Women's Health, Economic Health: A Cross-National Study of Nine sub-Saharan Countries

Gloria Hage*

Abstract

This article analyzes whether a country's investment in comprehensive women's healthcare translates into increased economic growth and economic output. Very few studies consider the possible direct correlation between the physical health of a country's women and a country's economic productivity. This study fills part of this gap by examining the health status of women in nine sub-Saharan African countries, using World Health Organization data over various time periods dependent on data availability. Health status was then compared to each country's economic growth, derived from measures of Gross Domestic Product (GDP), Gross National Income (GNI), and the Human Development Index (HDI). The data show that where women's health status is high, economic growth is high, and where women's health status is low, economic growth is low. In conclusion, we must ensure women's health, not only for the sake of ethics, but also for the sake of building economically strong countries where all people can thrive.

Résumé

Cet article essaie de déterminer si l'investissement d'un pays dans la santé globale des femmes se traduit par une meilleure croissance et de meilleurs résultats économiques. Très peu d'études s'intéressent à la corrélation directe possible entre la santé physique des femmes d'un pays, et la productivité économique de ce dernier. La présente étude règle en partie cette question en procédant à une analyse de l'état de santé des femmes dans neuf pays d'Afrique

*   Centre for Global Affairs, New York University, New York.
    Email: gh469@nyu.edu.

subsaharienne en utilisant les données de l'Organisation mondiale de la santé (OMS) au cours de périodes différentes selon la disponibilité des données. L'état de santé a ensuite été comparé à la croissance économique de chaque pays, sur la base du Produit intérieur brut (PIB), du Revenu national brut (RNB), et de l'Indice de développement humain (IDH). Les données statistiques montrent que lorsque l'état de santé des femmes est bon, la croissance économique est bonne, et lorsque l'état de santé des femmes n'est pas bon, la croissance économique est faible. En conclusion, nous devons veiller à la santé des femmes, non seulement pour des raisons d'éthique, mais aussi dans le but de bâtir des Etats économiquement forts où tous les habitants peuvent prospérer.

Introduction

Does providing better healthcare to women have tangible economic benefits for a developing country? Good health is required for any person to contribute economically to their family and community. Women are the foundation of the family, and so, a crucial element of a society's structure. Therefore, does strengthening women strengthen the whole of society? On the most basic level, the link between health and economic growth is that healthy workers are more productive than comparable workers with poor health. Simply, healthy workers produce more, with greater consistency for longer periods of time, and that has a direct correlation to greater economic output. Improved longevity increases savings rates, healthier countries receive greater foreign direct investment, healthy children have higher rates of school attendance and better cognitive development, and a longer life span makes investment in education more attractive (Bloom et al. 2004:10).

In this article, I explore the correlation between the status of women's health and a country's economic growth. The status of women's health is analyzed using independent variables which include government expenditure on health as a percentage of GDP, female life expectancy, maternal mortality, number of births attended by skilled health personnel, and drug access for HIV and TB. Economic growth is analyzed using various measures of GDP and GNI, as well as the Human Development Index (HDI).

Women bear and raise children. The next generation can only do well if given the opportunity for long-term stability, and women provide much of this in the developing world. 'Rural women are responsibe for half of the world food production and, in developing countries, they produce 60 to 80 per cent of the food' (International Center for Research on Women 2005). Women in sub-Saharan Africa provide food for the

family, and are crucial to food security overall. A woman's illness or premature death is a threat to the survival of her family, and possibly others in the community that depend on the food she produces.

Unavailable, inaccessible, unaffordable and poor quality healthcare all contribute to the premature deaths of women. The high risk of dying in pregnancy and childbirth in sub-Saharan Africa continues unabated. sub-Saharan Africa (SSA) has the highest rate of maternal deaths in the world, and the number of maternal deaths per 100,000 live births has remained virtually unchanged since 1990. Life expectancy between the richest and poorest countries is now greater than it was 40 years ago (Chan 2008). The average life expectancy of 642 million people in sub-Saharan Africa is 51 years.

The AIDS pandemic has made it clear that equity in health is a matter of life and death. Of the three million people who died of HIV/AIDS in 2001, 73 per cent of them were in sub-Saharan Africa (The World Bank 2004:26). Women are increasingly carrying the HIV burden. According to the 2008 Millennium Development Goals Report, of all the people living with HIV in sub-Saharan Africa, 59 per cent are women. Also, diseases such as tuberculosis and malaria continue to spread. Two billion people lack access to essential medicines, which results in forty thousand deaths daily, with the majority of them being children under five years of age. Equity in health is a challenge globally, but especially for women and children living in sub-Saharan Africa. This region carries the greatest burden of disease with the least resources.

There are many challenges facing access to healthcare and medicine in sub-Saharan Africa. Medicine is unavailable due to three primary factors: research and development do not support the health needs of the poor; health systems are generally inadequate; and existing medicines are unaffordable to most Africans. People lack access to healthcare due to brain drain, inadequate and poorly maintained healthcare facilities, and the lack of access to other healthcare resources due to geographical barriers. In addition, there are numerous other factors that may play a role in the low life expectancy of women, resulting in a very complex situation.

Having a healthy society, and thus a healthy workforce, should be the goal of all countries. 'Disease can destabilize economies and entire political systems. The stability of the global system hinges on an international effort to fight disease and on the health of the poorest, most vulnerable people' (World Health Organization 2009a). Women, who constitute half of the world's population, are often not considered separately in terms of

health and productivity. This study is considering only women's health status because of the unique role they play in society and the undeveloped potential contribution they may make to a country's economic growth. Leaving women out or underutilizing their talent hinders the potential growth of an entire society. It can be equated to using 50 per cent of available resources.

Research Design

In this study, I utilized the Most Dissimilar Systems Design (MDSD) for my analysis. I compared nine countries in sub-Saharan Africa, looking at the correlation between women's health status and a country's economic growth. Countries in my analysis comprise Angola, Botswana, Burundi, Gabon, Ghana, Guinea, Niger, Nigeria and Swaziland. Independent variables include: government expenditure on health as a percentage of GDP, female life expectancy, fertility rate, infant mortality, under-5 mortality, maternal mortality, births attended by skilled personnel, contraceptive prevalence, access to antiretroviral therapy for advanced HIV disease, and tuberculosis (DOTS) treatment access.

Dependent variables include: the Human Development Index (HDI), Gross Domestic Product per capita, Gross National Income per capita, Gross Domestic Product annual growth, Gross National Income per capita annual growth, and Gross National Income per capita Purchasing Power Parity. Using GDP as a sole indicator of economic growth would be deceptive due to the extreme inequality in wealth distribution. In many sub-Saharan countries, a small percentage of the population or the government hold most of the financial resources. I also utilize the Human Development Index (HDI), as it represents a broader view of a country's wellbeing.

My first step in evaluating the health status of women in this study involved collecting data for all the variables, and then utilizing statistical normalization to derive a single score between 1 and 10 for each variable. The independent variable scores were then combined and averaged to create a single composite score for each country. I then collected all the relevant data for the economic variables and used statistical normalization to give each economic variable a score between 1 and 10. The economic variable scores were then combined and averaged to create one single composite score between 1 and 10 that represents all economic variables. I then ranked the countries for both health status and economic growth, from 1 being the best to 10 being the worst. This allowed me to compare where each country lay in the ranking to determine if there is a pattern that supports my hypothesis.

Taking into consideration that sub-Saharan Africa carries the highest HIV disease burden in the world, countries were selected to ensure that this one factor would not significantly impact any outcome. The countries in this study have different levels of HIV burden, with varying life expectancies and health status. There is enough variation so as not to corrupt the outcome. As well, the inclusion of a variety of health variables should negate any potential deviation that could show itself. No honest analysis of this region could exclude HIV, as it is a significant health threat for women.

This research is very important, given the current global economic crisis. It can help ensure that countries in need continue to receive economic investment for health from the international community. It will also help developing countries allocate their resources towards health services and medicines for women. At a time when resources may be scarce and women and children may continue to be left behind, it is crucial that information is available that argues on the most pragmatic level that the contribution a healthy woman makes to society is not a luxury, but a necessity for that society's economic growth and future.

Data Presentation and Analysis

Health Evaluation

Government Expenditure on Health as a Percentage of GDP

Some will argue that the best predictor of the impact government spending has on health depends on whether a country has good or poor governance. The World Bank has extensive empirical data supporting the argument that aid to countries with poor governance has no perceptible impact. In this study, the percentage of GDP spent on health is considered a significant indication of a country's level of commitment to the health of their population. The optimal environment to deliver health is clearly in countries with good governance. However, we cannot afford to wait for good governance to occur, to address the urgent health needs of poor countries, and most specifically for sub-Saharan Africa (SSA). SSA is a region that is volatile to governance change, planned or unplanned. As well, it has a history of war, famine and unrest. It has been shown that properly planned and implemented actions have the possibility to impact the situation on the ground positively.

In this study, Botswana had the highest expenditure rate and largest increase in government spending on health as a percentage of GDP, increasing from 5.1 per cent in 1995, to 7.2 per cent in 2006. Ghana had the second highest expenditure at 6.2 per cent, but between 2000 and 2006 decreased in spending by 1.2 per cent. Swaziland had a healthcare

expenditure as a percentage of GDP in 1995 of 5.9 per cent, in 2000 of 6.1 per cent and in 2006 a decline back to the 1995 level of 5.9 per cent. Although her expenditure is relatively high compared to the other countries studied, it has remained unchanged, even given the fact that she has the highest level of HIV burden. Guinea had a slight increase in spending over the data period with 5.1 per cent in 1995, 5.3 per cent in 2000 and 5.7 per cent in 2006.

