Population Dynamics and Human Development Indices in Selected African Countries: Trends and Levels

By

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Abstract

The low level of Human development Index (HDI) in African's countries has been affected by high population growth rate. World statistics show that African countries are in low level of HDI ranking, so that HDI for these countries in 2004 was 0.43 and the annual growth rate for 1975-2004 was % 2.7. In contrast in the other regions at high HDI ranking, HDI and annual growth rate were 0.89 and % 1.1, respectively. The aim of this study is to investigate the trends and levels of demographic variables and HDI in Niger, Sudan, Egypt and Morocco during 1975-2005. These are Muslim-majority countries (refer to countries in which Muslims constitute more than 50 percent of the total population). Data are taken from the United Nations Population Division and Human Development Report (HDR) for 2006. The results explained that there were differences in terms of population growth rates, fertility and mortality indices by their HDI ranking. The life expectancy and HDI have increased drastically and changed in selected African countries. On the other hand, population health indices among these countries, confirms a progress in medical care system. Yet, the level and trend of these indices are facing challenges.

Introduction

Throughout history a variety of circumstances has proved to bring about unexpected changes in population trends. The International debate on population which began as part of the general discourse on development after the second world war had until recently been dominated by the demographic transition theory and its preoccupation with the consequences of the disturbed balance of births and deaths. The policy and practical objective of this concern was to find out how and how soon developing countries burdened with high rates of population growth could be helped to lower their fertility rate. The impact of the latter, on the age-structure and the composition of the population received little serious attention.

Since mid-1980s, however, most developing countries have shown promising signs of fertility decline and the potential consequences of the changes in age structure have received growing recognition by demographers, economists and policymakers. In 2000, approximately 10 percent of the world's people were 60 years old or older. According to the United Nations medium variant population projection, falling fertility and mortality rates will cause this figure to rise to over 20 percent by 2050.

Over the past decades there have been unprecedented increases in material wealth and prosperity across the world. At the same time these increases have been very uneven, with vast numbers of people not participating in progress .Mass poverty, deeply entrenched inequality and lack of political empowerment contribute to deny a large share of the world’s population the freedom to make real choices. (HDR, 2006)

In most societies, poor families have higher mortality and fertility than affluent families. Some of the association between poverty and population reflects the lower educational levels and rural residence of poor households. But the relationship among demographic variables, poverty and affluence is highly complex and it is tied to the broader question of how population size and the pace of population growth are linked to economic development. (Gelbard, 1999).

Table 1: Population Size for the world and other regions in 1960, 2005 and 2050 and its increase percent between 2005-2050

Region	Population Size			Percent Increase 2005-2050
	1960	2005	2050	
World	3.024	6.465	9.076	**40**
Asia	1.699	3.905	5.217	**34**
Oceania	16	33	48	**44**
Europe	604	728	653	**-10**
Northern America	204	331	438	**32**
Latin America and the Caribbean	219	561	783	**39**
North Africa	67	191	312	**63**
Sub-Saharan Africa	226	751	1.692	**125**

Source: United Nations Population Division, (2006).

Table 2: Demographic Indicators in Egypt, Morocco, Sudan and Niger at the threshold of the 21st Century by HDI ranking

Country	Population (in Millions)	Annual Growth Rate (%) 1975-2004	Population Density (per square KM)*	Sex Ratio*	Population Under Age 15 (% of Total)	Population Age 65+ (% of Total)
Egypt	72.6	2.1	73	100.3	33.9	4.7
Morocco	31.0	2.0	68	96.9	31.5	4.8
Sudan	35.5	2.5	15	101.4	39.5	3.6
Niger	13.5	3.2	10	102.8	49.0	2.0

Sources: HDR, UNDP (2006), * Data are taken from UN Projection (2006).

Table 3: Socioeconomic and Health Indices for Egypt, Morocco, Sudan and Niger at the threshold of the 21st Century by HDI ranking

Country	GDP Per Capita (PPP US$)	IMR*	HPI-1 Value (%)	Human Development Indices			
				LE Index	EDU Index	GDP Index	HDI
Egypt	4,211	29.3	20	0.75	0.73	0.62	0.702
Morocco	4,309	30.6	33.4	0.75	0.54	0.63	0.640
Sudan	1,949	64.9	31.3	0.53	0.53	0.50	0.516
Niger	779	110.8	56.9	0.33	0.26	0.34	0.311

Sources: HDR, UNDP (2006), * Data is taken from UN Projection (2006).

