (Oct. 2008). Health workforce country profile for Nigeria: First edition, African Health Workforce Observatory. Retrieved 12 May 2009 from: <http://www.afro.who.int/hrh-observatory/country_information/fact_sheets/Nigeria.pdf>.

RA Maconachie and T Binns (2006): Sustainability under threat? The dynamics of environmental change and food production in peri-urban Kano, northern Nigeria. *Land Degradation and Development*. 17:159-171.

DJ Mancini, G Stecklov, JF Stewart (2003): The effect of structural characteristics on family planning program performance in Cote d'Ivoire and Nigeria. *Social Science & Medicine* 56: 2123-2137.

O Marenin (1990). Implementing Deployment Policies in the National Youth Service Corps of Nigeria: Goals and Constraints. *Comparative Political Studies*, 22(4): 397-436.

BU Mberu. (2007). Household structure and living conditions in Nigeria. *Journal of Marriage and Family*, 69(2): 513-527.

BU Mberu (2005): Who moves and who stays? Rural out-migration in Nigeria. *Journal of Population Research*, 22(2): 141-161.

CP McPherson (2003) Petroleum Revenue Management in Developing Countries, accessed via <http://www2.ifc.org/ogmc/files/ParofPlentyCH2.pdf>. Last accessed 5 November 2008.

Measure DHS (May 2004). 2003 Nigeria Demographic and Health Survey (2003 NDHS) Fact Sheet. Retrieved 22 April 2009 from: <http://www.measuredhs.com/pubs/pub_details.cfm?ID=648&srchTp=advanced>.

Measure DHS (n.d.). DHS HIVMapper. Demographic and Health Surveys. Retrieved 28 April 2009 from: <<http://macroint.mapsherpa.com/hivmapper/index.phtml>>.

Measure DHS (n.d.). DHS STATMapper. Demographic and Health Surveys. Retrieved 27 April 2009 from: <<http://macroint.mapsherpa.com/statmapper/>>.

N Murray, W Winfrey, M Chatterji, S Moreland, L Dougherty and F Okonofua (Dec. 2006). Factors related to induced abortion among young women in Edo State, Nigeria. *Studies in Family Planning*, 37(4): 251-268.

S Murray (19 April 2007). The candidates to be Nigeria's leader. BBC News. Retrieved 6 April 2009 from: <<http://news.bbc.co.uk/2/hi/africa/6205876.stm>>.

AR Mustapha (2006). Ethnic structure, inequality and governance of the public sector in Nigeria. United Nations Research Institute for Social Development. Geneva.

National Bureau of Statistics (2006). Annual Abstract of Statistics 2006. Retrieved 27 April 2009 from: <http://nigerianstat.gov.ng/annual_report.htm>.

National Population Commission Federal Republic of Nigeria (2004). Nigeria Demographic and Health Survey 2003. ORC Macro. Retrieved 1 April 2009 from: <<http://www.measuredhs.com/pubs/pdf/FR148/FR148.pdf>>.

National Population Commission [Nigeria] and ORC Macro (2004). Nigeria demographic and health survey 2003: Key findings. Calverton, Maryland, USA: National Population Commission and ORC Macro. Retrieved 21 April 2009 from: <<http://www.measuredhs.com/pubs/pdf/SR101/SR101NG03.pdf>>.

NA Ndiyo (2007). A dynamic analysis of education and economic growth in Nigeria. *Journal of Developing Areas*, 41(1): 1.

R Ngowu, JS Larson, MS Kim (2008): Reducing child mortality in Nigeria: a case study of immunization and systemic factors. *Social Science & Medicine*, 67: 161-164.

Nigerian Institute of Social and Economic Research (1997): Nigeria Migration and Urbanization Survey 1993. Ibadan.

O Obono (2003): Cultural diversity and population policy in Nigeria. *Population and Development Review*, 29(1): 103-111. March.

TO Odekunle, EE Balogun, and OO Ogunkoya. (2005). On the prediction of rainfall onset and retreat dates in Nigeria. *Theoretical and Applied Climatology*, 81(1): 101-112.

C Ogbu (Aug. 18 2008). Remittances from Nigerians abroad hit \$17.9 billion. Nigerian Muse. Retrieved 26 May 2009 from: <http://www.nigerianmuse.com/20080818021710zg/nigeriawatch/Diaspora_Nigeria/remittances-from-nigerians-abroad-hit-17-9-billion>.