Nigeria dropped in her spending from 1995 at 5.2 per cent, to 2000 when it was at 4.3 per cent, and again in 2006 at 4.1 per cent. Niger has remained consistent at a 4 per cent expenditure rate, with a slight dip in 2000. Gabon had a spending rate of 2.3 per cent in 1995, 4.3 per cent in 2000, and then a decrease in 2006 to a rate of 3.7 per cent. Burundi had decreases in spending over the period studied with a rate of 3.6 per cent in 1995, 3.1 per cent in 2000, and 3 per cent in 2006. Angola had a spending rate of 4.1 per cent in 1995, and then decreased to 2.4 per cent in 2000, with a slight increase occurring in 2006, to 2.7 per cent. Only four countries – Botswana, Ghana, Swaziland and Guinea – had rates of expenditure on health as a percentage of GDP greater than the regional average of 5.3 per cent.

Figure 1: Government Expenditure on Health as a Percentage of GDP
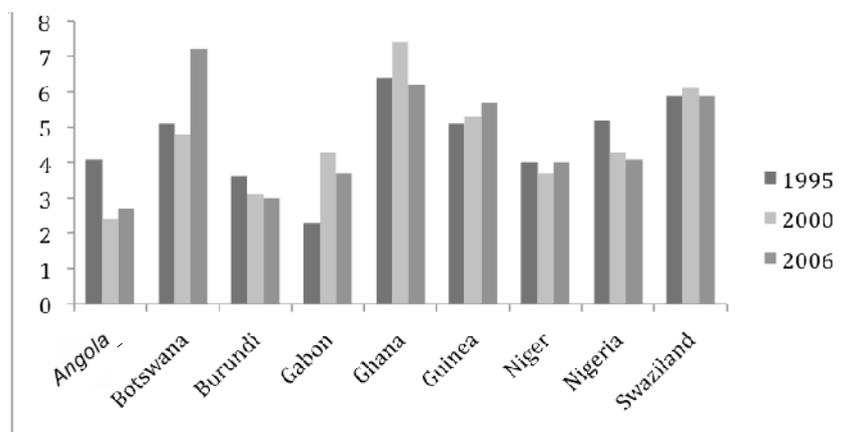
Source: World Health Organization 2009.

Female Life Expectancy

Life expectancy is the ultimate measure of a population's health and longevity, and correlates directly to a country's potential for economic development and growth. In the region of sub-Saharan Africa, life

expectancy at birth has remained unchanged since 1990. Twenty-nine countries in the region have shown improvements in life expectancy. Some countries that were experiencing improvement have recently lost ground due to the HIV/AIDS pandemic. Even countries with a comparatively low HIV/AIDS burden are challenged when it comes to increasing life expectancy. Many people continue to die prematurely from preventable and treatable diseases.

Of the nine countries I studied, four had a below-average female life expectancy for the SSA region, with the remaining being at par or better. I evaluated data using the years 1990, 2000, and the most recent available data – year 2006. Angola has a below-average female life expectancy for the region, and it has remained stagnant at 44 years, 44 years and 43 years respectively. Angola has gone through many decades of war, with sporadic periods of peace. This may be a contributing factor, but many countries in SSA have similar war-torn backgrounds with different life expectancy trends. In 1990, Botswana had a very high female life expectancy of 68 years, far above the region average of 50. However, it declined greatly by 2000 to 51 years, which correlates to the high prevalence of HIV/AIDS. In 2006, it increased slightly to 52 years. This may appear on the surface as an insignificant increase, but it may also be the beginning of a positive trend. Botswana has been very proactive in her health programs, especially for women, and she may just be starting to see the outcome of her efforts.

Burundi has been relatively stagnant, with a female life expectancy at 51 years, 49 years, and 50 years respectively. Gabon has seen a continuing decrease from 65 years in 1990, to 63 years in 2000, and 60 years in 2006. Although she still has a female life expectancy 10 years higher than the region average, the consistent decrease over the study period is concerning. Ghana has had a relatively stable female life expectancy of 60 years, 59 years and 58 years respectively. Guinea has seen a considerable increase in female life expectancy from 47 years in 1990, to 53 years in 2000, and 55 years in 2006. Niger, although having a very low female life expectancy of 43 years, has experienced significant improvement since 1990, when the female life expectancy was a mere 35 years. Nigeria has seen some improvement over time, with female life expectancy at 46 years, 48 years and 49 years respectively. Swaziland has experienced a severe drop in female life expectancy from 1990 to 2006. In 1990, her female life expectancy was 62 years; in 2000 it dropped to 53 years, and in 2006 it was 43 years. This is a drop of 19 years in female life expectancy. Swaziland has disease burden challenges, but this decline is the most significant of all the countries in this study.

Figure 2: Female Life Expectancy at Birth
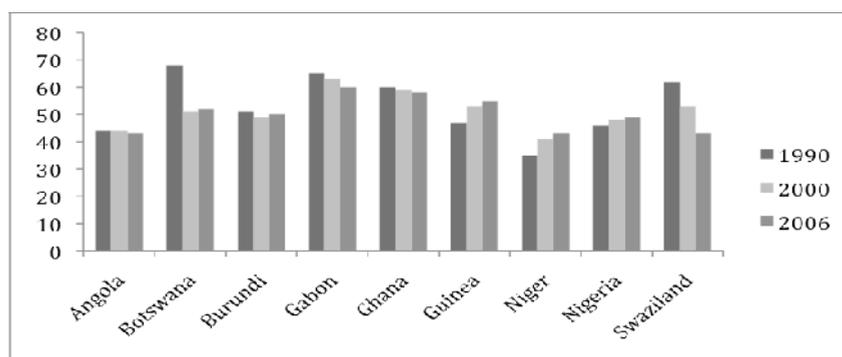
Source: World Health Organization 2009.

Fertility, Infant Mortality and Under-5 Mortality

A high fertility rate is closely related to high child mortality. A low fertility rate usually correlates to a higher state of women's health. Lower fertility rates point to healthier pregnancies, due to better prenatal care, delivery and postnatal care. It also means that babies who are born have the necessary resources available, such as medicine, healthcare, and nutritious food for them to grow into adulthood. When there is high infant mortality, women tend to have more pregnancies, producing more children to make up for the children they may lose. Close spacing of births risks the health and life of women. As well, many pregnancies may limit the years a woman can be economically productive.

Of the nine countries studied, all had declining fertility rates, some more significant than others. The highest fertility rate was in Niger, at 7.3, and the lowest was in Botswana, at 3. The greatest decline in fertility was in Swaziland, with a decrease of 2.1 from 1990 to 2006. In 1990, the fertility rate in Swaziland was 5.7, in 2000 it was 4.2 and in 2006 it reached 3.6. The next biggest fertility decline was in Ghana, at 1.8 from 1990 to 2006. Ghana's fertility rates were 5.8 in 1990, 4.6 in 2000, and 4 in 2006. Botswana and Gabon both had a fertility rate decline of 1.7, and fertility rates over the study period were very similar. Botswana had a fertility rate in 1990 of 4.7, in 2000 it was 3.4, and in 2006 it was 3. Similarly, Gabon's fertility rates were 4.8, 3.6, and 3.1 respectively. Nigeria had a fertility rate decline of 1.3 from 1990 to 2006, with rates of 6.8 in 1990, 6.1 in 2000 and 5.5 in 2006. Guinea experienced a 1.1 decrease in fertility rate in the period studied. The rates were 6.7 in 1990, 6 in 2000 and 5.6 in 2006. Angola and Niger had the smallest decline in fertility rates, at 0.7 and 0.6 respectively.

Figure 3: Total Fertility Rate Per Woman
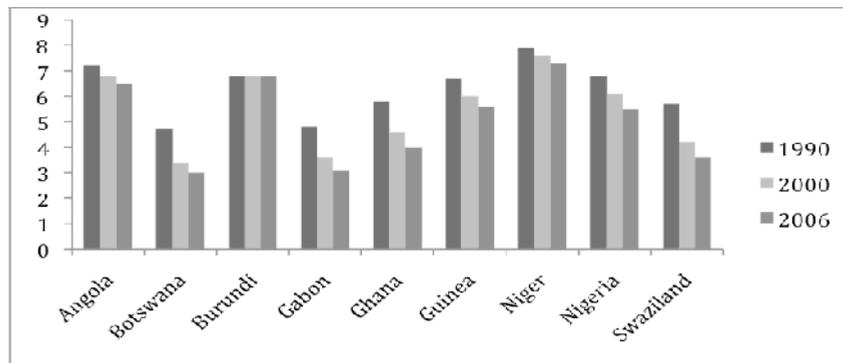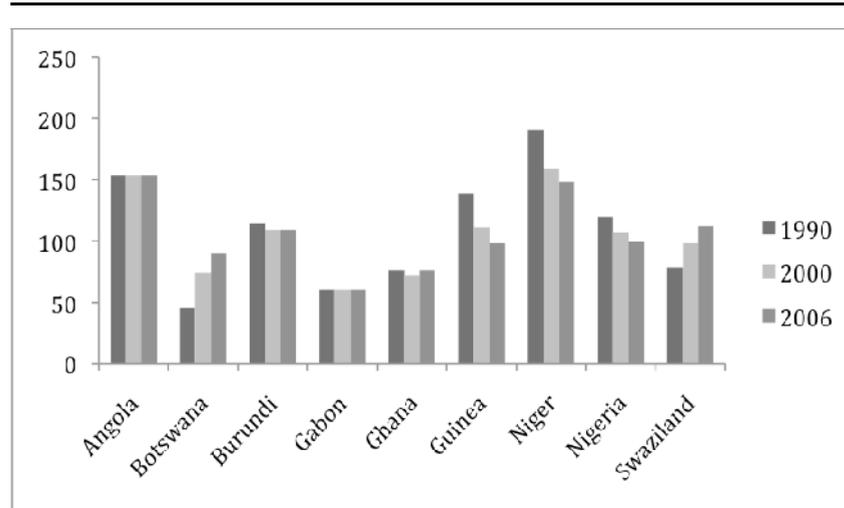

Source: World Health Organization 2009.