Aim of Study

The aim of this study is explaining the trends and levels of demographic variables and Human development Index (HDI) in Niger, Sudan, Egypt and Morocco during 1975-2005. These are some of Muslim-majority countries in Africa continent (refer to countries in which Muslims constitute more than 50 percent of the total population).

Method and Materials

Data are taken from the United Nations Population Division, and Human Development Report (HDR), annual report of the UNDP for 2006. Human development Index (HDI) is a composite index measuring average achievement in three basic dimensions of human development : Living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, second and tertiary level) and having a decent standard of living (measured by GDP).This Index is calculated according to the standard formula:

$$HDI = \left[\frac{1}{3}(E_x Index) + \frac{1}{3}(Edu_x Index) + \frac{1}{3}(GDP_x Index)\right]$$

Finding

Regional Balance: Historical contexts

Since the mid-1970s almost all regions have been progressively increasing their HDI Score. East Asia and South Asia have accelerated progress since 1990. Central and Eastern Europe and Commonwealth of Independent States (CIS), following a catastrophic decline in the first half of the 1990s,has also recovered strongly and regained the level before the reversal. The major exception is Sub-Saharan Africa. Since 1990 it has stagnated, partly because of economic reversal but principally because of catastrophic effect of HIV/AIDS on life expectancy. According to Human development report which has published in 2006, eighteen countries have a lower HDI score today than in 1990-most in Sub-Saharan Africa. Today 28 of the 31 low human development countries are in Sub-Saharan. The low level of HDI in African's countries has been affected by high population growth rate. According to Human Development Report in 2006, African countries were in low level of HDI ranking, so that HDI for these countries in 2004 was 0.43 and the annual growth rate for 1975-2004 was %2.7. This underlines the supreme importance for Millennium Development Goals of national efforts and global partnerships to overcome the enormous inherited disadvantage faced by people in Africa today.

Progress in human development is some times taken as evidence of convergence between the developed and the developing world. In broad terms, that picture is accurate: there has been a steady improvement in human development indicators for the developing world over several decades. But convergence is taking place at very different rates in different regions and from different starting points. Inequalities in human development remain large, and for a large group of countries divergence is the order of the day. This can be illustrated by reference to some of the core indicators that underpin the HDI.

4.1. Growth in population size since 1975s

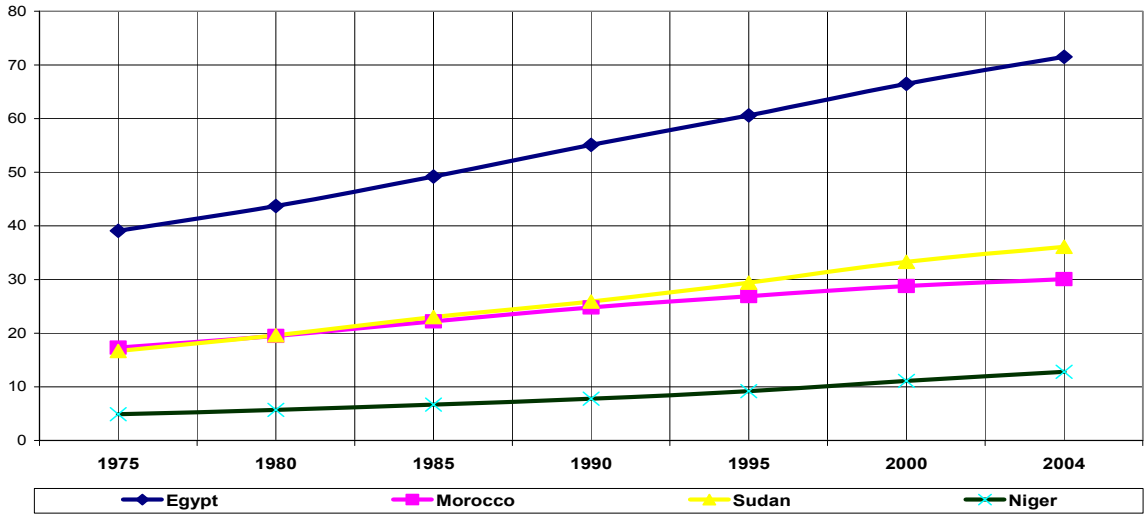
It is well known that twentieth century witnessed remarkable demographic transformations. As indicated in table 4,the four countries entered the second half of the 20th century with small population. Even the largest of them, Egypt had less than 40 million people. Mainly due to reductions in mortality, they experienced high rates of growth during the following two decades. Population size in these four countries has grown slowly except for Egypt with quick change. By 2004, their population size varied markedly from 12.8 million in Niger to 71.5 million in Egypt. (Figure1).