JE Okeagu, JC Okeagu, AO Adegoke and CN Onuoha (2006). The environmental and social impact of petroleum and natural gas exploitation in Nigeria. *Journal of Third World Studies*, 23(1): 199-218.

CN Okemgbo, AK Omideyi and CO Odimegwu (Aug. 2002). Prevalence, Patterns and Correlates of Domestic Violence in Selected Igbo Communities of Imo State, Nigeria. *African Journal of Reproductive Health*, 6(2) : 101-114.

UO Okonkwo Osili and BT Long (2008): Does female schooling reduce fertility? Evidence from Nigeria. *Journal of Development Economics* 87: 57-75.

AM Olusakin (2006): Peace in the Niger Delta: economic development and the politics of dependence on oil. *International Journal on World Peace*, Vol 23, No 2.

SI Omofonmwan and GI Osa-Edoh (2008): The challenges of environmental problems in Nigeria. *Journal of Human Ecology* 23(1): 53-57.

O Onwujekwe, R Chima, E Shu, D Nwagbo, and P Okonkwo (2001): Hypothetical and actually willingness to pay for insecticide-treated nets in five Nigerian communities. *Tropical Medicine and International Health*, 6(7): 545-553.

O Onwujekwe and B Uzochukwu (2005): Socio-economic and geographic differentials in costs and payment strategies for primary healthcare services in Southeast Nigeria. *Health Policy* 71: 383-397.

EC Onwuka (2005): Oil extraction, environmental degradation and poverty in the Niger Delta region of Nigeria: a viewpoint. *International Journal of Environmental Studies*, 62(6): 655-662.

E Orji, IO Ogunlola, and U Onwudiegwu (2002): Brought-in maternal deaths in south-west Nigeria. *Journal of Obstetrics and Gynaecology*, Vol 22, No 4: 385-388.

LC Osuji and AA Uwakwe (2006). Petroleum industry effluents and other oxygen-demanding wastes in Niger Delta, Nigeria. *Chemistry and Biodiversity*, 3(7): 705-717.

BA Oye-Adeniran, IF Adewole, AV Umoh, EE Ekanem, A Gbadegesin, and N Iwere (2004). Community-based survey of unwanted pregnancy in southwestern Nigeria. *African Journal of Reproductive Health*, 8(3):103-115.

JA Patz, D Campbell-Lendrum, T Holloway, JA Foley (2005): Impact of regional climate change on human health. *Nature*, 438(17): 310-316.

L Polgreen (April 24 2007). Governing Party Wins in Nigeria, but Many Claim Fraud. *The New York Times*. Retrieved April 5 2009, from: <<http://www.nytimes.com/2007/04/24/world/africa/24nigeria.html?scp=3&sq=Nigeria%20elects%20Yar%27Adua&st=cse>>.

L Polgreen (Nov. 30 2008a). Deadly Nigeria clashes subside. *The New York Times*. Retrieved March 24 2009, from: <http://www.nytimes.com/2008/12/01/world/africa/01nigeria.html?_r=1&scp=6&sq=ethnic%20clashes%20nigeria&st=cse>.

L Polgreen (Dec. 20 2008b). Nigeria forces are implicated in the killings of Muslims. The New York Times. Retrieved April 6 2009, from: <<http://www.nytimes.com/2008/12/21/world/africa/21nigeria.html>>.

L Polgreen (Feb. 6 2009). 84 children are killed by medicine in Nigeria. The New York Times. Retrieved April 6 2009, from: <<http://www.nytimes.com/2009/02/07/world/africa/07nigeria.html>>.

SA Rahman (2008): Women's involvement in agriculture in northern and southern Kaduna State, Nigeria. *Journal of Gender Studies*, Vol 17, No 1: 17-26.

C Reis et al.(2005): Discriminatory attitudes and practices by health workers toward patients with HIV/AIDS in Nigeria. *PloS Medicine*, 2(8): e246.

H Roberts (2003): Reproductive health struggles in Nigeria. *The Lancet*, 361, June 7.

ML Ross (2003): Nigeria's Oil Sector and the Poor. Paper prepared for the UK Department of International Development "Nigeria: Drivers of Change" program. May.

RI Rotberg (2004). *Crafting the New Nigeria: Confronting the Challenges*. Lynne Rienner Publishers.