The United Nations Millennium Development Goal is to reduce the under-5 mortality rate by two-thirds between 1990 and 2015. Between 1990 and 2006, about 27 countries, majority in SSA, made no progress in reducing childhood deaths. SSA has the highest child mortality rate in the world, double that of the next worse-off region. 'SSA accounts for about half of the deaths of children under five in the developing world' (United Nation Report 2008:21). Overall, infant mortality for the region has decreased somewhat, but not significantly, with a reduction from 1990 to 2006 of 98 per 1,000 live births to 87 per 1,000 live births.

Of the nine countries I studied, four had virtually unchanged infant mortality rates. These were Angola, with a rate of 154 per 1,000 live births; Burundi at 109 per 1,000 live births; Gabon at 60 per 1,000 live births; and Ghana at 76 per 1,000 live births. Compared to the region in 2006, Gabon and Ghana had infant mortality rates well below the average, while Burundi and Angola were quite a bit higher. Two of the countries studied showed an increase in infant mortality. Botswana had consistent increases over the period studied, 1990, 2000 and 2006. Their infant mortality rates per 1,000 live births were 45, 74 and 90 respectively. Even though they are only slightly above the region average of 87 per 1,000, the upward trend is a cause for concern. Swaziland as well experienced a consistent increase in infant mortality over the periods studied. Her infant mortality rate per 1,000 live births was 78 in 1990, 98 in 2000, and 112 in 2006, well above the regional average.

Only three countries experienced a decrease in the number of deaths per 1,000 live births. The country with the most significant decrease – from 191 deaths per 1,000 live births in 1990 to 148 deaths per 1,000 live births in 2006 – is Niger. This improvement was consistent over the periods.

Although she had significant improvement in her infant mortality, she remains the second highest among the countries studied. Guinea had the next significant improvement in infant mortality, with a decrease from 139 per 1,000 live births in 1990 to 98 per 1,000 in 2006. Nigeria has been showing consistent downward trend in infant mortality; with a rate of 120 per 1,000 live births in 1990, and 99 in 2006. Both rates still remain above the region average. For countries trending downward, keeping and improving the health systems that are delivering these results is key.

Figure 4: Infant Mortality
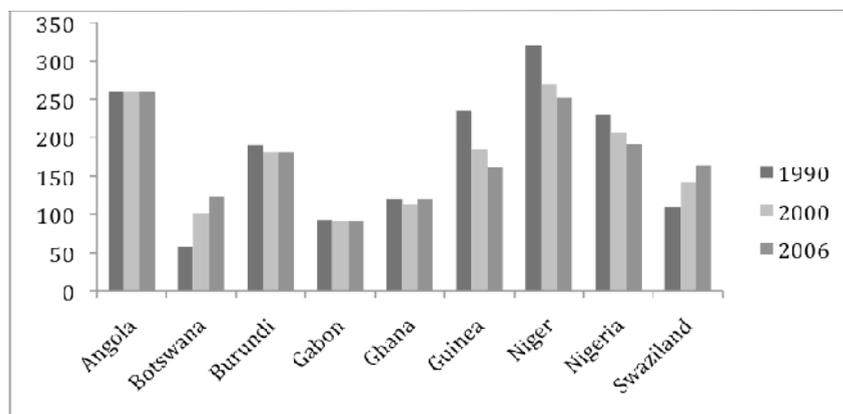

Source: World Health Organization 2009.

Under-5 mortality rates correlate directly to infant mortality rates. Angola, Burundi, Gabon and Ghana all had virtually unchanged under-5 mortality rates per 1,000 live births from 1990 to 2006. Angola remained at 160 deaths per 1,000 live births for all the periods studied, which is about on a par with the regional average of 157 in 2006. Burundi saw a decrease from 190 per 1,000 in 1990, to 181 in 2000, but remained unchanged six years later, at 181 in 2006. Gabon remained unchanged throughout the study period, and is well above the regional average. Ghana decreased in her under-5 mortality, from 120 per 1,000 live births to 113 per 1,000 live births between 1990 and 2000. However, it increased back to 120 in 2006, showing reverse trending. Ghana is still significantly lower than the regional average, but their recent increase may be a cause for alarm.

Botswana experienced a consistent worsening in under-5 mortality from 1990 to 2006, at a rate in of 58 deaths per 1,000 live births in 1990, 101 deaths per 1,000 live births in 2000, and 124 deaths per 1,000 live

births in 2006. This is a total increase in the study period of 66 deaths per 1,000 live births, yet this remains below the regional average of 157. Swaziland as well experienced worsening trends in under-5 mortality, with rates for 1990, 2000 and 2006 of 110, 142 and 164 deaths per 1,000 live births; that is, an increase of 54 deaths per 1,000 live births between 1990 and 2006, above the regional average.

As with infant mortality, the three countries showing an improvement in under-5 mortality are Guinea, Niger and Nigeria. Between 1990 and 2006, Guinea reduced its under-5 mortality per 1,000 live births by 74, Niger by 67 and Nigeria by 39. Although these are significant decreases, all of these countries, at 161, 253 and 191 in 2006, remain above the regional average. Niger with a rate in 2006 of 253 per 1,000 live births, and Angola with a rate of 260 per 1,000 live births are considerably above the regional average.

Figure 5: Under-5 Mortality, Both Sexes

Source: World Health Organization 2009.

Maternal Mortality

In SSA, the risk of a woman dying due to a treatable or preventable complication of pregnancy and childbirth is 1 in 22, compared to 1 in 7,300 in developed regions (World Bank 2008:25). Maternal mortality in SSA per 100,000 live births has seen little change from 1990 to 2005. In 1990, the regional rate was 920 deaths per 100,000 live births, and in 2005 that number was 900, decreasing only by 20. Over a fifteen-year period, there has been negligible improvement in maternal mortality in this region. As well, the lack of good and adequate maternal care is causing a large number of infant deaths and disabilities.

Women die from a wide range of complications in pregnancy, childbirth and the postpartum period. The four major killers are: severe bleeding, infections, eclampsia (which is a hypertensive disorder during pregnancy) and obstructed labor. Complications after unsafe abortions cause 13 per cent of maternal deaths. Indirect causes of maternal death include diseases that complicate pregnancy, such as malaria, anemia and HIV. Women also die from lack of adequate care during the entire pregnancy and birthing period.

Figure 6: Maternal Mortality Ratio for 2005
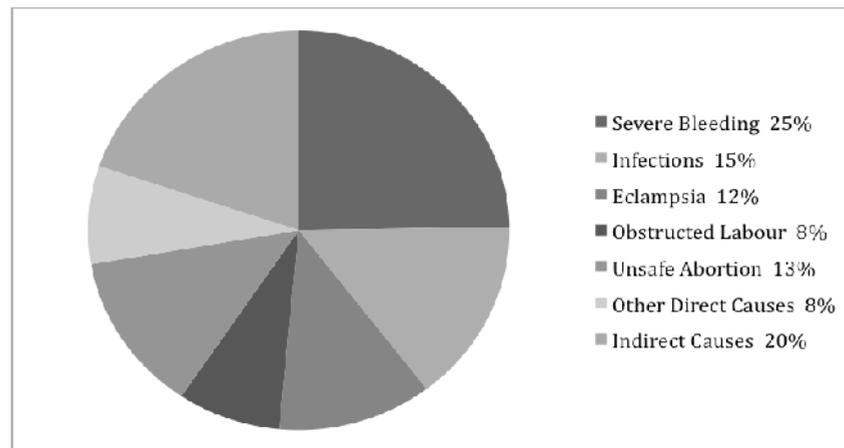
Source: The World Health Report 2005. Make every mother and child count, WHO 2005.

'Pregnancy-related complications are among the leading causes of death and disability among women of reproductive age (15 - 49 years)' (Oluwole 2004:22). The loss of women in the prime of their lives is not just a personal tragedy but also a societal one, as it erodes the social and economic gains that she had made in her life. These deaths ultimately tear apart the fabric that weaves family, community and the greater societal structure together. The need for improved maternal health has been expressed over the past twenty-five years with various commitments made along the way. Sadly, the numbers speak for themselves and the lack of improvement in this area is by far the most detrimental for women and the society as a whole. This is the foundation of women's health, and all other health issues ride on the success or failure of this area.

For the nine countries studied, the only available data year was 2005. The regional data used are from the MDG 2008 Report, it only reports data on the regional level for 1990 and 2005. It is important to take into account the fact that we are unable to access maternal mortality trending for these countries, therefore not knowing if these countries are progressing or worsening in this area. The whole number data for 2005 point to serious problems for many of the countries studied. It is however, important to keep in mind that, worldwide, there has been very little improvement in maternal mortality, with a less than 1 per cent decrease per year from 1990 to 2005. This is far below the 5.5 per cent decrease per year needed to meet the MDG target.