Table 4: Changes in Population Size for Egypt, Morocco, Sudan and Niger during 1975-2004

Country	1975	1980	1985	1990	1995	2000	2004
Egypt	39.1	43.7	49.2	55.1	60.6	66.5	71.5
Morocco	17.3	19.5	22.2	24.8	26.9	28.8	30.1
Sudan	16.7	19.6	23.0	25.9	29.4	33.3	36.1
Niger	4.9	5.7	6.7	7.8	9.2	11.1	12.8

Source: United Nations Population Division, (2006).

Figure 1: Trends of Population Size in Egypt, Morocco, Sudan and Niger during 1975-2004



4.2. Rates of Population Growth

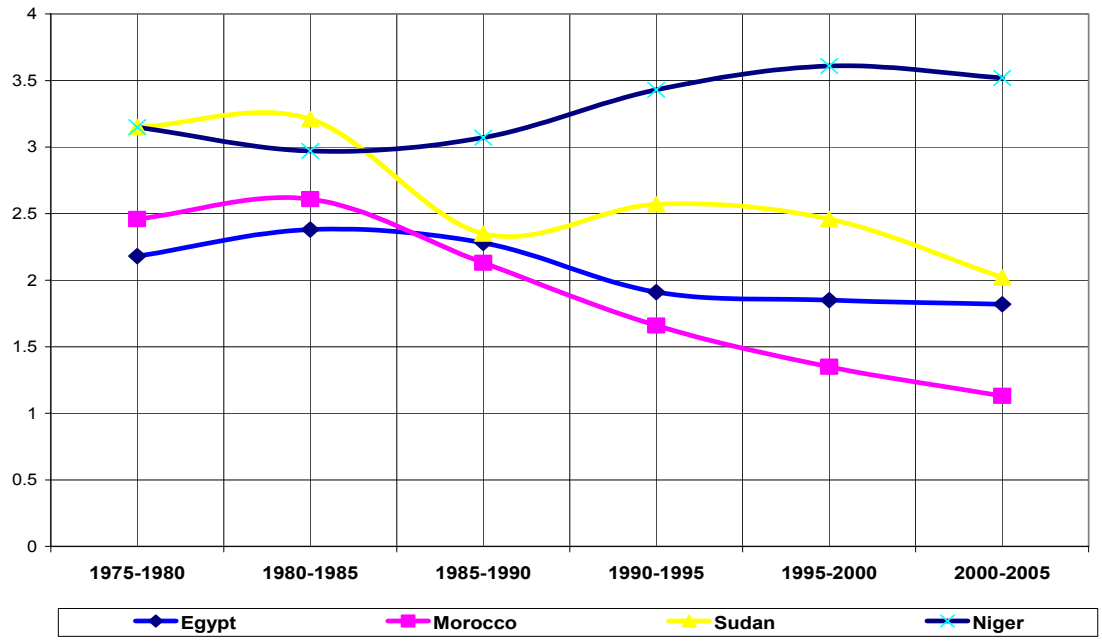
In the majority of the countries, the main reason for population growth was natural increase caused by the disturbance of the traditional balance between births and deaths. As indicated in table 5, despite their relatively high fertility during the period 1980-85, the population growth rate of the four countries has declined slowly during the period 2000-2005 except for Niger due to uncheck fertility probably.(Figure 2).