RI Rotberg (2007). *Nigeria: Elections and Continuing Challenges*. Council on Foreign Relations.

JD Sachs and AM Warner (1997): *Natural Resource Abundance and Economic Growth*. Development Discussion Paper No. 517a, Harvard Institute for International Development, Cambridge, MA.

JD Sachs and AM Warner (1999): *Natural Resource Intensity and Economic Growth*. In *Development Policies in Natural Resource Economies*, eds. J Mayer, B Chambers, A Farooq. Cheltenham (UK): Edward Elgar: 13-38.

R Sandell (2005): *Were they pushed or did they jump? The rise in Sub-Saharan Immigration*. Elcano Royal Institute, November.

G Sedgh, A Bankole, B Oye-Adiran, IF Adewole, S Singh, and R Hussain (2006): Unwanted pregnancy and associated factors among Nigerian women. *International Family Planning Perspectives*, 32(4): 175-184.

RL Sklar, E Onwudiwe, and D Kew (2006). *Nigeria: Completing Obasanjo's Legacy*. *Journal of Democracy*, 17(3): 100-115.

RC Snow, TE Slinger, FE Okonofua, F Oronsaye, and J Wacker (2002). Female genital cutting in southern urban and peri-urban Nigeria: self-reported validity, social determinants and secular decline. *Tropical Medicine and International Health*, 7(1): 91-100.

CC Soludo (2007). Nigerian economy: Can we achieve the vision 20: 2020. Retrieved 1 April 2009 from: <<http://www.cenbank.org/out/Speeches/2007/Govadd10-1-07.pdf>>.

StatCompiler: Building tables with DHS data. Measure DHS online tools. Retrieved 6 April 2009 from: <http://www.statcompiler.com/start.cfm?action=new_table&userid=265665&usertabid=288071&CFID=801945&CFTOKEN=25951902>.

N Swainson (2003): Conference on programs and policies to improve girls' education. The Global Campaign for Education, Washington, DC.

MA Tanimola and JO Owoyemi (2009). Healthcare-seeking behaviour in Anyigba, North-Central, Nigeria. *Research Journal of Medical Sciences*, 3(2): 47-51.

G Thomas-Emeagwali (1994). Islam and gender: The Nigerian case. In CF El-Solh and J Mabro (Eds.), *Muslim Women's Choices: Religious Belief and Social Reality*, (73-84). New York: Berg Publishers.

Transparency International (2008). Corruption Perceptions Index. Retrieved 7 May 2009 from: <http://www.transparency.org/policy_research/surveys_indices/cpi/2008>.

N Toubia (Sept. 1994). Female circumcision as a public health issue. *New England Journal of Medicine*, 331(11):712-716.

IA Udoh, RM Stammen, and JE Mantell (2008). Corruption and oil exploration: expert agreement about the prevention of HIV/AIDS in the Niger Delta of Nigeria. *Health Education Research*, 23(4): 670-681.

CJ Uneke, A Ogbonna, A Ezeoha, PG Oyibo, F Onwe, and BAF Ngwu (2008). "The Nigeria health sector and human resource challenges," *Internet Journal of Health*, 8(1).

UNAIDS (2008): Epidemiological fact sheet on HIV and AIDS: Nigeria. UNAIDS/WHO/UNDP.

United Nations (2000): *World Population Prospects. The 2000 Revision Highlights*. United Nations. New York.

United Nations (2007): *World Population Prospects. The 2006 Revision*. United Nations. New York.

United Nations Children's Fund (2005). S Dolan. Nigeria completes Africa's largest-ever measles campaign. Retrieved 20 May 2009 from: <http://www.unicef.org/infobycountry/nigeria_30483.html>.

United Nations Children's Fund (2008). Revised country programme document: Nigeria. Retrieved 20 May 2009 from: <[http://www.unicef.org/about/execboard/files/Nigeria-BOARD_CPD_2008Revised-formatted_14_July\(3\).pdf](http://www.unicef.org/about/execboard/files/Nigeria-BOARD_CPD_2008Revised-formatted_14_July(3).pdf)>.

United Nations Children Fund (2009). Immunization: Polio Eradication in Nigeria. Retrieved 20 May 2009 from: <http://www.unicef.org/immunization/index_49088.html>.