Figure 7: Maternal Mortality Ratio per 100,000 live birds for 2009
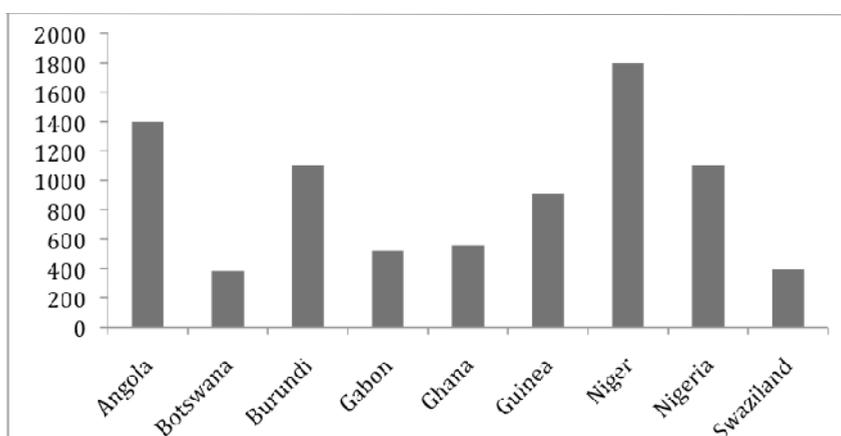
Source: World Health Organization and World Bank 2009.

Of the countries studied, four had maternal mortality rates lower than the region, four had maternal mortality rates higher than the region, and one was on a par with the region. The four countries with significantly higher maternal mortality than the region average of 900 per 100,000 live births are Niger at 1,800 per 100,000 live births; Angola with 1,400; and both Nigeria and Burundi with 1,100. The four countries with rates below the region average are Botswana with 380 per 100,000 live births; Swaziland with 390; Gabon with 520, and Ghana with 560. Guinea has a rate at par with the region, of 910 per 100,000 live births.

Ghana and Burundi have both started pilot programs to improve their maternal mortality. In 2003, Ghana started a program called 'Safe

Motherhood/Infant Life Education' (SMILE) support groups (Fleischer-Djoleto 2004:26). The pilot program started in the Wassa West district of Ghana where it is very rural with difficult terrain, and has a poor transport infrastructure and family incomes of less than US$0.5/day. These groups were formed to educate community members on maternal and newborn health issues, and they work in collaboration with the community health centers.

Delays in seeking appropriate care occur at the individual, family and community levels. SMILE has worked to educate on what the danger signs of pregnancy are, and when to seek help. It has also set up a referral system, provided appropriate transport and improved communication between communities, referral centres and ambulances. It has already seen improvement in process indicators such as an increase in the number of SMILE support groups, an increase in effective referrals from the community, and an increase in the number of patients reporting skilled attendants at delivery.

In 2004, Burundi started a referral and feedback system in the Karusi Province to improve maternal and newborn mortality. 'This system, a first experience in the country, enables health centers of the province to send a radio message to the maternity service of the Buhiga Hospital in the event of a complication of pregnancy and childbirth, requiring transfer of the patient for emergency operation. Pending the arrival of an ambulance that is itself equipped with radio, the staff of the health centres can through radio communication receive medical advise from Buhiga Hospital doctors' (Masimbu 2004:29). These programs are bold steps taken to improve the lives of women and infants. They will require continued commitment and involvement from all members of the society.
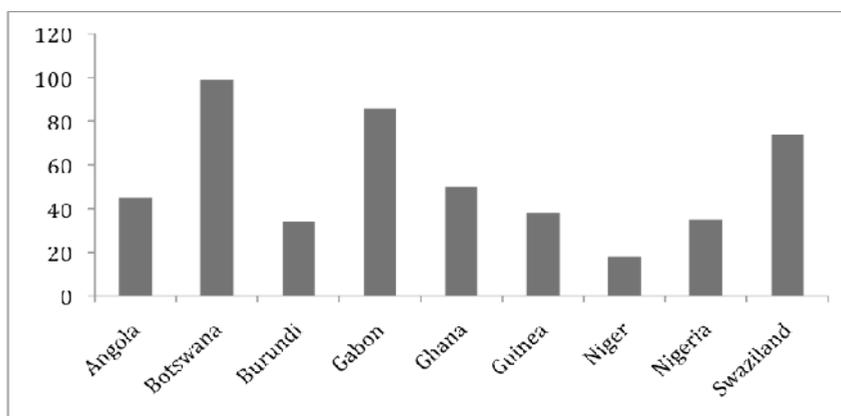
Births Attended by Skilled Personnel

Having skilled health personnel at delivery is the most effective way of preventing maternal death. This percentage has remained virtually unchanged in SSA over the past fifteen years. SSA has the lowest percentage of births attended by skilled personnel in the world, at only 44 per cent, while developed regions are at 100 per cent. Other regions in the developing world have made significant progress in this area over the past fifteen years. The fact that this has remained virtually unchanged in SSA is a cause for great concern when considering the danger this places on the lives of women and children.

Botswana, in 2000, had the highest coverage rate, with 99 per cent of births attended by skilled personnel. Gabon in the same year had a rate of

86 per cent. Swaziland, in 2002, reported an attendance of skilled personnel at birth rate of 74 per cent. Ghana had a rate of 50 per cent in 2006, up slightly from 44 per cent in 1998. Angola reported an attendance rate of 45 per cent in 2001, a substantial increase from 1996 when it was 23 per cent. Guinea had a rate of 38 per cent in 2005, up from 35 per cent in 1999. Niger has remained at an 18 per cent rate of births attended by skilled personnel from 1998 until 2006. Burundi in 2005 had a birth attendance rate of 34 per cent. Nigeria showed a decrease in births attended by skilled personnel from 1999 at 42 per cent, to 2003, when it was at 35 per cent.

Figure 8: Births Attended by Skilled Health Personnel (%)

Source: Latest Available Data 2000-2006 (WHO).

With the exception of Botswana and Gabon, the percentage of births attended by skilled health personnel for countries in this study was very low. A skilled health worker at delivery, in the form of a doctor, nurse or midwife, is critical in reducing maternal mortality. To see a drop in maternal deaths, every birth needs assistance from appropriately trained personnel, with proper equipment and referral options in case of complications. In this study, Botswana has shown the greatest strides with a rate approaching 100 per cent.

Contraceptive Prevalence

All of the countries studied had relatively low percentages of contraceptive prevalence. Swaziland, in 2002, posted the highest contraceptive prevalence rate of 46 per cent. In 2000, Botswana and Gabon reported contraceptive prevalence rates of 44.4 per cent and 32.7 per cent respectively. In 2003, Ghana reported a rate of 25.2 per cent, and Nigeria

of 12.6 per cent. In 2002, Burundi reported a contraception prevalence rate of 19.7 per cent. In 2006, Niger reported a contraception prevalence rate of 11.2 per cent. In 2005, Guinea reported a rate of 9.1 per cent, and in 2001 Angola reported a rate of 6.32 per cent. This means that the percentage of women in these countries that are not using contraception ranges from 54 per cent to 93 per cent. Not only can contraception help women control and space the number of children they have, if used in the form of a condom, it also protects them from HIV.

Figure 9: Contraceptive Prevalence Data, Years 2000 - 2006
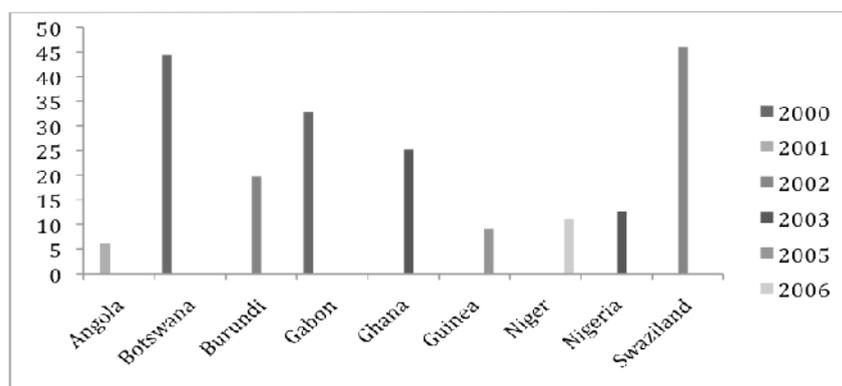
Source: World Health Organization 2009.

HIV/AIDS Antiretroviral (ARV) Therapy Coverage

Despite a few small victories, HIV/AIDS continues to take an enormous toll in SSA. Due to prevention programs, overall new infections of HIV declined from 3 million in 2001 to 2.7 million in 2007 (World Bank Report 2008:28) As well, due to the expansion of access to antiretroviral medicines, less people are dying from AIDS. Because of the increase in survival, the number of people now living with HIV was estimated at 33 million in 2007, compared to 29.5 million in 2001. The majority of these people are living in SSA. Women represent a growing share worldwide of people living with HIV/AIDS.