Table 5: Rates of Population Growth (%) for Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Egypt	2.18	2.38	2.28	1.91	1.85	1.82
Morocco	2.46	2.61	2.13	1.66	1.35	1.13
Sudan	3.15	3.21	2.35	2.57	2.46	2.02
Niger	3.15	2.97	3.07	3.43	3.61	3.52

Source: United Nations Population Division, (2006).

Figure 2: Trends of Population Growth Rates in Egypt, Morocco, Sudan and Niger during 1975-2005



4.3. Changes in population Sex Ratio

Table 6 shows changes in population sex ratio for Egypt, Morocco, Sudan and Niger during 1975-2005. As indicated in table 6, population sex ratio in these four countries has shown commensurate changes. Morocco has experienced the superior position of women between 1985-2005.

Table 6: Changes in population Sex Ratio for Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975	1980	1985	1990	1995	2000	2005
Egypt	102.1	101.3	101.3	101.4	101	100.7	100.3
Morocco	99.9	100.1	99.9	99.5	98.8	97.9	96.9
Sudan	100.1	100.4	100.7	100.9	101.1	101.2	101.4
Niger	102.1	103.1	101.6	100.5	101.4	102.7	102.8

Source: United Nations Population Division, (2006).

4.4. Dynamics of population Growth, A. Fertility

The term fertility transition appeared in demographic literature in the early 1970s and was given a precise meaning as change from natural fertility to family limitation. Since 1970s,most of the African countries have experienced demographic transition. Table 7 shows changes in crude birth rate (CBR) for Egypt, Morocco, Sudan and Niger during 1975-2005. As indicated in table 7, CBR has dropped drastically in these four countries. The predominant role played by fertility changes in the growth rates of these four countries is clearly demonstrated in table 8. From this table it is obvious that all four countries had extremely high total fertility rates (TFR) during 1975-85. Only one country (Morocco) would seem to have experienced a drastic decline in TFR during the following 25 years. By the end of the century, remarkable declines had taken place in all but one country (Niger). (Figures 3 and 4).

Table 7: Changes in CBR (Per 1000 of Population) for Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Egypt	39.8	37.9	35	29.1	26.8	25.5
Morocco	39.4	37.3	32.1	27.3	23.4	20.9
Sudan	45.2	43.5	41.6	40	37.9	34.4
Niger	57	56.9	56.2	55.4	53.8	51.2

Source: United Nations Population Division, (2006).

Table 8: Changes in TFR (Children per women) for Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Egypt	5.61	5.33	4.83	3.91	3.5	3.17
Morocco	5.9	5.4	4.45	3.66	2.97	2.52
Sudan	6.52	6.34	6.08	5.81	5.41	4.82
Niger	8.12	8.1	7.96	7.82	7.69	7.45

Source: United Nations Population Division, (2006).

Figure 3 : Changes in CBR (Per 1000 of Population) for Egypt, Morocco, Sudan and Niger during 1975-2005