United Nations Department of Economic and Social Affairs (2004): Urban agglomerations. UNDESA.

United Nations Development Programme (2003): Human Development Report 2002. United Nations, New York.

United Nations Development Programme (2008): Human Development Report 2007/2008: Country fact sheets: Nigeria. United Nations, New York.

UNESCO Institute for Statistics (2006): Global Education Digest 2006: Comparing Education Statistics across the World. UIS, Montreal.

UNFPA (2005): Country Profiles for Population and Reproductive Health, Policy Developments and Indicators 2005. UNFPA and Population Reference Bureau.

UNGASS (2008): Nigeria UNGASS Report 2007. UNGASS, January.

United Nations Population Division, Department of Economic and Social Affairs (2001): World Population Ageing 1950-2050. United Nations, New York.

United Nations Population Division (2008). World Urbanization Prospects: The 2007 Revision Population Database. Retrieved 14 May 2009 from: <<http://esa.un.org/unup>>.

OA Uthman, MB Uthman, and I Yahaya (2008). A population-based study of effect of multiple birth on infant mortality in Nigeria. BMC Pregnancy and Childbirth, 8(1): 41+.

VA Wagbatsoma and OH Okojie (Dec. 2006). Knowledge of HIV/AIDS and sexual practices among adolescents in Benin City, Nigeria. African Journal of Reproductive Health, 10(3): 76-83.

World Bank (2008). Country Brief: Nigeria. World Bank, Washington DC.

World Bank (2008a): Millennium Development Goals: Nigeria. World Development Indicators Database, World Bank, Washington DC.

World Bank (2008b). World Development Report 2009: Reshaping Economic Geography. World Bank, Washington DC.

World Bank (2008c). Doing Business 2009: Country Profile for Nigeria. Washington, DC.

World Bank (2008d). World Development Indicators 2008. Washington, DC.

World Bank/DFID (2005). Country Partnership Strategy for the Federal Republic of Nigeria. June 2.

World Economic Forum (2008). Global Competitiveness Report 2008-2009. WEG, Geneva.

"When the cops are robbers. (2005, April 18). *Economist*, 376(8440): 37-37. *Academic Search Premier*, EBSCOhost (accessed April 6, 2009).

WHO Statistical Information System (WHOSIS).

WHO study group on female genital mutilation and obstetric outcome (2006). Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries, *The Lancet*, 367(9525):1835-1841.

World Health Organization (1997): Water pollution control – a guide to the use of water quality management principles: case study IV – Nigeria. WHO, Geneva.

World Health Organization (December 2001). "Macroeconomics and Health: Investing in Health for Economic Development." Retrieved 12 May 2009 from: <<http://whqlibdoc.who.int/publications/2001/924154550x.pdf>>.

World Health Organization (2002): WHO Country Cooperation Strategy: Federal Republic of Nigeria 2002-2007. WHO Regional Office for Africa, Brazzaville.

World Health Organization (2004). *Immunization in Practice*. WHO, Dept. of Immunization, Vaccines and Biologicals. Published by World Health Organization.

World Health Organization (2005): Roll Back Malaria Monitoring and Evaluation: Nigeria Country Profile. WHO.

World Health Organization (2006). Country Health System Fact Sheet 2006: Nigeria. Retrieved 12 May 2009 from: <http://www.afro.who.int/home/countries/fact_sheets/nigeria.pdf>.

World Health Organization (2007): WHO Country Office, Nigeria: 2007 Annual Report.

World Health Organization (2008). *World Health Statistics*. WHO, Geneva.

World Health Organization (2008a). *Global Tuberculosis Control: WHO Report 2008*. Geneva.

World Health Organization (2008b). Nigeria Country Profile, *World Malaria Report 2008*. WHO, Geneva.

World Health Organization (2008c). Yellow fever vaccine: Reported estimates of YFV coverage. Retrieved 21 May 2009 from: <http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tscoverageyfv.htm>.

World Health Organization (2009). WHO/UNICEF coverage estimates for 1980-2007. Retrieved 21 May 2009 from: <http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tswucoveredtp3.htm>.

S Wright (1998). *Nigeria: Struggle for Stability and Status*. Boulder, CO: Westview Press.

AA Yusuf and HA Yusuf (2008). Evaluation of strategies for soil fertility improvement in northern Nigeria and the way forward. *Journal of Agronomy*, 7(1): 15-24.