The percentage of women who are HIV positive and pregnant who receive antiretroviral therapy is a very important health indicator, as it reveals the need for the protection of the women's life while preventing

mother-to-child transmission of this disease. Pregnancy antiretroviral medicine programs, especially when used to prevent mother-to-child transmission of this disease, are an enormous societal benefit that strengthens women and families. The number of pregnant women between 15 and 49 years of age who are HIV positive when visiting antenatal care clinics reveals the challenges faced by many countries in SSA. In 2006, Botswana reported that 29.3 per cent of women visiting antenatal care clinics were HIV positive, Swaziland reported 19 per cent, Angola 2.4 per cent, Burundi 5.1 per cent, Nigeria 3.9 per cent, and Ghana 3.3 per cent (WHO, Regional Office for Africa 2008). Interception of HIV at pregnancy is key to prevent mother-to-child transmission and to ensure that women are treated to extend their lives. Due to missing data for one country, this very important health variable was excluded from this analysis.

Access to medicine to treat HIV is crucial for SSA to grow economically. The AIDS epidemic is estimated to knock 0.3-1.5 percentage points off Africa's GDP annual growth rate (Bell et al. 2003:2). HIV disproportionately affects women and ultimately can either allow for a child to be born with HIV or a mother to die of HIV, leaving children orphaned. Access to treatment for everyone, along with effective prevention programs, is the only way to begin to deal with this pandemic.

Botswana, with an HIV/AIDS prevalence of 26.3 per cent (the second highest of the countries studied), had the highest antiretroviral therapy coverage rate for people with advanced infection, at 76 per cent. All other countries had coverage rates that were much lower. Swaziland, with the highest prevalence of HIV of all countries studied at 34.4 per cent, had an ARV coverage rate of just 35 per cent. Gabon, with an HIV prevalence rate of 6.7 per cent, had an ARV coverage rate of 39 per cent. Guinea, with an HIV prevalence of only 1.5 per cent, had an ARV coverage rate of 26 per cent. Burundi, with an HIV prevalence rate of 3.1 per cent, provided for only 17 per cent of those in need of life-saving medicine. Angola, with an HIV rate of 3.1 per cent, provided ARV coverage for only 16 per cent of those in need. Nigeria is similar, with HIV prevalence of 3.5 per cent and an ARV coverage rate of 13 per cent. Ghana and Niger have prevalence rates of 2.2 per cent and less than 1 per cent respectively, with treatment rates at 12 per cent and 13 per cent respectively.

Figure 10: Antiretroviral Therapy Coverage in Advanced HIV Disease
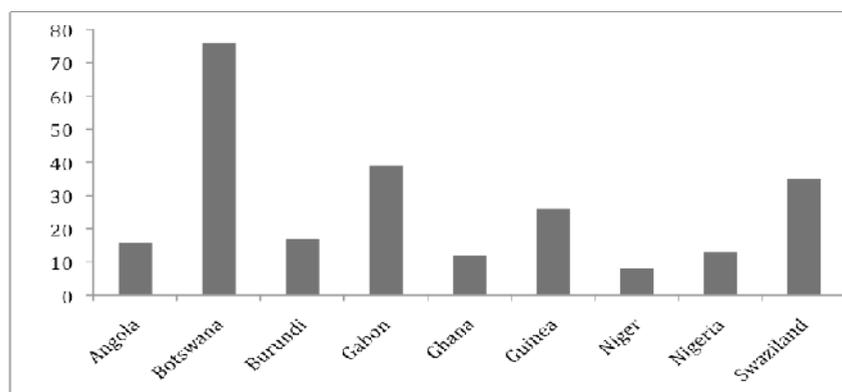
Source: World Health Organization 2009.

Tuberculosis, DOTS Coverage

When considering health status in SSA, it is essential to consider the prevalence and treatment of tuberculosis. Tuberculosis is a contagious disease. If not treated, each person with active TB will infect, on average, 10 to 15 people every year (World Health Organization 2009b). People with HIV infection are much more likely to develop TB than the HIV-negative population. The estimated incidence rate, meaning newly diagnosed cases, of TB in SSA is 350 cases per 100,000 of the population (WHO 2007). The detection rate in Africa is 46 per cent, making it the region furthest from the target of 70 per cent detection (World Bank 2008 Report). The highest number of deaths and highest mortality per capita associated with TB is in the African region. The TB epidemic grew rapidly in the 1990s, but this growth has been slowing down and incident rates are stabilizing or beginning to fall.

DOTS (Directly Observed Treatment Short-Course) programs involve diagnosis and registration of each tuberculosis patient, followed by standard multi-day treatment. DOTS programs are helping to curb the impact of this disease. Worldwide, the success rate in 2005 for DOTS was 84.7 per cent, just below the target of 85 per cent. However, if current trends continue in SSA, they will fall short of both targets, making it difficult to reach the global goal. DOTS has not yet impacted the worldwide transmission and incidence rates that are needed to reach the 'Stop TB Partnerships' goal of halving the 1990 prevalence and death rates by 2015.

Figure 11: Tuberculosis Treatment Success under DOTS (%)
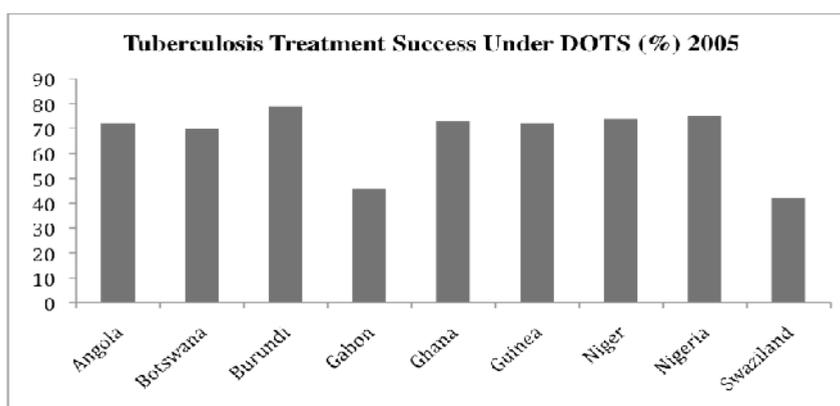
Source: World Health Organization 2009.

HIV and TB form a dangerous combination, each accelerating the other's progress. TB is the leading cause of death amongst people who are HIV positive. In Africa, HIV is the most important contributing factor to the increase in TB incidences. Treatment for TB is complicated due to the various drug resistant forms that are being diagnosed. Drug resistant TB can be treated, but it takes extensive treatment, lasting up to two years. Managing the combination of HIV/TB in SSA is a vast task, but a necessary one for getting these countries' health status on track.

Health Status Composite Score

A health composite score of 10 represents the best health and a score of 0, the worst health. The following variables are included in the health status score: government health expenditure as a percentage of GDP, female life expectancy, maternal mortality, fertility rate, infant mortality, under-5 mortality, births attended by skilled health personnel, contraceptive prevalence, ARV treatment in advanced HIV disease, and DOTS treatment success rate. The final health status score will allow ranking of these countries from the best health status to the worst health status, which in turn will allow for comparison with the final economic composite score.

Botswana had the highest score for health of all the countries studied, with a score of 9.20. Botswana had the highest scores on government expenditure on health (10.0), maternal mortality (10.0), infant mortality (10.0), births attended by skilled health providers (10.0), and treatment for advanced HIV disease (10.0). Gabon has the second highest health score at

8.06 and the highest scores on life expectancy (10.0), infant mortality (10.0), and under-5 mortality (10.0). Ghana came third, with a score of 7.25, and had high scores in government expenditure on health (8.61), life expectancy (9.66), and DOTS treatment success (9.24). In addition, Ghana's scores were relatively high for maternal mortality (8.73), infant mortality (8.29) and under-5 mortality (8.28).

Swaziland came fourth with a health status score of 7.13, and had high scores in government expenditure on health (8.19), maternal mortality (9.92), and contraceptive prevalence (10.0). Guinea came fifth with a health status score of 5.74, and had high scores in government expenditure on health (7.91), maternal mortality (9.92), and DOTS treatment success (9.11). Nigeria ranked in the sixth position with a score of 5.74, with good scores in life expectancy (8.16), and DOTS treatment success (9.49). Burundi took the seventh position with a score of 4.80, with a good score in life expectancy (8.33), and the highest score in DOTS treatment success (10.0). Angola placed eighth, with a score of 4.65, with the worst scores in infant mortality and under-5 mortality (0.0). Niger ranked last with a health status composite score of 2.84. The country scored lowest in maternal mortality (0.0), fertility (0.0), infant mortality (0.63), under-5 mortality (0.41), births attended by skilled health personnel (1.81), and HIV treatment of advanced disease (1.05).

Figure 12: Health Status Score
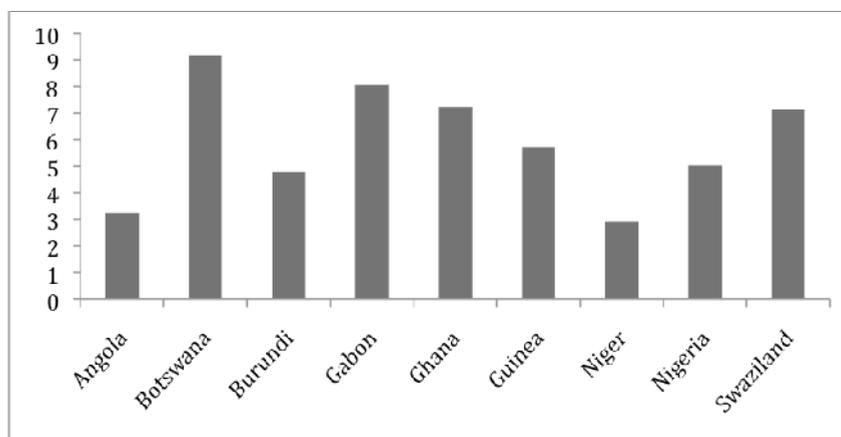
Source: Combination of World Health Organization Data 2009.