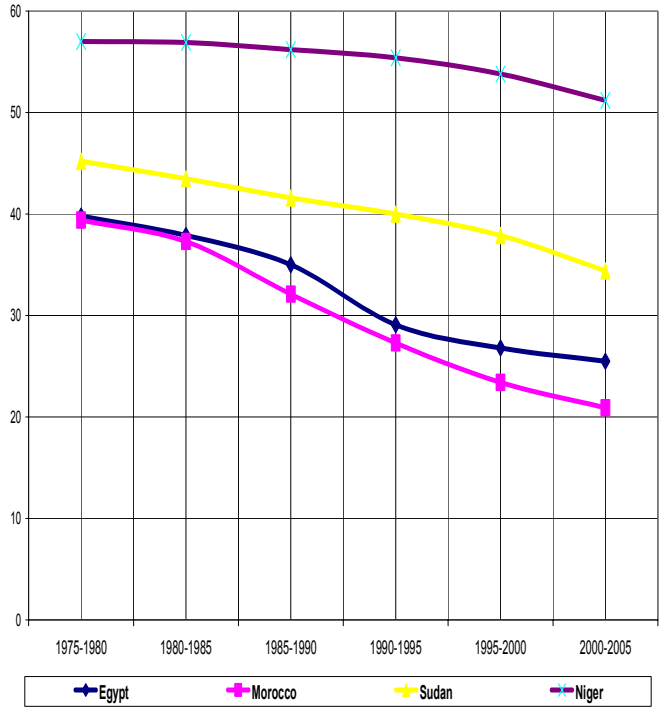
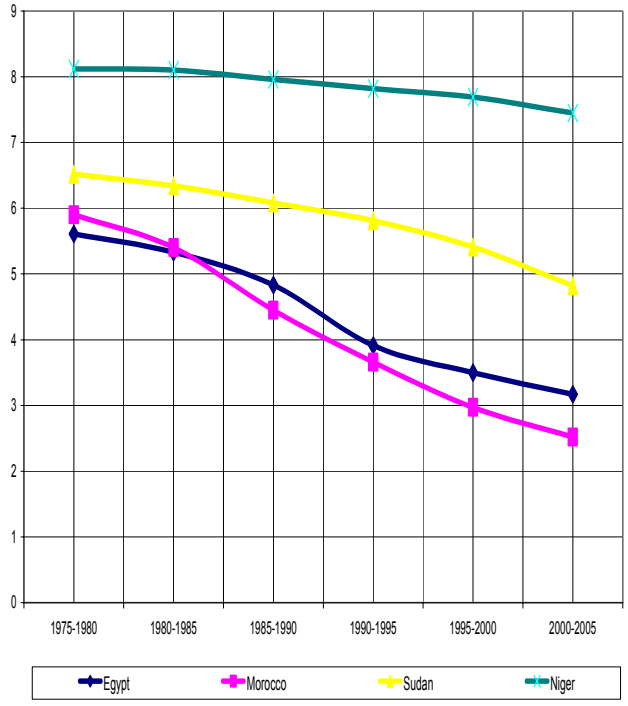


Figure4: Changes in TFR (Children per women) for Egypt, Morocco, Sudan and Niger during 1975-2005



4.5. Dynamics of population Growth, B.Mortality

At the start of the observation period, the crude death rates for Niger and Sudan were relatively higher than two other countries. All of the four countries experienced a considerable fall in mortality rates during 2000-2005. The pace of mortality decline slowed down in these four countries. (Table 9). Also, Infant mortality rate (IMR) in these four countries has followed previous and the global trends. Changes in IMR have shown remarkable declines during the following 25 years. Improvement in health situation has played a effective role in this reduction. (Figures 5 and 6).

Table 9: Changes in CDR (Per 1000 of Population)for Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Egypt	14.5	12.6	10.2	8	6.6	5.9
Morocco	13	10.7	8.7	7.2	6.4	6
Sudan	17.3	15.4	14.4	13.1	11.9	11.2
Niger	25	24.3	23.1	21.1	18.3	15.6

Source: United Nations Population Division, (2006).

Table 10: Changes in IMR (Per 1000 of Births) for Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Egypt	127.5	110.5	88	66.6	48.1	35.9
Morocco	108	88.3	72.1	58	47	37.5
Sudan	117.8	105.8	98.5	90.8	80.1	72.6
Niger	189.1	189.4	186.7	174.5	150.1	118.9

Source: United Nations Population Division, (2006).

Figure 5: Changes in CDR (Per 1000 of Population) for Egypt, Morocco, Sudan and Niger during 1975-2005

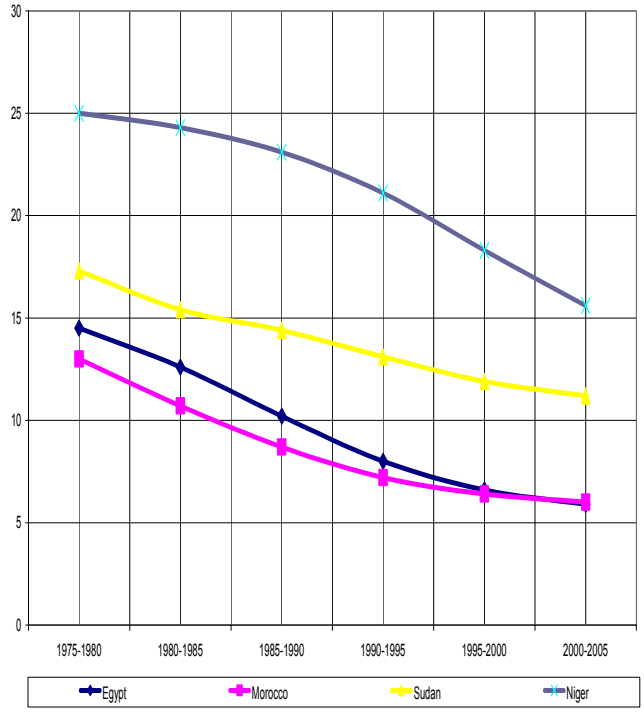
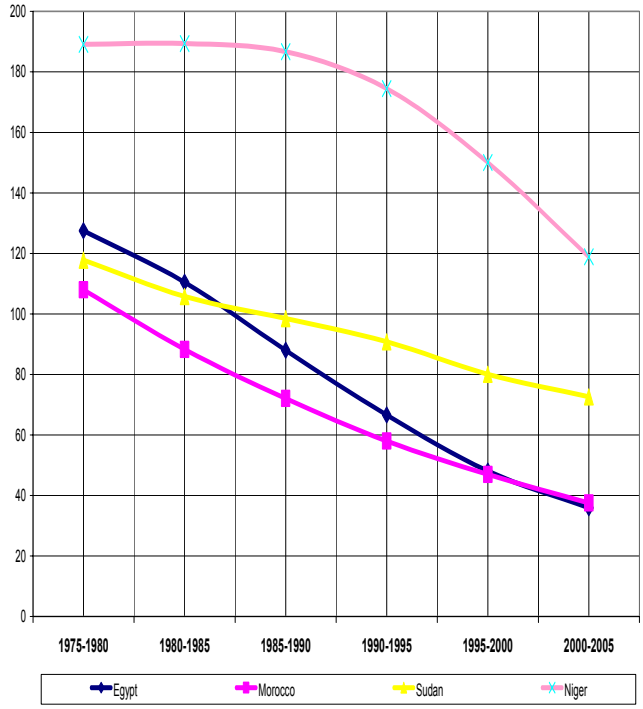


Figure 6: Changes in IMR (Per 1000 of Births) for Egypt, Morocco, Sudan and Niger during 1975-2005



4.6. Life Expectancy at birth

Over the past three decades developing countries as a group have been converging on developed countries in life expectancy. According to United Nations in 2006, globally, life expectancy increased from 47 years in 1950-55 to 56 years in 1965-70. In Asia, life expectancy rose by more than 12 years, from 41 years to nearly 54 years, implying an annual gain of 0.8 years. In Latin America and Caribbean life expectancy rose from 51 to 59 years, increasing by about half a year annually. In Africa the annual increase was more modest, at 0.4 of a year, but life expectancy rose from 38 years in 1950-55 to just less than 45 years in 1965-70.In Africa, the pace of increase was slightly lower, at 0.3 years per annum, so that by the late 1980slife expectancy in the continent stood at over 51 years. Life expectancy increased more slowly in the more developed regions. (United Nations, 2006).