Economic Evaluation

Human Development Index

Each year since 1990, the Human Development Report has published the human development index (HDI). This measure looks beyond GDP to a broader definition of wellbeing. The HDI is a composite measure of three dimensions of human development: living a long and healthy life, being educated, and having a decent standard of living. These are measured by life expectancy, adult literacy and enrollment in school, and purchasing power parity. This index primarily provides a wider view of human progress and the relationship between income and wellbeing.

The human development index includes rankings of 179 countries. Angola, Gabon and Guinea only had a score available for 2005. Gabon is ranked 119/179 with a score of 0.677, the highest HDI score of all countries studied. Botswana is next with a rank of 124/179 with a score of 0.654, and Ghana ranked 135/179 with a score of 0.553. Swaziland ranked 141/179 with a score of 0.547. These four countries are considered to be in the group of countries labeled 'medium human development'. Nigeria is ranked at 158/179 with a score of 0.47 while Guinea is ranked 160/179 with a score of 0.456. Angola is ranked 162/179 with a score of 0.446. Burundi is ranked 167/179 with a score of 0.413. Close to the bottom of the list is Niger, ranked at 174/179 with a score of 0.374. These are ranked as 'low human development' countries. The health data, however, shows that certain countries, even those considered as low human development, have health programs and services that will positively impact the lives of women and children.

Table 1: Human Development Report 2007/2008

| HDI Rank and Trends				
Medium Human Development		1990	1995	2005
119	Gabon	-	-	0.677
124	Botswana	0.674	0.631	0.654
135	Ghana	0.517	0.568	0.553
141	Swaziland	0.633	0.592	0.547
Low Human Development				
158	Nigeria	0.411	0.445	0.47
160	Guinea	-	-	0.456
162	Angola	-	-	0.446
167	Burundi	0.366	0.368	0.413
174	Niger	0.279	0.321	0.374

Source: United Nations Development Program.

Gross Domestic Product Per Capita

Gross Domestic Product per capita is obtained by taking the total country GDP and dividing it by the population. It shows what the GDP actually translates into an individual level. GDP as a whole can be misleading due to inequity in income distribution, utilization of a country's resources and who actually benefits financially from these resources. The same can be said of per capita GDP, but it is considered to be a more accurate reflection of the current economic status of the people within a country.

The highest GDP per capita in 2007 belonged to Gabon at $8,085.27, with Botswana close behind with $7,932.88. Angola came third with $3,756.18, and Swaziland fourth with $2,837.53. Nigeria came fifth with a GDP per capita of $1,160.79. Ghana, Guinea, Niger and Burundi all have per capita GDPs at levels below one thousand dollars. They are, in order of highest to lowest, Ghana at $690.01, Guinea at $417.48, Niger at $312.66, and Burundi at $124.93. Angola, Botswana, Gabon, Nigeria and Swaziland all showed significant upward trend in GDP per capita from 2000 to 2007.

Figure 13: Gross Domestic Product Per Capita, Current Prices in US$
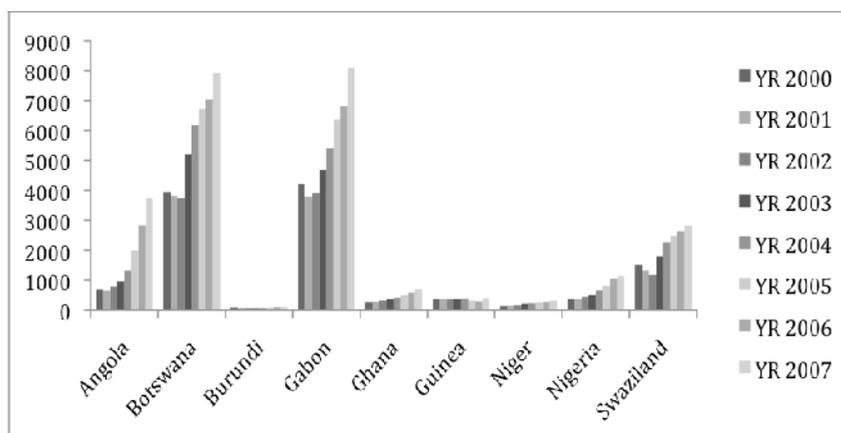
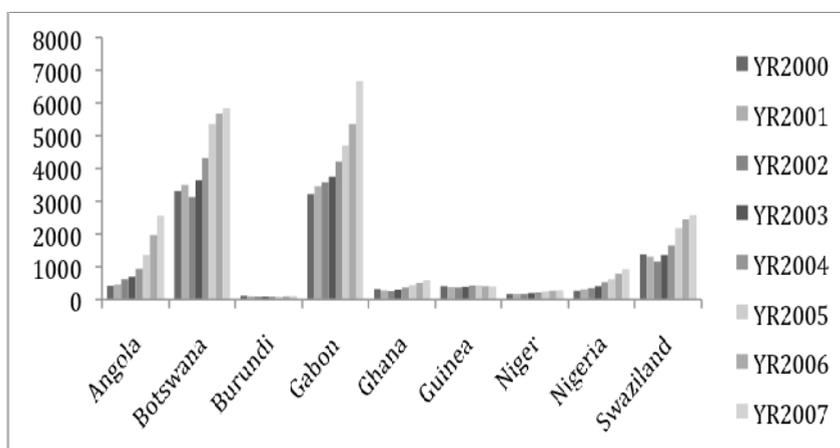Source: World Bank 2009.

Gross National Income Per Capita

Gross National Income per capita is the dollar value of a country's final income, divided by its population. It is meant to reflect the average income of a country's citizens. GNI per capita is an indication of a country's economic strengths and needs, as well as the general standard of living

enjoyed by the average citizen. A country's GNI per capita is closely linked with other indicators that measure the social, economic, and environmental wellbeing of a country and its people. In general, people living in countries with higher GNI per capita tend to have longer life expectancies, higher literacy rates, better access to safe water, and lower infant mortality rates.

The average GNI per capita worldwide in 2007 was $7,958, more than 8 times sub-Saharan Africa's average of $952. In the World Bank database of world development indicators, 209 countries are listed, from highest to lowest, in GNI. The rank of the countries in this study are: Gabon 80/209, Botswana 86/209, Swaziland 124/209, Angola 125/209, Nigeria 161/209, Ghana 175/209, Guinea 187/209, Niger 200/209, and Burundi 209/209 (World Bank 2008). The GNI per capita ranked similarly to the GDP per capita with one exception, Angola and Swaziland ranked third and fourth respectively in GDP per capita and fourth and third respectively in GNI per capita. All the other countries had the same ranking. The GNI per capita in 2007 for Gabon was $6,670, Botswana $5,840, Swaziland $2,580, Angola $2,560, Nigeria $930, Ghana $590, Guinea $400, Niger $280, and Burundi $110. Only four countries studied had GNI per capita greater than the SSA average. Figure 14 shows consistent increases in GNI for Gabon, Botswana, Angola, Swaziland, and somewhat less for Nigeria.

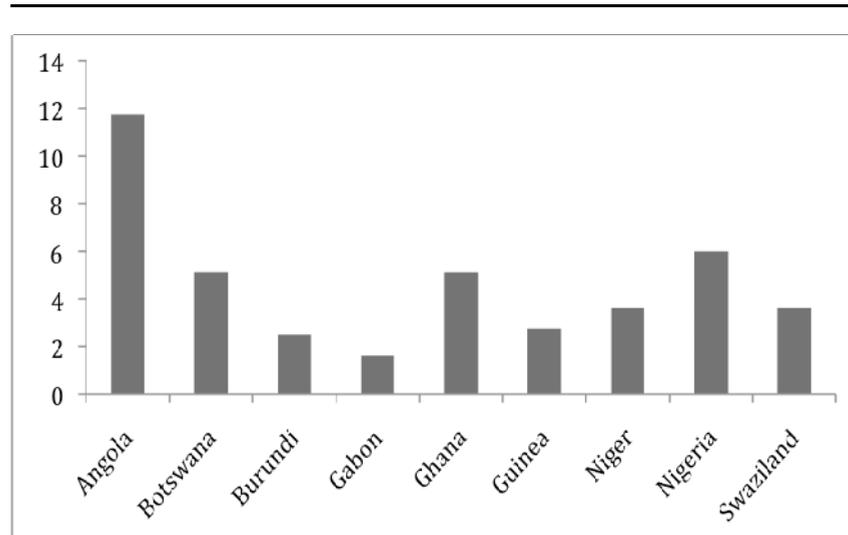Figure 14: Gross National Income Per Capita, Atlas Method, in US$

Source: World Bank 2009.

Gross Domestic Product Annual Growth

Gross Domestic Product (GDP) is a general figure often used to assess the productivity of a nation. However, the number can be misleading. Due to the accounting practices that are used and numerous other factors that can affect a country's GDP, it is a figure that must be taken into account with other economic indicators, and never alone as a sole indicator of a country's economic growth.