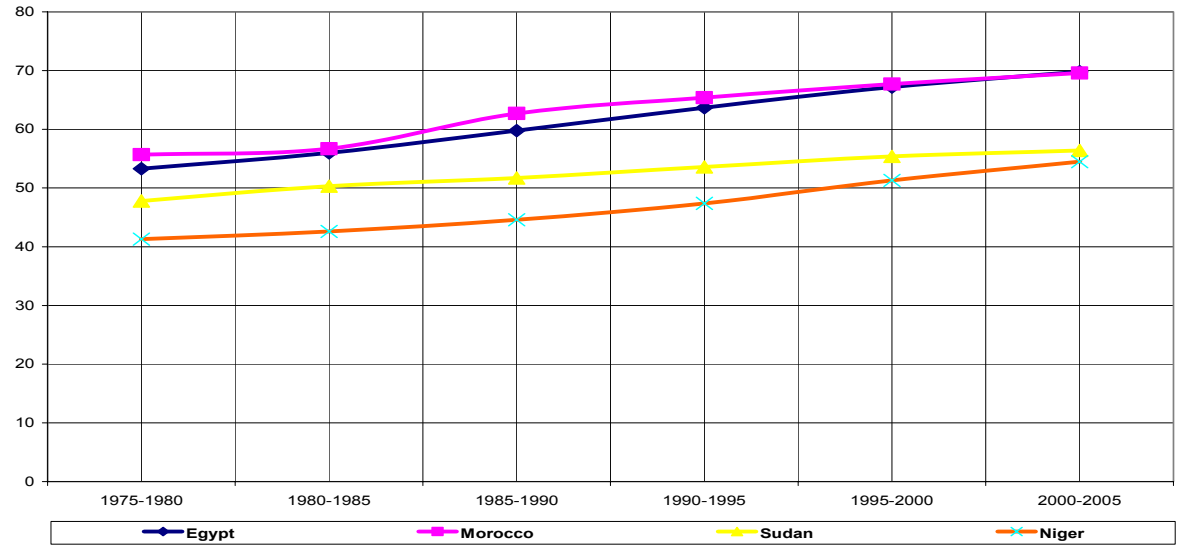
Table 11 shows Life expectancy at birth for Egypt, Morocco, Sudan and Niger during 1975-2004. As indicated in this table, Life expectancy at birth has increased drastically. At the last two decades, Life expectancy at birth increased by almost 20 years. Life expectancy has followed the global trends. (Figure 7).

Table 11: Life Expectancy at birth (Years) in Egypt, Morocco, Sudan and Niger during 1975-2005

Country	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Egypt	53.3	56	59.8	63.7	67.2	69.8
Morocco	55.7	56.7	62.7	65.4	67.7	69.6
Sudan	47.8	50.3	51.7	53.6	55.4	56.4
Niger	41.3	42.6	44.6	47.4	51.3	54.5

Source: United Nations Population Division, (2006).

Figure 7: Life Expectancy at birth (Years) in Egypt, Morocco, Sudan and Niger during 1975-2005



4.7. Trends of Human Development Index (HDI)

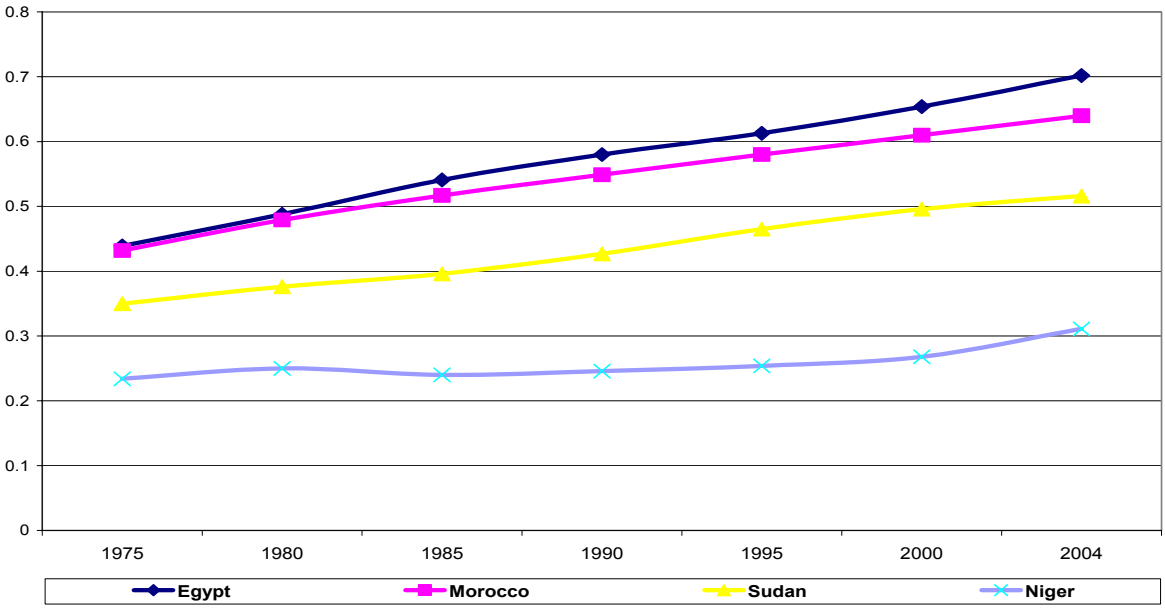
Table 12 shows trends of HDI in Egypt, Morocco, Sudan and Niger during 1975-2004. As indicated in this table, HDI has increased drastically. It is clear that progress in improving health situation such as access to new drugs, vaccine and sanitation, investment s in education and economic opportunity, these were powerful force for increase HDR. Progress in human development is sometimes taken as evidence of convergence between the developed and the developing world. But convergence is taking place at very different rates in different regions, and from different starting points. (Figure 8).

Table 12: Trends of HDI for Egypt, Morocco, Sudan and Niger during 1975-2004

Country	1975	1980	1985	1990	1995	2000	2004
Egypt	0.439	0.488	0.541	0.580	0.613	0.654	0.702
Morocco	0.432	0.479	0.517	0.549	0.580	0.610	0.640
Sudan	0.350	0.376	0.396	0.427	0.465	0.496	0.516
Niger	0.234	0.250	0.240	0.246	0.254	0.268	0.311

Sources: United Nations Population Division, (2006).

Figure8: Trends of HDI for Egypt, Morocco, Sudan and Niger during 1975-2004



Summary and Conclusions

This study explained trends and levels of demographic variables and HDI in Niger, Sudan, Egypt and Morocco during 1975-2005. These are Muslim-majority countries (refer to countries in which Muslims constitute more than 50 percent of the total population) .The low level of HDI in African's countries has been affected by high population growth rate. World statistics show that African countries are in low level of HDI ranking, so that HDI for these countries in 2004 was 0.43 and the annual growth rate for 1975-2004 was % 2.7. In contrast in the other regions at high HDI ranking, HDI and annual growth rate were 0.89 and %1.1, respectively.(HDR,2006).The results explained that there were differences in terms of population growth rates,

fertility and mortality indices by their HDI ranking. The life expectancy and HDI have increased drastically and changed in selected African countries. On the other hand, population health indices among these countries, confirms a progress in medical care system. Yet, the level and trend of these indices are facing challenges.

Concluding Remarks

Many of the stresses of rapid population growth are exacerbated by poverty and inequality. Continued Rapid population growth poses bigger threat to poverty-reduction in most (but not all) countries. This growth will require unprecedented investment in new infrastructure and create undreamed challenges for political and social institutions.

In order to increase human development level in coming decades the following recommendations are put forward:
We have an optimistic view and believe in achievement of human development in these countries and the Africa continent as well, should be a unique mechanism including Monitoring system, Action system and Evaluation system.

The sustainability of these systems will heavily depend on economic growth over the next decades. If the economy grows there will be more resources for investment in further improvement of the progress made in most of the Millennium Development Goals (MDGs). This is particularly true of goals dealing with poverty reduction and job creation. Judicious investment of resources that are likely to be saved due to the continuing fall in the number of children in human capital development and renovation of the industrial infrastructure will be essential for good use of the window of opportunity facing these countries and Africa continent as well.

Collaborative efforts of the international organizations, Civil society, local government, policymakers and stakeholders have a significant role in reduction of urban poverty, orientation of new settlements for preclusion of appearance of slum dwellers, enforced medical care system, empowering

poor people which are necessary for reducing inequalities and eradication of poverty both within and between African countries.

Equality goes hand in hand with investments in education, economic opportunity and reproductive health, and taken together, these are a powerful force for lifting millions out of poverty .More work needs to be done in improving structures and procedures for local governance through deploying emerging tools, methods and techniques, in improving fiscal management and developing capacities. Its relative neglect in international circles could be disastrous.

The out look of HDI requires a fundamental review and will remain a challenging and increasingly important issue in the coming decades.

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