Angola had the highest annual GDP growth from 2000 to 2007, with an average growth of 11.75 per cent. Nigeria came second with 6 per cent. Botswana and Ghana both came third with an average annual GDP growth of 5.12 per cent. Niger and Swaziland came fourth with 3.62 per cent. Niger consistently ranked low for most health and economic variables. Guinea came fifth with an average annual GDP growth of 2.75 per cent while Burundi came sixth with 2.50 per cent. Burundi consistently ranked at the bottom for health and economy. Gabon came last with an average annual GDP growth of 1.62 per cent. This is opposite to Gabon's GNI per capita average annual growth of 16.9 per cent, which ranks it as number one for that variable.

Figure 15: Gross Domestic Product Annual Growth Percentage
2000-2007

Source: World Bank 2009.

Gross National Income Per Capita Annual Growth

Gabon had the highest Gross National Income per capita average annual growth rate, at 16.9 per cent. This compares to a GDP growth rate of 2.129 per cent, where it was ranked eighth. The GNI growth rate is more consistent with Gabon's performance for all other indicators. Angola is second with a GNIpc average annual growth rate of 13.1 per cent, consistent with Angola's GDP numbers. Ghana ranked third with an average GNIpc annual growth rate of 7.2 per cent while Botswana came fourth with 4.8 per cent. Swaziland ranked fifth with an average GNIpc annual growth rate of 4.2 per cent. Nigeria ranked in the sixth place with an average GNIpc annual average growth of 3.5 per cent. Burundi, with 3.1 per cent, ranked seventh instead of last as in GDP growth. Niger had a zero growth rate, while Guinea had a negative GNI per capita annual average growth rate of -1.8 percent. There were interesting differences between GDP and GNIpc average annual growth for Gabon and Guinea. Gabon had a GNIpc growth of 16.9 per cent, ranking number one and a GDP growth of just 2.129 per cent, ranking it eighth, a large differential. Guinea ranked fifth in GDP at a reasonable growth of 3.611 per cent, while in GNIpc it ranked last with an average annual loss of -1.8 per cent.

Figure 16: Gross National Income Per Capita Annual Growth
2000-2007
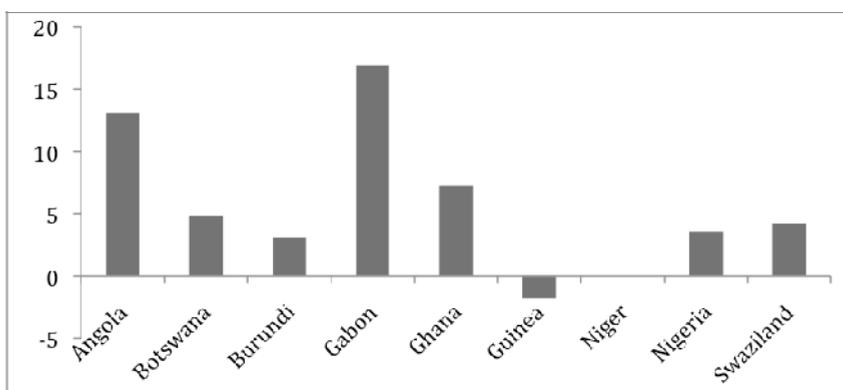
Source: World Bank 2009.

## Gross National Income Per Capita Purchasing Power Parity

Gross National Income per capita, purchasing power parity, is a key indicator when examining a country's economic wellbeing. It measures the relative purchasing power of different countries' currencies over the

same types of goods and services, despite differential rates of inflation. This allows for a more accurate comparison in standard of living across countries (Nations Online, World Bank 2010). Gabon and Botswana rank first and second with a score of 10 and 9.3 respectively. Swaziland ranked third with a score of 3.8. Angola ranked fourth with a score of 2.58. Nigeria and Ghana came fifth and sixth with scores of 1.3 and 1.0 respectively. Guinea ranked seventh with a score of 0.9. Niger ranked eighth at 1.3, and Burundi last at 0.3. By far, the best standard of living is represented in the top two rankings, as they are far greater than the others.
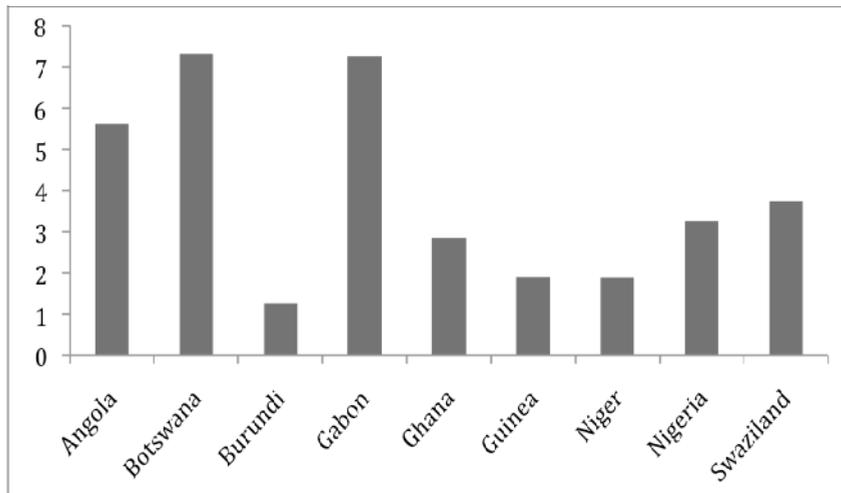
Economic Composite Score

For the economic composite score, 10 indicates the best economic growth, and the score of 0, the worst. Botswana ranked first with an economic composite score of 7.32. Botswana was strong on all economic variables. Gabon came close in the second position with an economic composite score of 7.26. Gabon as well was strong in all economic variables. Angola came third with an economic composite score of 5.62, and was very strong in GDP growth, yet weak in HDI. Swaziland came in fourth with an economic composite score of 3.74. Swaziland had good numbers for GDP per capita and GNI per capita, as well as HDI. However, the GDP and GNI per capita growths were weak.

Figure 17: GNI Per Capita Purchasing Power Parity, in International Dollars
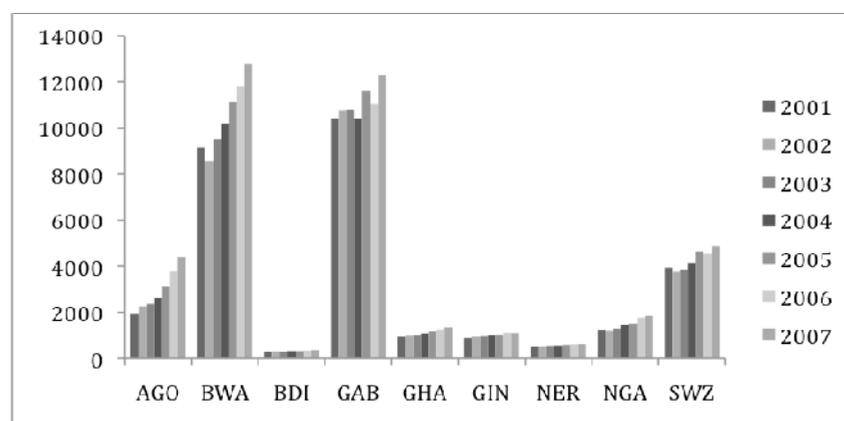
Source: World Bank 2010.

Figure 18: Economic Composite Score

Source: Combination of World Bank, International Monetary Fund and
    Human Development Report Data 2009.

Nigeria came fifth with an economic composite score of 3.26. Her GDP
growth was fairly good but the GNIpc, GDP, and GNIpc growth were
quite low. Ghana came sixth with an economic composite score of 2.85.
Ghana had consistently good GDP growth and a good HDI, but was weak
in all other economic variables. Guinea ranked seventh with an eco-
nomic composite score of 1.90. Her negative GNIpc growth decreased the
composite score greatly. Niger came eighth with an economic composite
score of 1.89. She had very low scores for GNIpc and GDPpc. As well,
Niger had a zero GNIpc growth score. Burundi came last with an eco-
nomic composite score of 1.26. The country had very low scores for all
economic variables.

The Final Analysis

In the final analysis, I ranked each country's health composite score and
economic composite score, from the best health and economy to the worst.
This allows an evaluation of each country's ranking, and ultimately
reveals whether or not there is a correlation between women's health
status and a country's economic growth. Do healthy women positively
influence their country's economy? Can we make any assertions from
the data presented at all? Are there other more influential factors that
must be considered?

For this study's purpose, I considered a country's health status and economic status to correlate if they had equal ranking or were separated by no more than two rankings. For example, if a country has a health status composite score ranking of 1 and an economic composite score ranking of 3, I believe that they are close enough to confirm my hypothesis. In other words, any country with scores that rank more than two apart would not support my hypothesis. If a country did not support my hypothesis, I offer an explanation, should one exist, which would help us better understand the difference in the rankings. As Figure 18 shows, seven out of the nine countries studied showed a direct correlation between health status and economic growth, one is slightly off, and one is a significant outlier.

Table 2: Health and Economic Composite Score Ranking

Country	Health Composite Score	Economic Composite Score
Botswana	9.20	7.32
Gabon	8.06	7.26
Ghana	7.25	2.85
Swaziland	7.13	3.74
Guinea	5.74	1.90
Nigeria	5.03	3.26
Burundi	4.80	1.26
Angola	3.26	5.62
Niger	2.84	1.89

Botswana was consistent throughout all the data sets. It came in with the highest composite health score at 9.20 and the highest economic score of 7.32. Throughout all of my research, Botswana had high performance scores, whether health or economic. Botswana is a clear example of the correlation between women's health status and economic growth, and thus supports my hypothesis. Gabon ranked second for both scores with a health composite score of 8.06, and an economic composite score of 7.26. Gabon performed consistently high amongst all the variables with the exception of GDP average annual growth. Gabon had an average GNIpc annual growth rate of 16.9 per cent, and the highest scores for GNIpc PPP and HDI. Gabon supports my hypothesis.

Ghana came third for health with a composite score of 7.25, and sixth with an economic composite score of 2.85. Ghana scored consistently amongst most variables. Ghana's GNI per capita score of 0.88 and GDP per capita score of 0.85 drove down her overall economic score. The reason

why I believe Ghana still supports my hypothesis is because her economic score, although relatively low, still represents consistent economic performance over the time period studied, including a 6 per cent GDP growth over the past four years. As well, the health composite score correlates directly to her HDI score, which ranked her third at 8.16. HDI takes a broader look at a country's wellbeing, and there could be a lag in certain economic variables.

Swaziland ranked fourth for both the health composite score at 7.13, and the economic composite score at 3.74. Swaziland had strong health scores in life expectancy, maternal mortality, fertility, births attended by skilled personnel, and contraceptive use. Swaziland also had a strong HDI score of 8.07. The only health variable she was somewhat weak in, compared to the other countries studied, was infant mortality. Overall, the scores and ranking of Swaziland support my hypothesis. Guinea is ranked fifth in health with a composite score of 5.741, and seventh with an economic composite score of 1.90. Guinea was weak in some key individual health variables, which may be diminishing her economic growth. The country had low scores in fertility, skilled health personnel at births, contraceptive use, and ranked low to average on most other health scores. As well, she had a low HDI ranking, and very low GNI per capita average annual growth score of -1.06. The correlation between her health status and economic growth supports my hypothesis.

Nigeria ranked sixth for health with a score of 5.03 and fifth with an economic score of 3.26. Nigeria had low scores for six of the ten health variables measured. She was low in maternal mortality, fertility, under-5 mortality, births attended by skilled personnel, contraceptive use, and HIV antiretroviral coverage for people with advanced disease. This correlates to her low economic score. Her rankings support my hypothesis. Burundi ranked seventh with a health score of 4.80 and last with an economic score of 1.25. Burundi had relatively low individual health variable scores across the board except in ranking number one for DOTS treatment success. DOTS scores were high for seven of the nine countries studied. The potential significance for Burundi is that with the DOTS success, she shows that she has the ability to implement a health program and get results. The country would need to translate that success into other areas of need. All individual economic scores were extremely low. Burundi supports my hypothesis.

In this study, there was one major outlier, Angola. The country ranked eighth in health with a composite score of 3.26, and ranked third for economic growth with a composite score of 5.62. Therefore, we must ask ourselves, if there is a reasonable explanation for why Angola has poor

women's health, and high economic growth. Angola is unique in its circumstances and challenges. 'Despite a fast-growing economy due to a major oil boom, she ranks in the bottom 10 per cent of most socioeconomic indicators. Angola is still recovering from 27 years of nearly continuous warfare, and it remains beset by corruption and economic mismanagement' (US Dept of State 2009).

In 2008, crude oil accounted for 83 per cent of Angola's GDP, 95 per cent of exports, and 83 per cent of government revenue. However, the oil industry is offshore and has little, if any, connection with other sectors of the economy (US State Department 2009). This is despite the fact that the Angolan government has pressured oil companies to use local businesses and to increase the number of Angolan staff. Oil production revenues are not impacting the Angolan economy on a micro level, and in essence should not be considered in an aggregate of economic data. Clearly, much of the income generated by the oil industry does not reach the people of Angola. Therefore, their high GDP growth has no real impact on the individual lives of Angolans. It seems as if there are two separate economies, the real economy of the people, and the economy of the government.

One could argue that the Angolan government has found a way to grow economically, while not tending to the health needs of women, thus negating my hypothesis. I would argue that economic growth based purely on a non-renewable resource, such as oil, is not sustainable in the long term. The only really sustainable resource a government has is its people. In addition, what good is economic growth that does not help advance and strengthen all aspects of a country? Therefore, although it appears at first glance that Angola negates my hypothesis, I believe that further investigation into her GDP growth would negate that variable's impact. The HDI index could be considered the best overall indicator for Angola's economic wellbeing. If this is the case, Angola ranked seventh on HDI, very close to her eighth ranking for health, thus supporting my hypothesis.

Niger is ranked last with a composite health score of 2.84, and eighth with a composite economic score of 1.89. Niger is one of the poorest countries in the world according to the United Nations Development Fund Index. It has experienced drought cycles, desertification, and strong population growth. In 2000, Niger qualified for debt relief under the International Monetary Fund program for Highly Indebted Poor Countries (HIPC). 'Debt relief provided under the enhanced HIPC initiative significantly reduces Niger's annual debt service obligation, freeing funds for expenditures on basic health care, primary education, HIV/AIDS prevention, rural infrastructure, and other programs geared at poverty reduction' (CIA 2009).

Niger's scores across most health variables are very low with the exception of the DOTS treatment program. The country scored very low on most economic variables, with zero GNI per capita growth, and minimal GDP growth. She has many challenges but many opportunities as well. The country has natural resources that can be exploited for growth, and if she spends the debt relief money as stated above, she would have a healthy workforce to assist her in building the country and economy. A strong first step would be to improve her extremely high rates of maternal and infant mortality. Niger supports my hypothesis.

Concluding Thoughts

The narrative of women's health as it relates to economic growth will continue to unfold. As women grow in stature around the world and their contributions to society are better understood, developing countries will begin to appreciate this under-utilized resource for economic growth. Although I cannot unequivocally prove my hypothesis, I believe that the data clearly supports that there is a strong correlation between women's health status and a country's economic growth, showing that where women's health status is high, economic growth is high; and where women's health status is low, economic growth is low. This study should convince developing countries to invest in women's health, not only because it is the right thing to do but also because it is economically advantageous.

These data should be food for thought for those who seek to improve women's health, and for those whose primary interest lies in helping developing countries grow their economies. Women give birth, care for the young and old, and are the foundation of the family and community. In strengthening them, I believe we do strengthen the whole of society. We can no longer allow women to die in pregnancy and childbirth, or from treatable or preventable diseases. We must ensure women's health, not only for the sake of ethics but also for the sake of building economically strong countries where all the people can thrive.

References

Anant, B., 2008, 'Ethical, Social and Cultural Issues Hinder Scientific Advances from Reaching Africa', *MedicalPost*, February.

Bell, C., Devarajan, S., Gerbach, H., 2003, 'The Long-Run Economic Costs of AIDS: Theory and Application to South Africa', *World Health Report*, June, Washington DC: World Bank, p. 2.

Bloom, D. E., Canning, D., Jamison, D. T., 2004, 'Health, Wealth and Welfare', Finance and Development, Washington, Vol. 41, Issue 1; p. 10.

CIA, 'The World Factbook - Niger', accessed online 8 April 2009 at www.cia.gov.

Chan, Dr. M., Director General of the World Health Organization, 2008, Globalization and Health, 'Remarks at the United Nations General Assembly', UN General Assembly, New York City, United States of America, 24 October.

International Center for Research on Woman , 2005, 'Property Ownership for Women Enriches, Empowers and Protects', *Millenium Development Goals Series*.

Fayissa, B., Gutema P., 2005, 'The Detriments of Health Status in sub-Saharan Africa (SSA)', *American Economist*, Vol. 49, No. 2, pp 60-66.

Fleischer-Djoleto, Dr. C., 2004, 'Community Involvement and Public-Private Sector Collaboration to Make Pregnancy Safer – The Ghana Experience', *African Health Monitor*, January-June, p. 26.

Masimbu, J. Dr. 'Inauguration of a Referral and Feedback System for Improving Emergency Obstetric Care in Burundi', *African Health Monitor*, January-June 2004, p. 29.

Mongella, G., 1995, 'Address by the Secretary-General', Fourth World Conference on Women at the Formal Opening of the Plenary Session, Beijing, China, September.

Nations Online, World Bank, 2010, Definition of Gross National Income Per Capita Purchasing Power Parity.

Oluwole, D. Dr., 2004, 'An Overview of the Maternal and Newborn Health Situation in the African Region', *African Health Monitor*, January-June, p. 22.

The World Bank, 2004, 'The Millennium Development Goals for Health: Rising to the Challenges', World Bank Publication, p. 26.

United Nations, 2008 Millennium Development Goal Report, pp. 21, 25 and 28.

United States Department of State, 2009, Republic of Angola Profile, http://www.state.gov/outofdate/bgn/angola/121389.htm, accessed online 4 December 2009.

Winter, A., 2006, World Health Organization, 'HIV Treatment Access Reaches Over 1 Million in sub-Saharan Africa', WHO Reports, WHO HIV/AIDS Director Dr. Kevin DeCock Outlines Progress and Obstacles to Achieving Universal Access to AIDS Treatment, Toronto. August.

WHO, 2010, World Health Organization Fact Sheet No.104: Tuberculosis, http://www.who.int/mediacentre/factsheets/fs104/en/print.html

World Health Organization, 2008, 'HIV/AIDS Epidemiological Surveillance Report for WHO African Region, 2007 Update', WHO Regional Office for Africa.

World Health Organization, 2009a, 'Key Facts and Finding on the Linkages of Health and Development, Macroeconomics and Health (CMH)'.

World Health Organization, 2009b, 'Global Tuberculosis Control Report'.